MS SQL Server Always On Support with Control-M/Enterprise Manager (V9.FP3)

Starting from V9.FP3, EM Server supports AlwaysOn on both single-subnet as well as multi-subnet SQL Server clusters.

EM Server V9.FP3 contents related to Always On support

- A new utility "ALWAYS_ON_CONFIG" will help the users prepare for AlwaysOn.
- EM Server migration will not be supported when using AlwaysOn. It will have to be run on a database that has been temporarily taken out of its Availability Group.
- OneInstall is out of the scope of AlwaysOn.
- RebuildDB will not be supported in AlwaysOn. User will be required to take the database temporarily out of its Availability Group.
- Restore database will not be supported in AlwaysOn. User will be required to take the database temporarily out of its Availability Group.

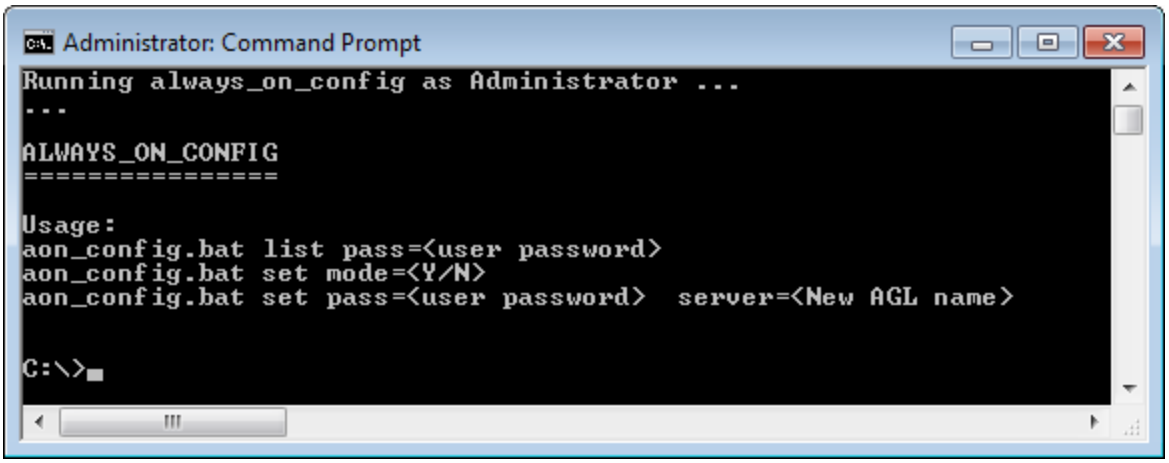
EM V9.FP3 PAC for AlwaysOn

- Windows Server 2012R2 and above (6.3).
- MS SQL Client version 2014 and above.

Change in DBUtils of EM FP3

- DBUREbuild is not supported on AlwaysOn environment.
- DBUColdRestore is not supported on AlwaysOn environment.

- **A new utility <u>always_on_config</u> will allow users to:**
    - **Turn AlwaysON on or off**
    - **Change the DB Server name to support a definition of a new Availability Group Listener by the site DBA.**


Administrator: Command Prompt
Running always_on_config as Administrator ...
...
ALWAYS_ON_CONFIG
Usage:
aon_config.bat list pass=<user password>
aon_config.bat set mode=<Y/N>
aon_config.bat set pass=<user password> server=<New AGL name>
C:\>

Installation flow for an MS AON

1. A user is installing V9 GA on the current Primary node of an Always On DB. (the database, for now, is a regular standalone database).

2. The user now installs FP3.

3. The user does any migration that is required.

4. The user Shuts down EM Server.

5. The user asks the site DBA to load the standalone database into Availability Group.

6. User is asking the site DBA to grant "VIEW SERVER STATE" to the DB login used.

7. The user activates the DBUtils **alwayson_config**
    1. To change ALWAYS_ON in the DBU_params.dat file.
       always_on_config set mode=Y

    2. always_on_config set pass=<ctmpaswd> server=<NEWAGL>
        a. DBU_params.dat
        b. All .ini files listed below.
        c. All HA tables listed below.

Now the user starts EM and is working in full AON mode.

HA note: When installing the secondary EM Server, the above two set of commands should also be executed after installation.

Turning off ALWAYS_ON

8. User is asking DBA to take his database off the Availability Group
9. Shuts down EM Server
10. User activates always_on_config and executes the following commands:
    3. always_on_config set mode=N
    4. always_on_config set pass=<ctmpaswd> server=<Physical server>

The DBUTILS always_on_config utility

The utility is working in command line mode only. It updates the mode as well as DB Server name in all the required locations.

Command line mode syntax

Always_on_config help
Always_on_config status pass=<DB password>
Always_on_config set pass=<DB Password> {mode=y/n } { dbname=<servername>}

example: alwayson_config status

Warns if no "VIEW SRVER STATE" privilege.
Product is {EM / Control-M} Server
AlwaysOn status is Y/N
DB Server name is <db server name>
The database <is>/<is not> is part of the Availability Group <AG name>
{The db_server_name is a virtual name, currently connected to <current active db server>}
(Warning printed if no "VIEW SERVER STATE" privilege assigned to the db login.

Mode field handling

- Changes the value of ALWAYS_ON in the file "DBU_params.dat" to Y/N.

DBA section – How Site DBA loads the installed database into the AG

1. Change all databases involved to Recovery FULL
2. Apply Full backup to all databases
3. Create SQL Server logins on the Read-Only Replicas
    a. These logins should match the login built during the installation.
4. These logins should have the same SID as the one created on the Primary replica. This requirement is not specific to CTM or EM Server, but is known as a general good practice for an Always On DBA.
    a. The login (example 'emuser') should has the same SID on all replicas
    b. The site DBA may want to use the `'sp_help_revlogin'` stored procedure That can be downloaded from the MSDN support site, in order to properly create the right logins.
    c. After login creation, the site DBA will have to run the command sp_changedbowner @loginame = 'emuser', (See step #9).
    d. After the above activities all logins are physically identical on all the replicas.
5. Create a new AG
    a. Either one AG for both products
    b. Or one AG for every product
6. Go to the Primary and add the databases to the AG.
7.
8. Decide whether AGL will be used
    a. If yes, verify AGL responding
9. Failover the Cluster to every Secondary Node, and attach the Active Replica to its owning login. (See step #4)
10. Failback to the Original Primary
11. Test connectivity