How to check if the TDE datafiles are encrypted or unencrypted (Doc ID 2544479.1)

In this Document

APPLIES TO:

Advanced Networking Option - Version 11.2.0.4 and later
Information in this document applies to any platform.

GOAL

To check if TDE datafiles are encrypted, use DBVERIFY to confirm used blocks are encrypted.

SOLUTION

Because the datafiles are encrypted at the OS level, use DBVERIFY to confirm used blocks are encrypted. This is shown below by example.

Non-Encrypted Datafile:

```
$ dbv file=<directory>/xxxx.dbf USERID=XXXXX/<Password>
DBVERIFY: Release 11.2.0.4.0 - Production on Tue May 21 01:08:13 2019
Copyright (c) 1982, 2011, Oracle and/or its affiliates.  All rights reserved.
DBVERIFY - Verification starting : FILE = <directory>/xxxx.dbf
DBVERIFY - Verification complete
Total Pages Examined         : 640
Total Pages Processed (Data) : 26            ==============> Unencrypted Data
Total Pages Failing   (Data) : 0
Total Pages Processed (Index): 2             ==============> Unencrypted Index
Total Pages Failing   (Index): 0
Total Pages Processed (Other): 591
Total Pages Processed (Seg)  : 8
Total Pages Failing   (Seg)  : 0
Total Pages Empty            : 13
Total Pages Marked Corrupt   : 0
Total Pages Influx           : 0
Total Pages Encrypted        : 0             ============> Pages Encrypted are Null
Highest block SCN            : 7877588 (0.7877588)
```

Converting the datafile with Offline Encryption in 11gR2:

```
SQL>  alter database datafile '<directory>/xxxx.dbf' encrypt;
Database altered.
```

Checking with DBVerify (dbv) utility to confirm if the datafile is now encrypted:

```
$dbv file=<directory>/xxxx.dbf USERID=XXXXX/<Password>
DBVERIFY: Release 11.2.0.4.0 - Production on Tue May 21 01:15:07 2019
Copyright (c) 1982, 2011, Oracle and/or its affiliates.  All rights reserved.
DBVERIFY - Verification starting : FILE = <directory>/xxxx.dbf
DBVERIFY - Verification complete
Total Pages Examined          : 640
Total Pages Processed (Data) : 0                    ==============> No Unencrypted Data
Total Pages Failing   (Data) : 0
Total Pages Processed (Index): 0                    ==============> No Unencrypted Index
Total Pages Failing   (Index): 0
Total Pages Processed (Other): 591
Total Pages Processed (Seg)  : 8
Total Pages Failing   (Seg)  : 0
Total Pages Empty             : 13
Total Pages Marked Corrupt   : 0
Total Pages Influx            : 0
Total Pages Encrypted        : 28                   ==============> Encrypted Data (Includes Data
and Index)
Highest block SCN            : 7877587 (0.7877587)
```

In the DBVerify output, any pages marked as 'Data' or 'Index' are not encrypted. Pages labeled as 'Other' are not Data or Index pages and do not need to be encrypted, any value for 'Other' can be ignored.

All encrypted pages whether Data or Index will be grouped together as 'Encrypted'.

REFERENCES

NOTE:23315889.8 - Bug 23315889 - New Datafile is not Encrypted After Offline Tablespace Encryption with compatibility of 11.2
https://www.oracle.com/technetwork/database/availability/tde-conversion-dg-3045460.pdf

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