Backup and Recovery

ocess Information receiver

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people Process Information People Process Inform



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Therefore

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1. Introduction

An essential element to an information management system is of course backup of their information. A customer must have the assurance that their information is safe. To ensure this, a carefully thought-out backup policy needs to be in place.

A Therefore[™] document consists of meta data (internal and external index data) and the actual files that make up the document (e.g. a spreadsheet, image or video). The meta data is stored in the database and the files are stored in the filing system (e.g. a hard drive). So the critical elements that need to be secured are the Therefore[™] database and the files stored in Therefore[™].

In order to access these documents an installation of Therefore[™] Server is required to connect to the database and retrieve the documents. The purpose of this document is to offer suggestions on the best way to secure these critical elements, and how to restore them in the case of disaster.

Finally, this document includes instructions for setting up a Therefore[™] system in a failover cluster. Clustering offers customers protection in case a server fails or goes offline. A cluster consists of 2 or more nodes (servers) and protects against hardware failure in the following way: When one node fails, another one jumps in automatically to provide those services in its place with no interruption for users. This process is called failover. Each failover server requires an additional Therefore[™] license. Failover clusters are useful for environments where high availability of the Therefore[™] system is critical. More information about clustering can also be found on <u>Microsoft's website</u>.



2. Therefore[™] Database

When a document is saved to ThereforeTM the meta data is stored to the ThereforeTM database. This includes internal data like the date and who saved it as well as the category index data that was configured in the ThereforeTM Solution Designer.

The database can be located on the same server as where ThereforeTM Server is installed, or it can be on a separate server. There is no recommendation here; the IT administrator needs to decide what is best for his or her situation.

What is important, however, is that the database is backed-up. Therefore[™] does not use an internal mechanism for backing up the database. Database backup should be performed as per the database manufacturer's instructions and the regularity should be decided on depending on the amount and importance of the data being stored.

2.1 How to restore a Therefore[™] database

Simply restore the database from your backup using the manufacturer's guidelines.

What can be done if there is no database backup?

In the extreme case where no backup of the database exists it could be possible to restore or partially restore the database using the Therefore[™] documents and the document information contained in them. This is done using the <u>Therefore[™] Document Recovery Utility</u>.

2.2 Therefore[™] Document Recovery Utility

The ThereforeTM Document Recovery Utility provides the possibility to recover or partially recover certain types of documents after the loss of a ThereforeTM database, and in the event that no database backup is available. Please read the instructions carefully before using this utility.

Therefore[™] Documents are read from a directory (e.g. Buffer or Primary storage) and are extracted to a recovery directory. Additionally, the utility creates an xml file and folder for each Therefore[™] category. These files are then used to import the documents into the new Therefore[™] system via the Therefore[™] Document Loader.

- This utility should not be seen as an alternative to backing up your Therefore™ system.
 - This utility cannot recover all types of documents/information and should only be used in the event of a hard drive crash with no database backup.
 - Content files and Therefore[™] categories belonging to cases are not supported.

The recommended procedure is:

- 1. Start the Therefore[™] Document Recovery Utility from a PC which has access to the directory containing the Therefore[™] documents.
- 2. Click Browse to choose the Import Directory (note: subdirectories are included). Then choose the Recovery Directory (an empty folder where the documents will be recovered to). Click Start to begin the process.

Interefore™ Document Recovery							
Import Directory	E:\Buffer	Browse					
Recovery Directory	E:\Recover	Browse					
Documents per File	0	×					
	<u>S</u> tart						

3. The two-step process will start and progress will be shown.

Recover Progress	
Recovering Document 2130/13323	
Cancel	



4. Once done, a recovery report will be shown. Clicking OK closes the utility.



- If any documents cannot be recovered, a "log.txt" file is created, in the Recovery Directory, with details of all problems.
- All deleted documents will be recovered and restored.
- Manual document links cannot be recovered.
- The documents in the Import directory are not affected in any way.
- 5. In your new Therefore[™] system, recreate the categories for all documents.
- 6. Create a Therefore[™] Document Loader profile for each category.



Therefore™ Content Connector files

- Do not import these files (by default the xml file in English systems is called "Spoolfiles.xml"); these can be restored by processing them with the Therefore[™] Content Connector.
- Therefore[™] Content Connector documents do not exist on the buffer as ".thex" files; hence, they are not included in the recovery process. Instead, they are a part of a file and can be recovered by processing with the Therefore[™] Content Connector. However, Therefore[™] Content Connector documents that have been changed (e.g. annotations, changing index data) are stored as ".thex" files on the buffer. But, the Document Recovery Utility will not process them, because the Therefore[™] Document Loader cannot import them correctly. So any such changes will be lost and need to be redone after reprocessing the documents.
- 7. Use the Therefore[™] Document Loader to import all the documents into Therefore[™].



Document versions are not recognized by the Document Recovery Utility. However, there is a workaround if a unique field exists in the category. This field can then be used in Therefore™ Document Loader to create new versions (see Document Loader manual). Note: if the unique field value has changed from one version to another, or the document was moved to another category, Document Loader is not able to recognize that it is a new version of the document. In addition this workaround does not work in an Enterprise system (multiple Therefore™ Servers) due to issues with unique numbering.



3. Therefore[™] Files

When a document is first saved to ThereforeTM the actual files are stored in the Buffer folder. The location of this folder can be chosen by the administrator. We then recommend the following to ensure that these files are secure.

Primary Storage

We recommend that a Storage policy be created in Therefore^M that continually monitors this folder and moves the files to a Primary Storage location.

Backup Storage

In addition we recommend setting up a backup storage policy that copies the documents to a Backup Storage location that is located in a different place to the Primary Storage. The migration to Backup Storage can also be continuous, but since files are not deleted from the Buffer folder until the Backup migration is complete, we recommend doing this overnight so as to not affect system performance unnecessarily.



Recommended backup policy for files in Therefore™



There are of course other ways of backing up the files, but we recommend the scenario above. Therefore[™] verification tools enable administrators to ensure that all documents are accessible on primary and backup media. In the case of the primary storage location being corrupted or destroyed (e.g. disk crash), it can be repaired or replaced using the backup location. In addition, Therefore[™] supports NetApp® SnapLock® which allows WORM storage.

3.1 What happens if my Primary Storage fails?

The Therefore[™] Console allows the automatic recovery of primary storage from a backup storage and similarly backup storage can be restored from the primary storage. This is done in the Therefore[™] Console. The first step is to check the damaged media and verify which documents are faulty.

1. Click Verify and then Documents... The following dialog will be displayed. Select the media to check and check the mark suspect documents as faulty. Click OK to start. If any faulty documents are found, these will be displayed and also marked as such in the database, otherwise a dialog will appear stating that no faulty documents were found. In addition a log file containing the faulty documents will be created and saved to the C:\Program Files\Therefore folder.

Verify documents	on end media	—
Volumes All volumes <buffer> Primary.FIN Primary.HR Primary.LG</buffer>		OK Cancel Help
File ID from	1 to 1999999999 ocuments only locuments as faulty)
Logfile Log.log		



2. The second step is to repair the faulty documents from a complete media. Click Verify and then Repair. Select the media to be repaired. Once selected a list of media where a copy of the documents exists will be displayed. Select the media to repair from. Next select the option repair faulty documents (according to database). Click OK to start the repair sequence. All documents that should be repaired will be copied from the good media to the buffer. Later on, during regular migration they will be moved from the buffer to a new end media.

Repair damaged disks or	documents	
repair disk: <buffer> Primary Storage.FIN Primary Storage.HR Primary Storage.LG</buffer>	repair from disks:	OK Cancel Help
 repair all documents repair faulty document 	s (according to database)	
include deleted docum	ents in repair operation	

- 3. Once migration is complete, perform a new verification to ensure that all documents are now restored.
 - In the case where only a primary backup is available together with an external backup, then a damaged primary must be restored from an external backup. Where the possibility exists to just restore individual documents, then only the faulty documents as detailed in the log file should be replaced.





4. Therefore[™] Server

To restore the ThereforeTM Server installation a backup of the installation is not essential since reinstalling ThereforeTM and referencing the existing ThereforeTM database will suffice for a full recovery.



- If a backup of the installation is still wanted the C:\Program Files\Therefore and all its contents should be backed up. In addition the Windows® registry should be backed up and in particular HKLM\Software\Therefore.
- If any manual changes were made to the registry then we recommend backing this up. In addition if any Therefore[™] Document Loader profiles were created then these are saved to the registry (if they are created on a client then the client registry needs to be backed up.

4.1 How to restore a Therefore[™] Server

A Therefore[™] Server can be stored as follows:

- 1. Make sure that the connection to a Therefore[™] database is working.
- 2. Re-install the Therefore[™] Server software. The license can be obtained from the existing database which also contains the previous installation path settings and will restore these automatically. In addition the registry settings will be automatically created. If the registry was customized in the original installation, then this will need to be done again, as these settings are not contained in the database. The configuration data is essentially stored in the database and so no additional recover of configuration data is required.

5. Testing

5.1 Installation

After restoring the installation the Therefore[™] services and applications should be tested. It is recommended that the Event Log entries be analyzed after starting the Therefore[™] services. Once the services have been successfully started test the Therefore[™] applications in particular searching for and displaying documents.

5.2 Client communication

The communication between server and clients should be tested to ensure that the DCOM or HTTP/HTTPS communication is working correctly.

5.3 Document Storage

- 1. Use the Therefore[™] Console to verify all documents in the Buffer as well as on the storage devices.
- 2. Save some sample documents to Therefore[™] and then migrate them to the Primary and Backup storage. After migration use the Therefore[™] Console to verify all stored documents.





6. Failover Clusters

The following tutorials explain how to set up a ThereforeTM Server on a failover cluster with two nodes. There are tutorials for both <u>Windows Server 2008 R2</u> and <u>Windows Server 2012 R2</u>. Refer to the Installation Guide for a list of all supported server operating systems. The ThereforeTM Server installation process (on a failover cluster with two nodes) in Windows Server 2016 is the same as in <u>Windows Server 2012 R2</u>.

Failover clusters are useful for environments where high availability of the Therefore[™] system is critical.

Requirements:

- A Windows cluster with at least two nodes
- A Therefore[™] license (without a system PIN check) with at least two server licenses
- The following folders must be placed either on the quorum disk or on a network share:
 - Buffer
 - Cache
 - Fulltext
 - Preview (default location C:\ProgramData\Therefore\Cache\Preview)
 - (Optional) WebCache (default location: C:\Program Files\Therefore\WebCache)



6.1 Windows Server 2008 R2

- 6.1.1 Therefore[™] Server installation Node 1
- 1. Run the Therefore[™] Setup as usual. For more information, see the Installation Guide.
- 2. In the folder configuration dialogs of the Therefore[™] Configuration Wizard, it is recommended to put the Therefore[™] folders on the quorum disk or a network share.

Onfiguration \	Wizard		<u>_ 0 ×</u>
Therefore™ Storage C Configure Therefore™ work	Configuration king directories.		
Welcome			
Activation			
Database	Directory for storing new Th	erefore™ documents:	
Storage	Buffer directory:	C:\ProgramData\Therefore\Buffer	Browse
Full-Text			
Security	Directory for storing tempor	ary Therefore™ documents and other files:	
Services	Cache directory:	C:\ProgramData\Therefore\Cache	Browse
Categories			
Transfer Folders			
Updates			
Finalize			
		Back Next	Finish Cancel

Onfiguration Wizar	d	_	
Therefore™ Full-Text Con Configure Therefore™ Full-Text f	figuration folder and noise-words language.		
Welcome			
Activation			
Database	Enable full-text search for th	is server —	
Storage	Full-text catalog language:	English	
Full-Text	Therefore™ will use this directory for saving the full-text index: Full-text catalog directory: C:\ProgramData\Therefore\Fulltext Browse		
Security			
Services			
Categories			
Transfer Folders			
Updates			
Finalize			
		Back Next Finish Cano	:el





The Preview folder can also placed on the quorum disk or a network share. This can be configured under the advanced settings in the Therefore[™] Solution Designer.

Settings	×						
Ceneral Database Carbe	Permission Sets Server Longing						
Web Server Settings XM	Web Service Advanced						
web server setungs XML web service Advanced							
8. 2↓							
General							
Folders							
Security							
Preview							
Enable Previews	True						
No Preview for Extensions	exe; dll						
Preview Cache	C:\ProgramData\Therefore\Cache\Pre						
Preview Cleanup Time	1000						
Preview Service End Time	420						
Preview Service Start Time	1080						
Size of Preview-Thumbnails	256						
Database							
Cache							
± Logfile							
XML Web Service							
+ SMTP							
Preview Cache Cache folder for preview images of document.							
Display only changed settings							
	OK Cancel Help						



3. Once the setup is finished, open the Therefore[™] Solution Designer and add the second Therefore[™] Server.







4. Define security for the new server and distribute license points. Move one server license to the second server. Note that this is only temporary.

S Therefore	Solution Designer Solution Designer						
File Edit	View Help	÷F	ile E	dit View	Help		
i 🕿 🐷 🕸	. 🙆 🛨	1	2 🖾	FE 🕜 📮			
O Therefore	B™		There	fore™			
📄 🚟 Serve	er	, II <u>-</u>		License			
T	herefore Server herefore Server 2			Settings			
⊨ ≥	Settings			Export			
.	Remove Server			Security Re	port		
	Properties			Security			
∎ ⊕ - €	Security		÷ y	Cross Cate	gory Search	ſemp	
	an roxe boaren		A	z Full-Text S	earch		
📗 🗄 🕀 🚺 U	Isers and Groups		÷ 👬	👔 Users and	Groups		
📗 🕴 🖶 🖓 O	apture Client Profiles		÷ - 🗳	🖕 Capture Cl	ient Profiles		
📗 🗄 🍓 D	ocument Loader Profiles		÷	Document	Loader Profile	s	
	Iniversal Connector Profiles		÷	Universal (Connector Pro	files	

- 6.1.2 Therefore[™] Server installation Node 2
- 1. Force failover by starting the cluster service on the second cluster node (if it's not running) and stopping the cluster service on the first cluster node.

📱 Failover Cluster Manager						
File Action View Help						
🗢 🔿 🖄 🖬 🛛 🖬						
Hailover Cluster Manager □ 🎲 TheCluster.bdados.com	Eailover Cluster Manager Services and applications					
🕀 🧱 Services and applicat	ions	Name	Status			
🗆 📑 Nodes		TheServer	🕤 Online			
📇 Storage	Pa	ise				
🗉 🌉 Networks	Re	ume				
Eluster Events	Sh	w the critical events for this cluster node				
	Start Cluster Service					
	Re	resh	Stop Cluster Service			
	He	p	Evict			

- 2. Run the Therefore[™] Setup as usual. In the licensing dialog of the Configuration Wizard, choose the option to load the Therefore[™] license from the Therefore[™] database.
- 3. In the <u>folder configuration dialogs</u> of the Therefore[™] Configuration Wizard, it is recommended to place the Therefore[™] folders on the quorum disk or a network share.

6.1.3 Configuring the Therefore[™] system for clustering

1. After Therefore[™] has been successfully installed on both cluster nodes, open the Solution Designer on any Therefore[™] Server and remove the second Therefore[™] Server.





2. Rename the first Therefore[™] Server.



Server Properties	<u>_</u> _	1
		Leave unchanged
Server name:	Therefore Server	
		Cluster name
Computer name:	TheCluster	
	C_	Current domain
Domain:		
		Any name
Site:		
	error I unto I	
	Lancei Help	

The cluster name can be seen in the Failover Cluster Manager console:





3. Add the cluster name to the registry on both cluster nodes.

🍻 Registry Editor 📃 🗖 🗙							
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>H</u> elp							
主 🕒 Classes 🔺	Name	Туре	Data				
🕂 🕀 🔁 🔁 Clients	(Default)	REG_SZ	(value not set)				
🕀 📄 📄 Description	🔀 CacheLastAge	REG_DWORD	0x000005a0 (1440)				
🕀 🖳 🗄 🗎 🕀 😥	BBrand	REG_DWORD	0×00000001 (1)				
	ab DBName	REG_SZ	thesql/Therefore				
🕀 🕀 📃 🕀 🕀 🕀	ab ClusterName	REG_SZ	TheCluster				
RegisteredApplicatic		-					
Info							
Server							
I IIII IIII IIIII IIIII IIIIIIIIIIIII							
I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII							
HKEY_USERS							
HKEY_CURRENT_CONFIG							
	•		Þ				
Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Therefore\Server							

- 6.1.4 Adding the Therefore[™] Server Application to the cluster
- 1. Expand the cluster in the Failover Cluster Manager console. Right-click on Services and applications and select Configure a Service or Application.

📲 Failov	ver Cluster Manager	
File A	ction View Help	
🗢 🔿	2 🖬 🛛 🖬	
📲 Failo 🖃 🎲 T	ver Cluster Manager 'heCluster.bdados.com	Services
Ę	Services and applications	Name ,
	Configure a Service or App	lication
	Virtual Machines	•
	More Actions	+
	View	+
	Refresh	
	Help	





2. Choose Other Server.

🧱 High Availability W	Vizard	×
to Select Se	ervice or Application	
Before You Begin Select Service or Application Client Access Point Select Storage Configure High Availability Summary	Select the service or application that you want to configure for high availability: Image: Service Service Service (ISNS) Server Image: Server Service Service Service (ISNS) Server Image: Server Service Servic]



3. Define any application name (in this example we're using TheServer) and finalize the application creation.

🙀 High Availability Wizard 🛛 🔀					
Client Access Point					
Before You Begin	Type the name that clients will use when accessing this service or application:				
Select Service or Application	Name: TheServer				
Client Access Point	One or more DHCP IPv4 addresses were configured automatically. All networks were configured automatically.				
Select Storage					
Confirmation					
Configure High Availability					
Summary					
	More about how clients access a clustered service or application				
	< <u>P</u> revious <u>N</u> ext > Cancel				

It is not necessary to define storage or the IP address for the application in this wizard. This can be done later.





4. Highlight the newly created resource and ensure the IP address items has the status Offline. If it's not, check if the item has a valid IP address (open its Properties).

闂 Failover Cluster Manager		
Eile Action View Help		
🗢 🔿 🔰 🖬 🛛 🖬		
📲 Failover Cluster Manager	Alerts: 1 failed resource(s)	
🖃 🎼 TheCluster.bdados.com	Preferred Owners: <none></none>	
E Services and applications	Current Owner: CLUSTERNODE2	
TheServer		
E 📑 Nodes		
	Name Status	
CLUSTERNODE2	Server Name	
🖻 🍓 Networks	🖃 🔩 Name: TheServer 🛛 📀 Offline	
DISK	👔 📲 IP Address: Address on LAN 🛛 🐼 Failed	
Hearbeat		
👱 LAN		<u> </u>
	•	▶



- 5. After the configuration is done, right-click the TheServer resource and choose Bring this resource online. If everything is configured properly, the status of both items (TheServer and IP Address) will change to Online.
- 6. Make sure that both cluster nodes are configured to own the resource, as per the screenshots below.

響 Failover Cluster Manager					
File Action View Help					
📲 Failover Cluster Manager	Preferred Uwners: <none></none>				
🖃 🏭 TheCluster.bdados.com	Current Owner: CLUSTERNO	IDE2			
Services and applications					
TheServer					
	Name	Status			
	🗉 🐏 Name: TheServer	Duine this years was called			
	P Address: 10.43.1	Take this resource online			
🛐 Cluster Events		Take dits resource office			
_	Other Resources	Show the critical events for this resource			
	Therefore [™] Conversion	Show Dependency Report			
Therefore [™] Full-Text In		More Actions +			
	therefore Server Server	Delete			
		Properties			
Opens the properties dialog box for the current selection.					

Name: TheServer Properties
General Dependencies Policies Advanced Policies
Clear the check box if you do not want a node to host this resource or this clustered instance.
Possible Owners:
CLUSTERNODE1
Basic resource health check interval
Use standard time period for the resource type
○ Use this time period (mm:ss): 00:05 🚍
Thorough resource health check interval
Use standard time period for the resource type
C Use this time period (mm:ss):
Bun this resource in a separate Resource Monitor Choose this option if the associated resource type DLL needs to be debugged or is likely to conflict with other resource type DLLs.
OK Cancel Apply





- 6.1.5 Adding Therefore[™] services to the application
- 1. Right-click on the TheServer application. Expand Add a resource and choose 4 Generic Service.

🖥 Failover Clust	er Manager	
File Action Vi	ew Help	
🗢 🔿 🛛 🗖		
Railover Cluste	r Manager TheServer	F
E Service	es and applications	neServer
	Bring this service or application online Take this service or application offline Move this service or application to another node	
⊟ ∰ Netv	Manage shares and storage Add a shared folder	ERNODE1; CLUSTERNODE2 NODE2
📱 Clus –	Show the critical events for this application Add storage	Status
	Add a resource	1 - Client Access Point 2 - Generic Application
_	Show Dependency Report	4 - Generic Service
	View • • • • • • • • • • • • • • • • • • •	rvice 💿 Onlir n Service 💿 Onlir
-	Refresh Properties	naexing service 💿 Unlir
	Help	



2. Start by adding the Therefore[™] Server Service.

🔮 New Resource Wiz	zard	×
📑 Select Se	ervice	
Select Service Confirmation	Select the service you want to use from the list:	
Configure Generic	Name	Description 🔺
Service	Task Scheduler	Enables a user to configure and schedule autom
Summarv	TCP/IP NetBIOS Helper	Provides support for the NetBIOS over TCP/IP (
o unintery	Telephony	Provides Telephony API (TAPI) support for progr
	Therefore [™] Conversion Service	Provides image conversion services for the Ther
	Therefore™ Full-Text Indexing Service	Indexes Therefore™ documents for full-text sear
	Therefore™ Server Service	Performs the main operations for the Therefore™
	Therefore [™] Web Service	Establishes a communication channel between 📃
	Therefore [™] XML Web Service	Enables a connection between the Therefore(T
	Thread Ordering Server	Provides ordered execution for a group of thread
	TPM Base Services	Enables access to the Trusted Platform Module 🔳
		Next > Cancel





3. Configure the dependencies for the Therefore[™] Server Service. Go to Properties and configure the Therefore[™] Server Service to be dependent on the TheServer resource.

Advanced Policies					
	General	[Dependencies	,,	Policies
Spe be b	cify the resource prought online:	es that mus	t be brought on	line before th	nis resource can
	AND/OR	Resource	3		
•		Name: Tł	neServer		-
*	Click here to a	, dd a depen	dency		
				<u>I</u> nsert	Delete
	ma: ThaCan-a-			<u>I</u> nsert	<u>D</u> elete
Na	me: TheServer			<u>I</u> nsert	<u>D</u> elete
Nat	me: TheServer			Insert	Delete
Na	me: TheServer		How re	Insert	<u>D</u> elete



4. Add the remaining Therefore[™] services in the same manner and configure them to be dependent on the Therefore[™] Server Service.



5. Once done, your configuration should look similar to the screenshot below.



6. If configured properly, the Therefore[™] servuces startup type will be automatically change to Manual on both cluster nodes.

🧛 Therefore™ Conversion Service	Provides im	Manual
🧠 Therefore™ Full-Text Indexing Service	Indexes Th	Manual
🧛 Therefore™ Server Service	Performs t	Manual
🥋 Therefore™ Web Service	Establishes	Manual
🥋 Therefore™ XML Web Service	Enables a c	Manual

Screenshot from the Windows Services console.



6.1.6 Configuring client connections

Configure Therefore[™] clients to connect to the cluster name or IP address of the cluster.







6.2 Windows Server 2012 R2

- 6.2.1 Therefore[™] Server installation Node 1
- 1. Run the Therefore[™] Setup as usual. For more information, see the Installation Guide.
- 2. In the folder configuration dialogs of the Therefore[™] Configuration Wizard, it is recommended to put the Therefore[™] folders on the quorum disk or a network share.

Therefore™ Configuration	Wizard		_0×
Therefore™ Storage	Configuration		
Configure Therefore™ wo	orking directories.		
Welcome			
Activation			
Database	Directory for storing new Th	erefore™ documents:	
Storage	Buffer directory:	C:\ProgramData\Therefore\Buffer	Browse
Full-Text			
Security	Disastras for station to service		
Services	Cache directory:	C:\ProgramData\Therefore\Cache	Browse
Categories			
Transfer Folders			
Updates			
Finalize			
		Back Next	Finish Cancel

Onfiguration Wizar	d		_ 🗆 ×
Therefore™ Full-Text Con Configure Therefore™ Full-Text f	figuration folder and noise-words language.		
Welcome			
Activation			
Database	Enable full-text search for th	iis server	
Storage	Full-text catalog language:	English	
Full-Text	Therefore IM will use this direct	ton for swing the full text index.	
Security	Full-text catalog directory:	C:\ProgramData\Therefore\Fulltext Browse	
Services			
Categories			
Transfer Folders			
Updates			
Finalize			
		Back Next Finish	Cancel





The Preview folder can also be placed on the quorum disk or a network share. This can be configured under the advanced settings in the Therefore[™] Solution Designer.

ettings	2
General Database Cache	Permission Sets Server Logging
Web Server Settings XMI	L Web Service Advanced
<u>.</u>	
General	<u> </u>
Folders	
Security	
Preview	
Enable Previews	True
No Preview for Extensions	exe; dll
Preview Cache	C:\ProgramData\Therefore\Cache\Pre
Preview Cleanup Time	1000
Preview Service End Time	420
Preview Service Start Time	1080
Size of Preview-Thumbnails	256
Database	
± Cache	
+ Logfile	
XML Web Service	
+ SMTP	<u> </u>
Preview Cache Cache folder for preview images of docum	nent.
Display only changed settings	
	OK Cancel Help





Therefo

8	Server	Any name	
File Edit View Help	Server name: Computer name:	Therefore Server 2 CLUSTERNODE2	Name of second Therefore server
Server Add server Categories	Domain:	CONTOSO	Current domain
📄 💮 💋 Keyword Dictionaries	ОК	Cancel Help	Any name

4. Define security for the new server and distribute license points.





6.2.2 Therefore[™] Server installation - Node 2

1. Force failover by starting the cluster service on the second cluster node (if it's not running) and stopping the cluster service on the first cluster node.

电		Failover	Clust	er Manager		
File Action View	/ Help					
 Failover Cluster M ▲ Cluster.ad ▲ Roles ▲ Nodes ▲ Storage ④ Disks ④ Pools ● Networks ④ Cluster Event 	lanager os.net ents	Nodes (2) Search Name VIE1DEVCLNO		P Queries ▼ Status Pause Resume Remote Desktop Information Details Show Critical Events	Acti No	ons des Ado
	Start Clus	ter Service		More Actions		۲
	Stop Clus	ter Service			- 19 - 19 - 19	Info
	rvict					She

- 2. Run the Therefore[™] Setup as usual. In the licensing dialog of the Configuration Wizard, choose the option to load the Therefore[™] license from the Therefore[™] database.
- 3. In the <u>folder configuration dialogs</u> of the Therefore[™] Configuration Wizard, it is recommended to place the Therefore[™] folders on the quorum disk or a network share.





6.2.3 Configuring the Therefore[™] system for clustering

1. After Therefore[™] has been successfully installed on both cluster nodes, open the Solution Designer on any Therefore[™] Server and remove the second Therefore[™] Server.



2. Rename the first Therefore[™] Server.

8	Server Properties Leave unchanged
File Edit View Help	Server name: Therefore Server Cluster name Cluster name
Server	Domain: CONTOSO Site: CONTOSONODE1
Properties	OK Cancel Help Leave unchanged
Reporting Full-Text Search	



3. Add the cluster name to the registry on both cluster nodes.

Ť		Registry Editor		_ 🗆 🗙
<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>H</u> e	lp			
⊳	^	Name	Туре	Data
Policies		(Default)	REG_SZ	(value not set)
RegisteredApplicat	ic	腿 CacheLastAge	REG_DWORD	0x000005a0 (1440)
⊿ Interefore		ab ClusterName	REG_SZ	TheServer
		8 DBBrand	REG_DWORD	0x00000001 (1)
Info		ab DBName	REG SZ	Therefore
Installation	≡		REG DWORD	0x00000001 (1)
Server				
D - 🔐 Wow6432Node			Cluster name	
D - B SYSTEM	~			
< III :	•	<	III	>
Computer\HKEY_LOCAL_MACHINE	SOF	TWARE\Therefore\Serv	/er	



- 6.2.4 Adding the Therefore[™] Server Application to the cluster
- 1. Expand the cluster in the Failover Cluster Manger console, right-click on Roles and choose Configure Role...

电	
File Action V	iew Help
🗢 🄿 🖄 📰	?
I Failover Clust I I Failover Cluste I I I I I I I I I I I I I I I I I I I	er Manager r.ados.net Roles (0) Search
🗿 Node	Configure Role
b 📇 Storag I Netw	Virtual Machines >
関 Cluste	Create Empty Role
	View 🕨
	Refresh
	Help

2. Choose Other Server.

剱	High Availability Wizard			x
Select Ro	ble			
Before You Begin Select Role Client Access Point Select Storage Confirmation Configure High Availability Summary	Select the role that you want to configure for high availabilit Generic Service Hyper-V Replica Broker CSCSI Target Server SiSNS Server Message Queuing Cher Server Vitual Machine WINS Server	y:	Description: Provides a client access point and storage only. Add an application after completing the wizard.	
		Pre	vious <u>N</u> ext > Cancel	



3. Define an application name and finalize application creation.

80	High Availability Wizard	ĸ
Client Ac	cess Point	
Before You Begin Select Role Client Access Point Select Storage Confirmation Configure High Availability Summary	Type the name that clients will use when accessing this clustered role: Name: The Server The NetBIOS name is limited to 15 characters. One or more DHCP IPv4 addresses were configured automatically. The NetBIOS name is limited to 15 characters. One or more DHCP IPv4 addresses were configured automatically.	
	< Previous Next > Cancel	



4. Right-click on the TheServer item and select Properties.





5. Tick the cluster nodes that have been created for ThereforeTM and click OK.

TheServer Properties ×
General Failover
The Server
Name:
TheServer
Select the <u>preferred owners</u> for this clustered role. Use the buttons to list them in order from most preferred at the top to least preferred at the bottom.
✓ VIE1DEVCLNODE1 Up ✓ VIE1DEVCLNODE2 Down
Priority: Medium V
Status: Running
Node: VIE1DEVCLNODE1
OK Cancel Apply



6. If everything is configured properly, the status of the TheServer role will change to "Running".

驌	Failover C	luster Manager		-		x
Eile Action View Help						
📲 Failover Cluster Manager	Roles (1)			Actions		
⊿ Polec ▲ Polec	Search	🔎 Queries 🔻		Roles		<u>^</u>
Nodes	Name	Status	Туре	🧑 Configure	Role	
⊿ 📇 Storage	The Server	Running	Other	Virtual Ma	chine	▶ ≡
Disks				Create Em	pty R	
Networks				View		•
🔢 Cluster Events	< 111		>	Refresh		
	• TheServer	Preferred Owners	s: Any node	<table-cell> Help</table-cell>		
				TheServer		•
				24 Start Role		~



6.2.5 Adding Therefore[™] services to the application

1. Right-click on the TheServer role, then select Add Resource and Generic Service.







	New Resource	e Wizard	x
Select Se	ervice		
Select Service	Select the service you want to use from the lis	t:	
Configure Generic	Name	Description	^
Confirmation Configure Generic Service Summary	Task Scheduler TCP/IP NetBIOS Helper Telephony Themes Therefore ^{***} Conversion Service Therefore ^{***} Full-Text Indexing Service Therefore ^{***} Installer Service Therefore ^{***} Server Service Thread Ordering Server	Enables a user to configure and schedule auto Provides support for the NetBIOS over TCP/IP Provides Telephony API (TAPI) support for prog Provides user experience theme management. Provides image conversion services for the The Processes Therefore ^{***} documents for full-text s Updates Therefore ^{***} software. <u>Performs the main operations for the Therefore</u> Provides ordered execution for a group of threa	
		Next > Cancel	



3. To configure the dependencies for the Therefore™ Server Service, right-click and select Properties.





4. Configure the Therefore[™] Server Service to be dependent on the TheServer resource.

	Therefore [™] Server Service Properties								
Advanced Policies Registry Replication									
	General	Dependencies		Policies					
Spe be b	Specify the resources that must be brought online before this resource can be brought online:								
	AND/OR	Resource							
•		TheServer			~				
	Click here to ac	IP Address 10.1 Therefore "" Cor Therefore "" Full Therefore "" Inst The Server	I.1.0 hversion Service I-Text Indexing Se taller Service	ervice					
	OK Cancel Apply								

5. Add other Therefore[™] services in the same manner; configure them to be dependent on the Therefore[™] Server Service.

Therefore™ Conversion Service: do not configure any dependencies for this service.
 Do not add the Therefore™ Installer Service.



Advanced Policies		Registry Replication			
General		Depen	dencies	Policies	
Spe be b	cify the resource prought online:	es that must be br	ought online befo	ore this resource can	
	AND/OR	Resource			
•		Therefore™ Ser	ver Service		
*	Click here to a	dd a dependency	J		
			Inset	Delete	
			Insert	Delete	



6. Finally, the configuration should look similar to the screenshot below.



The Therefore[™] services startup type will be automatically changed to "Manual" on both cluster nodes:

Therefore™ Conversion Service	Provides im	Running	Manual
🧠 Therefore™ Full-Text Indexing Service	Processes T	Running	Manual
🤹 Therefore™ Installer Service	Updates Th		Manual
🍓 Therefore™ Server Service	Performs th	Running	Manual

Screenshot from the Windows Services console.

6.3 Windows Server 2016

The Therefore[™] Server installation process (on a failover cluster with two nodes) in Windows Server 2016 is the same as in <u>Windows Server 2012 R2</u>.