**What is database mirroring?**

Database mirroring is process having a redundant copy of a single [database](http://searchsqlserver.techtarget.com/definition/database) at another location to ensure continuous data availability in case of a disaster on the principal database.

Database mirroring ensures that one viable copy of a database will always remain [accessible](http://whatis.techtarget.com/definition/access) during disaster recovery or down time needed for the principal server

The **principal** server is the **source** server and the **mirror** is the **destination** server

There are two types of operation modes when using database mirroring:

**Synchronous operation mode:**

This is used when very real time accuracy is required; which means that the system must immediately copy every change in the principal's content to the mirror and vice-versa (this is referred to as a hot standby)

**Asynchronous operation mode:**

This is used when the content is not fully synchronized, and thus may result in some data loss (this is referred to as a warm standby)

**Advantages:**

* Relatively easy to set up
* Database mirroring is an automatic failover process
* All application connection can be redirected automatically with proper configuration
* There will not be data transfer latency (synchronous mode)

**Disadvantages:**

* Can only have one to one relationship with principal and mirror
* Cannot be used for reporting solution (mirror in restoring state)
* Mirroring supports only Full Recovery (not bulk or simple mode)

sql script for database mirroring

--1 primary

alter database mirror

set recovery full

go

--2 primary

backup database mirror

to disk = 'c:\s\full.bak'

go

--4 primary

backup log mirror

to disk = 'c:\s\tlog.trn'

go

--6 primary

create endpoint endpoint\_principal

state = started

as tcp (listener\_port = 5022)

for database\_mirroring (role = partner)

go

--9 primary

alter database mirror

set partner = 'tcp://server1:5022'

go

--3 mirror

USE [master]

RESTORE DATABASE [mirror]

FROM DISK = N'C:\d\full.bak'

WITH FILE = 1,

MOVE N'mirror'

TO N'C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA\mirror.mdf',

MOVE N'mirror\_log'

TO N'C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA\mirror\_log.ldf',

NORECOVERY,

NOUNLOAD,

STATS = 5

GO

--5 mirror

RESTORE LOG [mirror]

FROM DISK = N'C:\d\tlog.trn'

WITH FILE = 1,

NORECOVERY,

NOUNLOAD,

STATS = 10

GO

--7 mirror

create endpoint endpoint\_mirror

state = started

as tcp (listener\_port = 5023)

for database\_mirroring (role = partner)

go

--8 mirror

alter database mirror

set partner = 'tcp://server2:5023'

go

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