

SQL Server 2005 Mirroring

Suat ÜSTKAN 2008



0ve1 Yeni Nesil Bilişim Teknolojileri

New Database New Query Script Database as					
Tasks	Detach				
Reports Rename	Take Offl Bring Onli	ine			
Delete	Shrink		.		
Refresh	Back Up	a			
Properties	Restore		•	Database	_
	Mirror Launch D Ship Tran	atabase Mirroring Monitor		Files and Filegroups Transaction Log	
	Generate Import Da Export Da	scripts ata			
	Copy Dat	abase		_	

<u>1.Adım</u> Mirror Db' ye restore edilecek database' in yolu gösterilir.

lect a name	Posis Buch	
General		
Options	Restore options	
	Overwrite the existing database	
	Preserve the replication settings	
	Prompt before restoring each ba	ackup
	Restrict access to the restored	database
	Restore the database files as:	
	Original File Name	Restore As
	MIRRORTEST	C:\Program Files\Microsoft SQL Server\M
		C:\Program Files\Microsoft SOL Server\M
	MIRRORTEST_log	
onnection	MIRRORTEST_log Recovery state	
onnection Server: PROFKAN\MIRROR	MIRRORTEST_log Recovery state C Leave the database ready to us transaction logs cannot be resto	e by rolling back uncommitted transactions. Additional red.(RESTORE WITH RECOVERY)
onnection ierver: PROFKAN\MIRROR ionnection: a	MIRRORTEST_log Recovery state Leave the database ready to us transaction logs cannot be restored Leave the database non-operat transaction logs can be restored	e by rolling back uncommitted transactions. Additional red.(RESTORE WITH RECOVERY)
onnection Server: PROFKANSMIRROR Connection: a Y View connection properties	MIRRORTEST_log Recovery state C Leave the database ready to us transaction logs cannot be restored C Leave the database non-operat transaction logs can be restored C Leave the database in read-only actions in a standby file so that	e by rolling back uncommitted transactions. Additional red.(RESTORE WITH RECOVERY) ional, and do not roll back uncommitted transactions. Additional I.(RESTORE WITH NORECOVERY)
onnection Server: PROFKAN\MIRROR Connection: a View connection properties rogress	MIRRORTEST_log Recovery state C Leave the database ready to us transaction logs cannot be restored C Leave the database non-operat transaction logs can be restored C Leave the database in read-only actions in a standby file so that the	e by rolling back uncommitted transactions. Additional red.(RESTORE WITH RECOVERY) ional, and do not roll back uncommitted transactions. Additional I.(RESTORE WITH NORECOVERY) or mode. Undo uncommitted transactions, but save the undo ecovery effects can be reversed.(RESTORE WITH STANDBY
onnection Server: PROFKAN\MIRROR Connection: sa View connection properties rogress Ready	MIRRORTEST_log Recovery state C Leave the database ready to us transaction logs cannot be restored Leave the database non-operat transaction logs can be restored Leave the database in read-only actions in a standby file so that the Standby file:	e by rolling back uncommitted transactions. Additional red.(RESTORE WITH RECOVERY) ional, and do not roll back uncommitted transactions. Additional I.(RESTORE WITH NORECOVERY) or mode. Undo uncommitted transactions, but save the undo recovery effects can be reversed.(RESTORE WITH STANDBY

2.Adım

Database seçildikten sonra üzerinde herhangi bir şekilde değişim yapılmasını engellemek için, ve mirroring için gerekli şartlardan olan (RESTORE WITH NORECOVERY) seçeneği işaretlenir



3.Adım

Bu işlemden sonra restore tamamlandığı zaman db yukarıdaki gibi bir şekil alacaktır. Bu durumda artık db dışarıdan müdahalelere kapatılmıştır.

onnect * 🖳 🔳 🍸 🛃	 Server 0.0.3042 - cs) 	4 ×		
	s ots New Database			
E Server Objects	New Query			
H	Script Database as	•		
Description Servic Sol Server Agent	Tasks	•	Detach	
PROFKAN\MIRROR (S	Reports	•	Take Offline	
⊡ Intabases ⊕ Intabases ⊕ Intabases	Rename		Bring Online	
🕀 🧰 Database Sna	Delete		Shrink	•
	Refresh		Back Up	
E Server Objects E Beplication	Properties	_	Restore	•
E Management			Mirror	
			Launch Database Mirroring Monitor Ship Transaction Logs	
			Generate Scripts	
			Import Data	- 11
			Export Data	
			Copy Database	

<u>4.Adım</u> Mirror işlemine başlamak için ilk olarak kaynak teşkil edecek db üzerinde şekildeki gibi Mirror' a gelinir.

🖗 General	🖾 Script 👻 🚺 Help			
ar General ar Files ar Filegroups ar Options	Ensure that database.	security is configured for mirroring this	Configure Security	
Permissions	Server network	addresses		
Mirroring	Principal:	TCP://profkan.0ve1-tr.local:5022	Start Mirroring	
a mansaction Log Shipping	Mirror:		Pause	
	Witness:		Remove Mirroring	
	Note: Use fr TCP://svr5.	ully-qualified TCP addresses. For example: .corp.abc.com:5022	Failover	
	Operating mode	e		
	C High per the mirro C High saf	formance (asynchronous) - Commit changes at the r. atu utilizat automatic failance (aucologication) - Auco	principal and then transfer them I	
	principal	and mirror.	ys commit changes at both the	
Connection	principal C High saf Commit o automati	ey without automatic railover (synchronous) - Aiway and mirror. ety with automatic failover (synchronous) - Requires changes at both the principal and mirror if both are a ic failover to the mirror if the principal becomes unay	ys commt changes at both the s a witness server instance, wailable. The witness controls ailable.	
Connection Server: PRDFKAN\PRINCIPAL	principal C High saf Commit d automati	ey without automatic failover (synchronous) - Requires ety with automatic failover (synchronous) - Requires changes at both the principal and mirror if both are a ic failover to the mirror if the principal becomes unav	ys commt changes at both the s a witness server instance, ivailable, The witness controls vailable,	
Connection Server: PROFKAN\PRINCIPAL Connection: sa	principal C High saf Commit c automati Status:	ey without automatic failover (synchronous) - Required etw with automatic failover (synchronous) - Required sharages at both the principal and mirror if both are a ic failover to the mirror if the principal becomes unav	ys commit changes at both the s a witness server instance, wailable. The witness controls railable. Refresh	
Connection Server: PROFKAN\PRINCIPAL Connection: sa PP View connection properties	principal C High saf Commit automati Status:	ey without automatic raidover (synchronous) - Required and mirror. ety with automatic failover (synchronous) - Required changes at both the principal and mirror if both are a ic failover to the mirror if the principal becomes unav	ys commt changes at both the s a witness server instance, ivailable. The witness controls vailable. <u>Refresh</u>	
Connection Server: PROFKAN\PRINCIPAL Connection: sa I View connection properties Yrogress	principal C High saf Commit automati Status:	ey without automatic railover (synchronous) - Requirer ely with automatic failover (synchronous) - Requirer changes at both the principal and mirror if both are a ic failover to the mirror if the principal becomes unav	ys commt changes at both the s a witness server instance, rvailable. The witness controls railable. <u>Refresh</u>	
Connection Server: PROFKAN\PRINCIPAL Connection: sa Yiew connection properties togress Ready	principal C High saf Commit automati Status:	ey without automatic railover (synchronous) - Required and mirror. ety with automatic failover (synchronous) - Required shanges at both the principal and mirror if both are a ic failover to the mirror if the principal becomes unav	ys commit changes at both the s a witness server instance, wailable. The witness controls railable. <u>Refresh</u>	
Connection Server: PROFKAN\PRINCIPAL Connection: sa View connection properties Progress Ready	Status:	ey without automatic railover (synchronous) - Requires etw with automatic failover (synchronous) - Requires changes at both the principal and mirror if both are a ic failover to the mirror if the principal becomes unav	ys commt changes at both the s a witness server instance, ivailable. The witness controls vailable. Refresh	

<u>5.Adım</u> Wizard seçeneklerini kullanmak için "Configure Security…" butonu tıklanır.



Burada wizard' ın ilk ekranı karşımıza gelir ve kaynak database' in adını ve yapabilceklerinizi listeler. Next > butonu tıklanır ve devam edilir.

Configure Database Mirroring	Security Wizard	
Include Witness Server Specify whether to include a with	ness server in the security configuration.	3
To operate database mirroring in configure a witness server instar server instances and control the	n synchronous mode with automatic failover, nce to monitor the status of the principal and a failover.	you must 1 mirror
Do you want to configure securi	ity to include a witness server instance?	
C Yes		
No	t :	
Help Ka	ick Next > Finish >>	Cancel

<u>7.Adım</u> Mirroring' te en önemli adımlardan biridir. Eğer Witness (Şahit) bir db kullanacaksanız bu aşamada yes seçeneğini işaretlemelisiniz. Biz bu örneğimizi 2 db arasında yaptığımız için şahit db kullanmayacağız. Next > butonu tıklanır

Configur	e Database Mirroring Security Wizard	
Choose Choose	e Servers to Configure e where to save the security configuration.	2
Save	the security configuration on the following:	
I⊽	Principal server instance	
V	Mirror server instance	
Help	< Back Next > Finish >> Ca	incel

<u>8.Adım</u> Bu aşamada 2 db li bir yapı olacağını size göstermektedir.Next > butonu tıklanır.

Configure Database Mir	roring Secu	ity Wizard		_ 🗆 ×
Principal Server In: Specify information abou located.	stance t the server ins	tance where the	database was originally	2
Principal server instance:]			
PROFKAN\PRINCIPAL		Ŧ		
Listener port:	F E	ncrypt data sent	through this endpoint	
Primary_Endpoint_Mirro	ring		-	
NOTE: If the principa their endpoints mus	l, mirror or v t use differe	vitness are insl int ports.	tances on the same s	erver,
Help	< Back	Next>	Finish >> C	Cancel

<u>9.Adım</u> Principal Server otomatik olarak gelmektedir. Principal (Birincil- Kaynak) db yi temsil eder. Next > butonuna basarak ilerliyoruz.

Mirror Server	Instance			P
Specify information database will be l	on about the server instanc located.	e where the mir	ror copy of the	Ĩ
Mirror server instanc	ie:			
PROFKAN\MIRROR	8		Connect	
Endpoint name: NOTE: If the p their endpoin	rincipal, mirror or witn ts must use different p	ess are insta ports.	nces on the same	server,

Burada Mirror (Kopya - Hedef) database' imiz e bağlanmak için "Connect…" butonu tıklanır.

Connect to Serve	r	×
SQL Serv	Windows Ser Ver. 2005	rver System
Server type:	Database Engine	*
Server name:	PROFKAN\MIRROR	•
Authentication:	Windows Authentication	•
User name:	Windows Authentication SQL Server Authentication	25-22
Password:		
	Lener of the	

<u>Sql Server Authentication, Windows Authentication' mu olduğu seçilir.Connect Butonu</u> tıklanır.

Configure Database Mir	roring Security Wizard		
Mirror Server Insta Specify information about database will be located.	nce It the server instance where t	he mirror copy of the	2
Mirror server instance:			
PROFKAN\MIRROR		<u>C</u> onnect	
Listener port: 5023	🔽 Engrypt data se	ent through this endpoint	
Endpoint name:			
Mirroring			
NOTE: If the principa their endpoints mus	II, mirror or witness are i it use different ports.	nstances on the same	server,
Help	< <u>B</u> ack <u>N</u> ext >	<u> </u>	Cancel

<u>12.Adım</u> Bağlantı kurulduktan sonra Next butonuna tıklanır.

Configure Datat	ase Mirroring Se	curity Wizard		
Service Acco Specify the serv	unts vice accounts of the	server instances.		2
If the server instan accounts for SQL s use the same acco untrusted domains.	ces use different acc Server, enter the acc sunt, the accounts ar	counts in the same of counts below. Leave e non-domain accou	r trusted domain as the the textboxes empty i ints, or the accounts (eir service f all instances are in
Service accounts f Principal:	or the following insta	nces:		
MIRRORTEST				
Mirror:				
MIRRORTEST				
If the service acco and grant CONNEC	unts are different, the CT permissions on the	e wizard will create lo e endpoints for each	igins for the accounts account.	(if necessary)
Help	< Back	Next>	Finish >>	Lancel
		12 4 1		

<u>13.Adım</u> Hangi database'ler arasında Mirroring yapılacak ise Principal (Kaynak) ve Mirror (hedef) Dbname'ler yazılır.

coningure	Database Mirroring Security Wizard	2
Completo Verify the	e the Wizard e choices made in the wizard and click Finish.	B
Click Finis On the pri	h to perform the following actions:	
 Modify 	the following properties of the mirroring endpoint:	
•	Name: Primary_Endpoint_Mirroring	
•	Listener Port: 5022	
•	Encryption: Yes	
•	Role: All	
 On the min Modify 	ror server instance, PROFKAN\MIRROR the following properties of the mirroring endpoint:	
•	Name: Mirroring	
•	Listener Port: 5023	
•	Encryption: Yes	
•	Role: Partner	
8		
ttate		1 cmml 1

<u>14.Adım</u> Mirror işleminin gerçekleştirileceği databaselerin genel şeması gösterilir ve "Finish" butonu tıklandıktan sonra bir sonraki adıma geçilir.

C	nfiguring Endpoints Click Stop to interrupt the operation.		
0	Success	2 Total 2 Success	0 Error 0 Warning
eta	ails:		
	Action	Status	Message
0	Configuring endpoint on principal server(Success	
2	Configuring endpoint on mirror server(PR	Success	
		Stop	l Report

<u>15.Adım</u>

Kısa bir süre bekledikten sonra mirror işleminin tamamlandığına ait pencere gözükücektir. Bu ekranda uyarı alınması (warning) mirroring'in çalışmayacağı anlamına gelmez. Hata (Error) almadıktan sonra mirror işlemine devam edebilirsiniz.



<u>16.Adım</u>

Hazırlamış olduğunuz Mirroring i hemen başlatılabilir, veya bu işlemi daha sonraya erteleyebilirsiniz.

🔋 Database Properties - MIF	RORTEST				
elect a page	🖾 Script 👻 📑 Help				
ar General ar Files ar Filegroups ar Options	Ensure that database.	security is configured for mirroring this	Configure Security		
Permissions Extended Properties	Server network addresses				
Mirroring Transaction Log Shipping	Principal:	TCP://profkan.0ve1-tr.local:5022	Start Mirroring		
	Mirror:	TCP://profkan.0ve1-tr.local:5023	Pause		
	Witness:		Remove Mirroring		
	Note: Use ft TCP://svr5.	ully-qualified TCP addresses. For example: .corp.abc.com:5022	Failover		
	Operating mode	ə			
	C High performance (asynchronous) Commit changes at the principal and then transfer them to the mirror.				
	High safety without automatic failover (synchronous) - Always commit changes at both the principal and mirror.				
onnection	C High safety with automatic failover (synchronous) - Requires a witness server instance, Commit changes at both the principal and mirror if both are available. The witness controls automatic failover to the mirror if the principal becomes unavailable.				
Server: PROFKAN\PRINCIPAL					
Connection: sa	Status:	Synchronized: the databases are fully synchronized	Refresh		
View connection properties					
rogress					
Ready					

<u>17.Adım</u> Bir önceki adımda mirroring i başlattıysanız, bu ekranda Pause ve Start işlemlerini gerçekleştirebilirsiniz.



18.Adım

Mirroring sonucunda Database'lerimizin Object Explorer penceresindeki görüntüsü şekildeki gibi olacaktır. (InRecovery) başka bir kaynaktan sürekli recovery halinde olduğunu, yani mirror database olduğunu, Principal database' imizin ise (synchronized) halinde olduğunu daimi olarak başka bir Database ile haberleştiğini takip edebilirsiniz.

Bunlar haricinde, adım adım mirror işlemini izleme şansına sahipsiniz. Principal Db ye sağ tıklayıp, Task => Database Mirroring Monitör ile detaylı bir şekilde izleme olanağı bulabilirsiniz.