

Oscar Teeninga

OSZBD

Lab 2

1. Wykonanie skryptów z poprzednich laboratoriów

```
CREATE DATABASE sampleDBOscarTeeninga;

USE sampleDBOscarTeeninga;

CREATE TABLE sampleTab (
    id int PRIMARY KEY IDENTITY(1,1),
    val int NOT NULL
);

IF NOT EXISTS (SELECT * FROM sampleTab WHERE val = 30)
    INSERT INTO sampleTab (val)
    VALUES (30);

IF NOT EXISTS (SELECT * FROM sampleTab WHERE val = 8)
    INSERT INTO sampleTab (val)
    VALUES (8);

IF NOT EXISTS (SELECT * FROM sampleTab WHERE val = 1998)
    INSERT INTO sampleTab (val)
    VALUES (1998);

IF NOT EXISTS (SELECT * FROM sampleTab WHERE val = 44)
    INSERT INTO sampleTab (val)
    VALUES (44);

IF NOT EXISTS (SELECT * FROM sampleTab WHERE val = 2115)
    INSERT INTO sampleTab (val)
    VALUES (2115);

ALTER DATABASE sampleDBOscarTeeninga SET RECOVERY FULL;

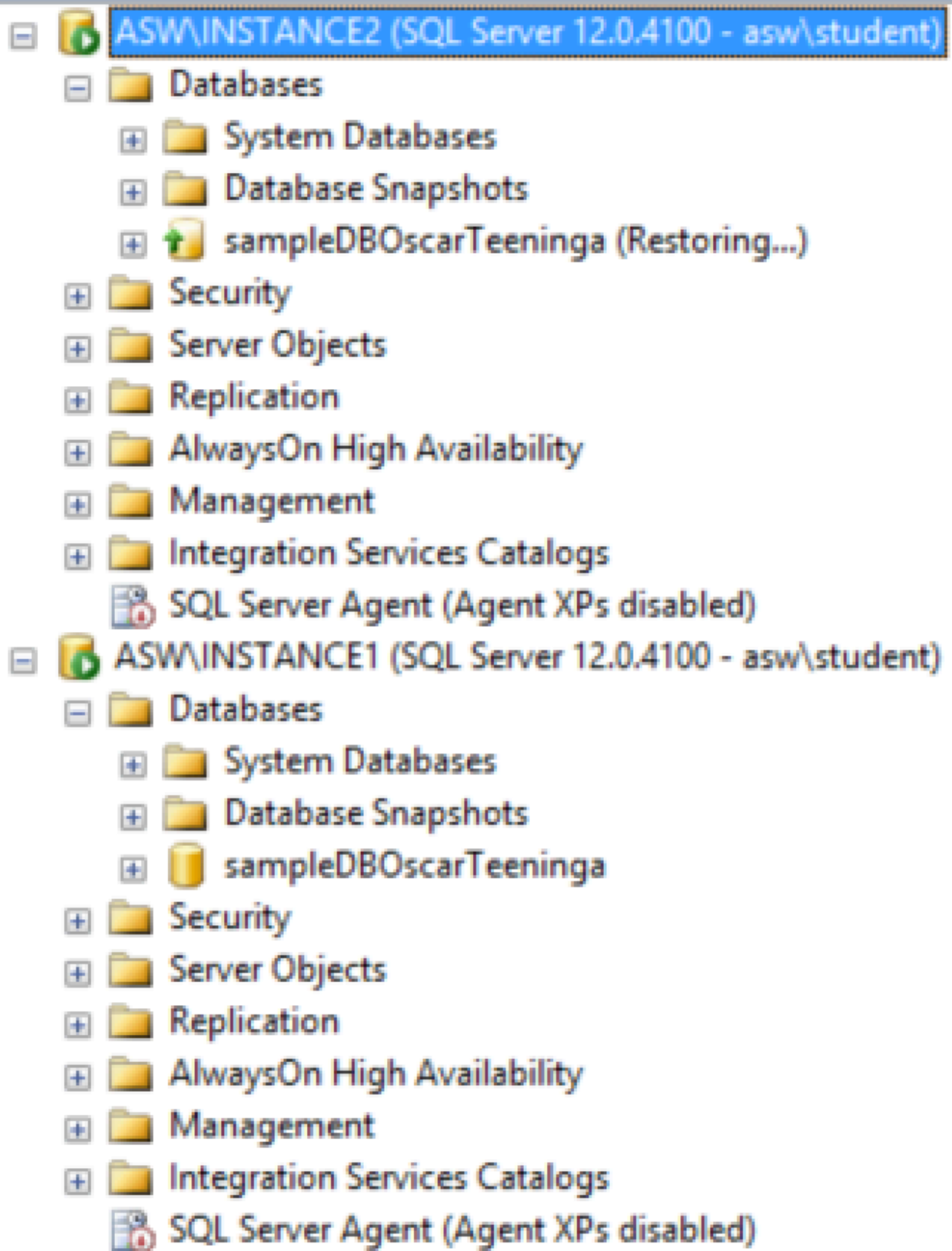
BACKUP DATABASE sampleDBOscarTeeninga to DISK = 'C:\bd3\sampleDBOscarTeeninga.bak';
BACKUP LOG sampleDBOscarTeeninga to DISK = 'C:\bd3\sampleDBOscarTeeningaLog.bak';

-- Drugi serwer
USE master;

RESTORE FILELISTONLY
FROM DISK = 'C:\bd3\sampleDBOscarTeeninga.bak'
GO

RESTORE DATABASE sampleDBOscarTeeninga
FROM DISK = 'C:\bd3\sampleDBOscarTeeninga.bak'
WITH NORECOVERY, REPLACE,
MOVE 'sampleDBOscarTeeninga'
TO 'C:\Program Files\Instance2\MSSQL12.INSTANCE2\MSSQL\DATA\sampleDBOscarTeeninga',
MOVE 'sampleDBOscarTeeninga_log'
TO 'C:\Program Files\Instance2\MSSQL12.INSTANCE2\MSSQL\DATA\sampleDBOscarTeeninga_log'

RESTORE LOG sampleDBOscarTeeninga
FROM DISK = 'C:\bd3\sampleDBOscarTeeningaLog.bak'
WITH NORECOVERY
```



2. Stworzyłem endpoint Endpoint_MirroringOscarTeeninga i sprawdziłem jego stan.

```
IF EXISTS ( SELECT * FROM sys.tcp_endpoints WHERE name = 'Endpoint_MirroringOscarTeeninga')
DROP ENDPOINT Endpoint_MirroringOscarTeeninga;
CREATE ENDPOINT Endpoint_MirroringOscarTeeninga
STATE = STARTED
AS TCP (LISTENER_PORT = 7023)
FOR DATABASE_MIRRORING
(
    ROLE = PARTNER
)
```

```
SELECT name, protocol_desc, type_desc, state_desc FROM sys.database_mirroring_endpoints
```

	name	protocol_desc	type_desc	state_desc
1	Endpoint_MirroringOscarTeeninga	TCP	DATABASE_MIRRORING	STARTED

Proto	Local Address	Foreign Address	State
TCP	0.0.0.0:135	asw:0	LISTENING
TCP	0.0.0.0:445	asw:0	LISTENING
TCP	0.0.0.0:1025	asw:0	LISTENING
TCP	0.0.0.0:1026	asw:0	LISTENING
TCP	0.0.0.0:1027	asw:0	LISTENING
TCP	0.0.0.0:1028	asw:0	LISTENING
TCP	0.0.0.0:1033	asw:0	LISTENING
TCP	0.0.0.0:1177	asw:0	LISTENING
TCP	0.0.0.0:1181	asw:0	LISTENING
TCP	0.0.0.0:1184	asw:0	LISTENING
TCP	0.0.0.0:7023	asw:0	LISTENING
TCP	127.0.0.1:1178	asw:0	LISTENING
TCP	127.0.0.1:1182	asw:0	LISTENING
TCP	127.0.0.1:1185	asw:0	LISTENING
TCP	127.0.0.1:47873	asw:0	LISTENING
TCP	172.16.116.2:139	asw:0	LISTENING
TCP	[::]:135	asw:0	LISTENING
TCP	[::]:445	asw:0	LISTENING
TCP	[::]:1025	asw:0	LISTENING
TCP	[::]:1026	asw:0	LISTENING
TCP	[::]:1027	asw:0	LISTENING
TCP	[::]:1028	asw:0	LISTENING
TCP	[::]:1033	asw:0	LISTENING
TCP	[::]:1177	asw:0	LISTENING
TCP	[::]:1181	asw:0	LISTENING
TCP	[::]:1184	asw:0	LISTENING
TCP	[::]:7023	asw:0	LISTENING
TCP	[::1]:1178	asw:0	LISTENING
TCP	[::1]:1182	asw:0	LISTENING
TCP	[::1]:1185	asw:0	LISTENING
UDP	0.0.0.0:68	*:*	
UDP	0.0.0.0:1434	*:*	
UDP	0.0.0.0:5355	*:*	
UDP	127.0.0.1:1900	*:*	
UDP	127.0.0.1:51179	*:*	
UDP	172.16.116.2:137	*:*	
UDP	172.16.116.2:138	*:*	
UDP	172.16.116.2:1900	*:*	
UDP	[::]:1434	*:*	
UDP	[::]:5355	*:*	
UDP	[::1]:1900	*:*	
UDP	[::1]:51178	*:*	
UDP	[fe80::942d:c23a:a33d:2757%12]:546	*:*	
UDP	[fe80::942d:c23a:a33d:2757%12]:1900	*:*	

3. Stworzyłem endpoint Endpoint_PrincipalOscarTeeninga i sprawdziłem jego stan.

```
IF EXISTS ( SELECT * FROM sys.tcp_endpoints WHERE name = 'Endpoint_PrincipalOscarTeeninga')
DROP ENDPOINT Endpoint_PrincipalOscarTeeninga;
CREATE ENDPOINT Endpoint_PrincipalOscarTeeninga
STATE = STARTED
AS TCP (LISTENER_PORT = 7022)
FOR DATABASE_MIRRORING
(
    ROLE = PARTNER
)
```

```
SELECT name, protocol_desc, type_desc, state_desc FROM sys.database_mirroring_endpoints
```

	name	protocol_desc	type_desc	state_desc
1	Endpoint_PrincipalOscarTeeninga	TCP	DATABASE_MIRRORING	STARTED

```
Proto Local Address Foreign Address State
TCP 0.0.0.0:135 asw:0 LISTENING
TCP 0.0.0.0:445 asw:0 LISTENING
TCP 0.0.0.0:1025 asw:0 LISTENING
TCP 0.0.0.0:1026 asw:0 LISTENING
TCP 0.0.0.0:1027 asw:0 LISTENING
TCP 0.0.0.0:1028 asw:0 LISTENING
TCP 0.0.0.0:1033 asw:0 LISTENING
TCP 0.0.0.0:1177 asw:0 LISTENING
TCP 0.0.0.0:1181 asw:0 LISTENING
TCP 0.0.0.0:1184 asw:0 LISTENING
TCP 0.0.0.0:7022 asw:0 LISTENING
TCP 0.0.0.0:7023 asw:0 LISTENING
TCP 127.0.0.1:1178 asw:0 LISTENING
TCP 127.0.0.1:1182 asw:0 LISTENING
TCP 127.0.0.1:1185 asw:0 LISTENING
TCP 127.0.0.1:47873 asw:0 LISTENING
TCP 172.16.116.2:139 asw:0 LISTENING
TCP [::]:135 asw:0 LISTENING
TCP [::]:445 asw:0 LISTENING
TCP [::]:1025 asw:0 LISTENING
TCP [::]:1026 asw:0 LISTENING
TCP [::]:1027 asw:0 LISTENING
TCP [::]:1028 asw:0 LISTENING
TCP [::]:1033 asw:0 LISTENING
TCP [::]:1177 asw:0 LISTENING
TCP [::]:1181 asw:0 LISTENING
TCP [::]:1184 asw:0 LISTENING
TCP [::]:7022 asw:0 LISTENING
TCP [::]:7023 asw:0 LISTENING
TCP [::1]:1178 asw:0 LISTENING
TCP [::1]:1182 asw:0 LISTENING
TCP [::1]:1185 asw:0 LISTENING
UDP 0.0.0.0:68 *: *
UDP 0.0.0.0:1434 *: *
UDP 0.0.0.0:5355 *: *
UDP 127.0.0.1:1900 *: *
UDP 127.0.0.1:51179 *: *
UDP 172.16.116.2:137 *: *
UDP 172.16.116.2:138 *: *
UDP 172.16.116.2:1900 *: *
UDP [::]:1434 *: *
UDP [::]:5355 *: *
UDP [::1]:1900 *: *
UDP [::1]:51178 *: *
UDP [fe80::942d:c23a:a33d:2757%12]:546 *: *
UDP [fe80::942d:c23a:a33d:2757%12]:1900 *: *
```

4. Uruchomienie mirroringu na instancji mirrora (INSTANCE2).


```
ALTER DATABASE sampleDBOscarTeeninga SET PARTNER OFF;  
GO  
ALTER DATABASE sampleDBOscarTeeninga SET PARTNER = 'TCP://127.0.0.1:7022';  
GO
```

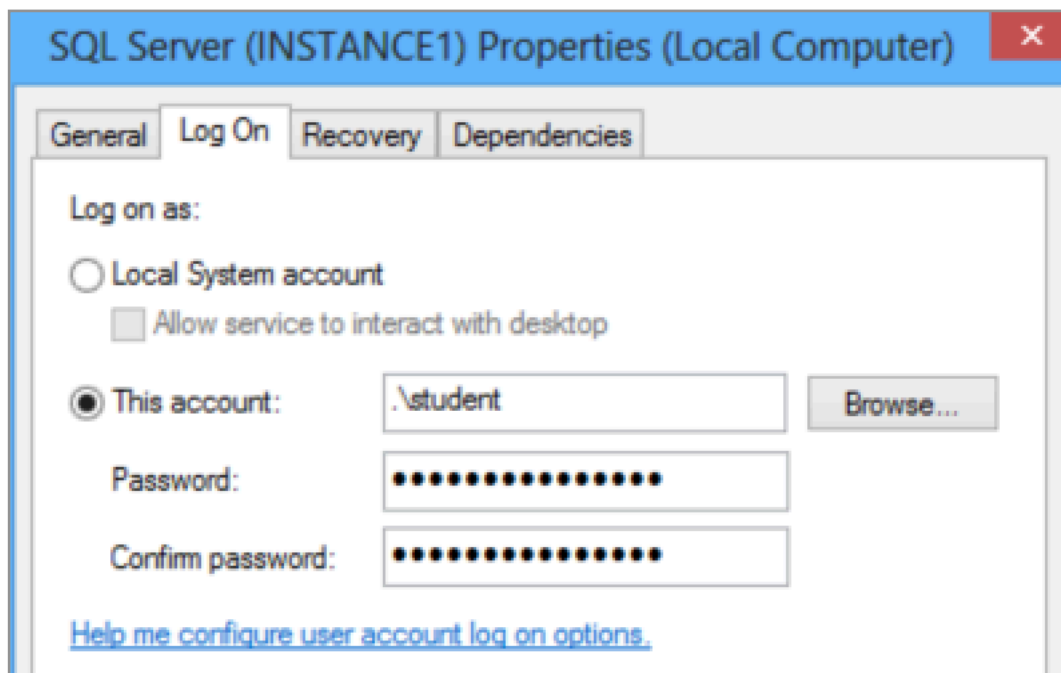
5. Uruchomienie mirroringu na instacji principal (INSTANCE1).

```
ALTER DATABASE sampleDBOscarTeeninga SET PARTNER OFF;  
GO  
ALTER DATABASE sampleDBOscarTeeninga SET PARTNER = 'TCP://127.0.0.1:7023';  
GO
```

6. Rozwiązanie problemów z połączeniem

Wchodziłem poprzez services.msc, ponieważ korzystanie z SQL Server Configuration Manager nie pomagało.

	SQL Server (INSTANCE1)	Provides sto...	Running	Automatic	.\student
	SQL Server (INSTANCE2)	Provides sto...	Running	Automatic	.\student



SQL Server (INSTANCE1) Properties (Local Computer)

General Log On Recovery Dependencies

Log on as:

☐ Local System account
☐ Allow service to interact with desktop


☒ This account:

Password:

Confirm password:

[Help me configure user account log on options.](#)

7. Sprawdzenie statusu mirrorowania i stworzenie odpowiednich zapytań SELECT

Operating mode	Transaction safety	Witness state
High-performance mode	OFF	NULL (no witness)**
High-safety mode without automatic failover 	FULL	NULL (no witness)
High-safety mode with automatic failover*	FULL	CONNECTED

```

SELECT SYSDB.name,
CASE
WHEN EXISTS(SELECT * FROM sys.database_mirroring_endpoints WHERE name = 'Endpoint_PrincipalOscarTeeninga' AND state_desc = 'STARTED') THEN 'Mirroring is On'
ELSE 'Mirroring is Off'
END as IsMirrorOn,
SYSMIR.mirroring_state_desc,
CASE
WHEN SYSMIR.mirroring_witness_state_desc = 'UNKNOWN' AND SYSMIR.mirroring_safety_level_desc = 'FULL' THEN 'High Safety'
ELSE 'Unkown safety'
END as MirrorSafety,
SYSMIR.mirroring_role_desc,
SYSMIR.mirroring_partner_instance
FROM sys.database_mirroring as SYSMIR
INNER JOIN sys.databases AS SYSDB ON SYSMIR.database_id = SYSDB.database_id
WHERE SYSMIR.database_id = 5;
GO
T

```

	name	IsMirrorOn	mirroring_state_desc	MirrorSafety	mirroring_role_desc	mirroring_partner_instance
1	sampleDBOscarTeeninga	Mirroring is On	SYNCHRONIZED	High Safety	PRINCIPAL	ASW\INSTANCE2

```

SELECT SYSDB.name,
CASE
WHEN EXISTS(SELECT * FROM sys.database_mirroring_endpoints WHERE name = 'Endpoint_MirroringOscarTeeninga' AND state_desc = 'STARTED') THEN 'Mirroring is On'
ELSE 'Mirroring is Off'
END as IsMirrorOn,
SYSMIR.mirroring_state_desc,
CASE
WHEN SYSMIR.mirroring_witness_state_desc = 'UNKNOWN' AND SYSMIR.mirroring_safety_level_desc = 'FULL' THEN 'High Safety'
ELSE 'Unkown safety'
END as MirrorSafety,
SYSMIR.mirroring_role_desc,
SYSMIR.mirroring_partner_instance
FROM sys.database_mirroring as SYSMIR
INNER JOIN sys.databases AS SYSDB ON SYSMIR.database_id = SYSDB.database_id
WHERE SYSMIR.database_id = 5;
GO

```

	name	IsMirrorOn	mirroring_state_desc	MirrorSafety	mirroring_role_desc	mirroring_partner_instance
1	sampleDBOscarTeeninga	Mirroring is On	SYNCHRONIZED	High Safety	MIRROR	ASW\INSTANCE1

