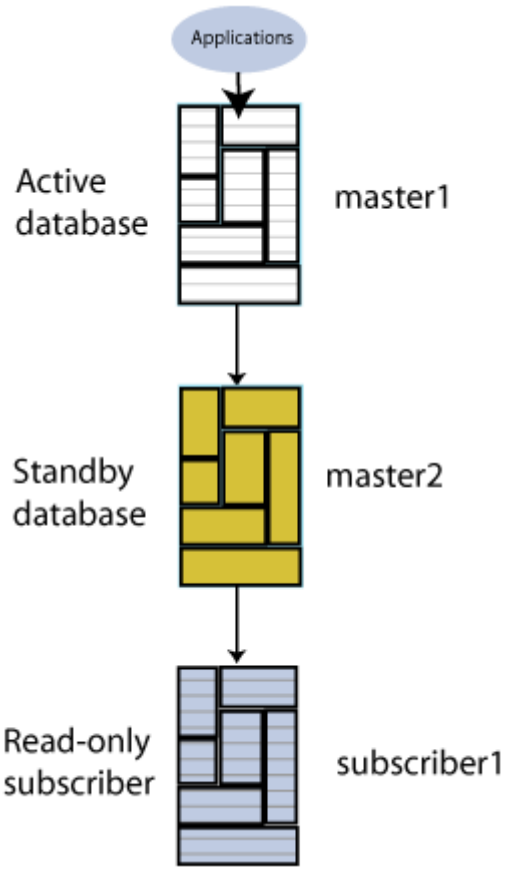
Configuring an active standby pair with one subscriber

how to create an active standby pair with one subscriber. The active database is `master1`. The standby database is `master2`. The subscriber database is`subscriber1`. To keep the example simple, all databases reside on the same computer, `xifenfei`.

Figure 2-1 shows this configuration.

Figure 2-1 Active standby pair with one subscriber



Description of "Figure 2-1 Active standby pair with one subscriber"

Step 1: Create the DSNs for the master and the subscriber databases

Create DSNs named `master1`, `master2` and `subscriber1` as described in "Managing TimesTen Databases" in *Oracle TimesTen In-Memory Database Operations Guide*.

On UNIX systems, use a text editor to create the following `odbc.ini` file:

```
[master1]
DRIVER=install_dir/lib/libtten.so
DataStore=/tmp/master1
DatabaseCharacterSet=AL32UTF8
ConnectionCharacterSet=AL32UTF8
[master2]
DRIVER=install_dir/lib/libtten.so
DataStore=/tmp/master2
DatabaseCharacterSet=AL32UTF8
ConnectionCharacterSet=AL32UTF8
[subscriber1]
DRIVER=install_dir/lib/libtten.so
DataStore=/tmp/subscriber1
DatabaseCharacterSet=AL32UTF8
ConnectionCharacterSet=AL32UTF8
```

On Windows, use the ODBC Administrator to set the same connection attributes. Use defaults for all other settings.

Step 2: Create a table in one of the master databases

Use the `ttIsql` utility to connect to the `master1` database:

```
% ttIsql master1

Copyright (c) 1996-2011, Oracle.  All rights reserved.
Type ? or "help" for help, type "exit" to quit ttIsql.

connect "DSN=master1";
Connection successful: DSN=master1;UID=terry;DataStore=/tmp/master1;
DatabaseCharacterSet=AL32UTF8;ConnectionCharacterSet=AL32UTF8;TypeMode=0;
(Default setting AutoCommit=1)
Command>
```

Create a table called `tab` with columns `a` and `b`:

```
Command> CREATE TABLE tab (a NUMBER NOT NULL,
      > b CHAR(18),
      > PRIMARY KEY (a));
```

Step 3: Define the active standby pair

Define the active standby pair on `master1`:

```
Command> CREATE ACTIVE STANDBY PAIR master1, master2
      > SUBSCRIBER subscriber1;
```

For more information about defining an active standby pair, see Chapter 3, "Defining an Active Standby Pair Replication Scheme".

Step 4: Start the replication agent on a master database

Start the replication agent on `master1`:

```
Command> CALL ttRepStart;
```

Step 5: Set the state of a master database to 'ACTIVE'

The state of a new database in an active standby pair is `'IDLE'` until the active database has been set.

Use the `ttRepStateSet` built-in procedure to designate `master1` as the active database:

```
Command> CALL ttRepStateSet('ACTIVE');
```

Verify the state of `master1`:

```
Command> CALL ttRepStateGet;
< ACTIVE, NO GRID >
1 row found.
```

Step 6. Create a user on the active database

Create a user `terry` with a password of `terry` and grant `terry` the `ADMIN` privilege. Creating a user with the `ADMIN` privilege is required by Access Control for the next step.

```
Command> CREATE USER terry IDENTIFIED BY terry;
User created.
Command> GRANT admin TO terry;
```

Step 7: Duplicate the active database to the standby database

Exit `ttIsql` and use the `ttRepAdmin` utility with the `-duplicate` option to duplicate the active database to the standby database. If you are using two different hosts, enter the`ttRepAdmin` command from the target host.

```
% ttRepAdmin -duplicate -from master1 -host server1 -uid terry -pwd terry
"dsn=master2"
```

Step 8: Start the replication agent on the standby database

Use `ttIsql` to connect to `master2` and start the replication agent:

```
% ttIsql master2
Copyright (c) 1996-2011, Oracle.  All rights reserved.
Type ? or "help" for help, type "exit" to quit ttIsql.

connect "DSN=master2";
Connection successful: DSN=master2;UID=terry;DataStore=/tmp/master2;
DatabaseCharacterSet=AL32UTF8;ConnectionCharacterSet=AL32UTF8;TypeMode=0;
(Default setting AutoCommit=1)
Command> CALL ttRepStart;
```

Starting the replication agent for the standby database automatically sets its state to `'STANDBY'`. Verify the state of `master2`:

```
Command> CALL ttRepStateGet;
< STANDBY, NO GRID >
1 row found.
```

Step 9. Duplicate the standby database to the subscriber

Use the `ttRepAdmin` utility to duplicate the standby database to the subscriber database:

```
% ttRepAdmin -duplicate -from master2 -host server1 -uid terry -pwd terry
"dsn=subscriber1"
```

Step 10: Start the replication agent on the subscriber

Use `ttIsql` to connect to `subscriber1` and start the replication agent. Verify the state of `subscriber1`.

```
% ttIsql subscriber1

Copyright (c) 1996-2011, Oracle.  All rights reserved.
Type ? or "help" for help, type "exit" to quit ttIsql.

connect "DSN=subscriber1";
Connection successful: DSN=subscriber1;UID=terry;DataStore=/stmp/subscriber1;
DatabaseCharacterSet=AL32UTF8;ConnectionCharacterSet=AL32UTF8;TypeMode=0;
(Default setting AutoCommit=1)
Command> CALL ttRepStart;
Command> call ttRepStateGet;
< IDLE, NO GRID >
1 row found.
```

Step 11: Insert data into the table on the active database

Insert a row into the `tab` table on `master1`.

```
Command> INSERT INTO tab VALUES (1,'Hello');
1 row inserted.
Command> SELECT * FROM tab;
< 1, Hello            >
1 row found.
```

Verify that the insert is replicated to `master2` and `subscriber1`.

```
Command> SELECT * FROM tab;
< 1, Hello            >
1 row found.
```