Using the Exchange tools ISINTEG and ESEUTIL to ensure the health of your information store

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Abstract

In this article I will give you some information how to use the Exchange tools ISINTEG and ESEUTIL. With the help of ESEUTIl you can defragment your Exchange information store offline, check the integrity of the store and repair the information store in case of emergency.
ISINTEG is used to to some tests on the information stores and to fix some errors.

Let's begin

Before we start using ESEUTIL and ISINTEG ensure the following:

? Make a backup of your Exchange databases even if you think the files are damaged and lost.
? Use ISINTEG and ESEUTIL with some understanding about what these tools really do.
? Ensure that you have done all other tests before you use ESEUTIL and ISINTEG.
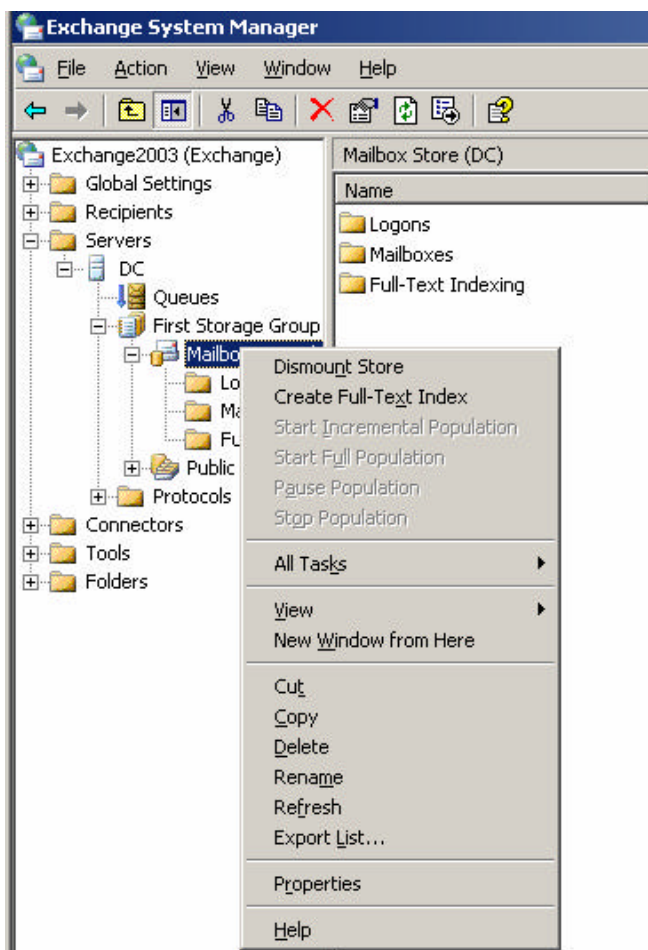? Dismount the store (when it is accessible for offline defrag, tests and many more)

Figure 1: Dismount the information store

ESEUTIL

ESEUTIL is a tool to offline defragment your exchange databases, to check their integrity and to repair a damaged/lost database.

ESEUTIL is located in the \EXCHSRVR\BIN directory. This directory is not in the system path so you must open the tool in the BIN directory or enhance the system path with the \EXCHSRVR\BIN directory.
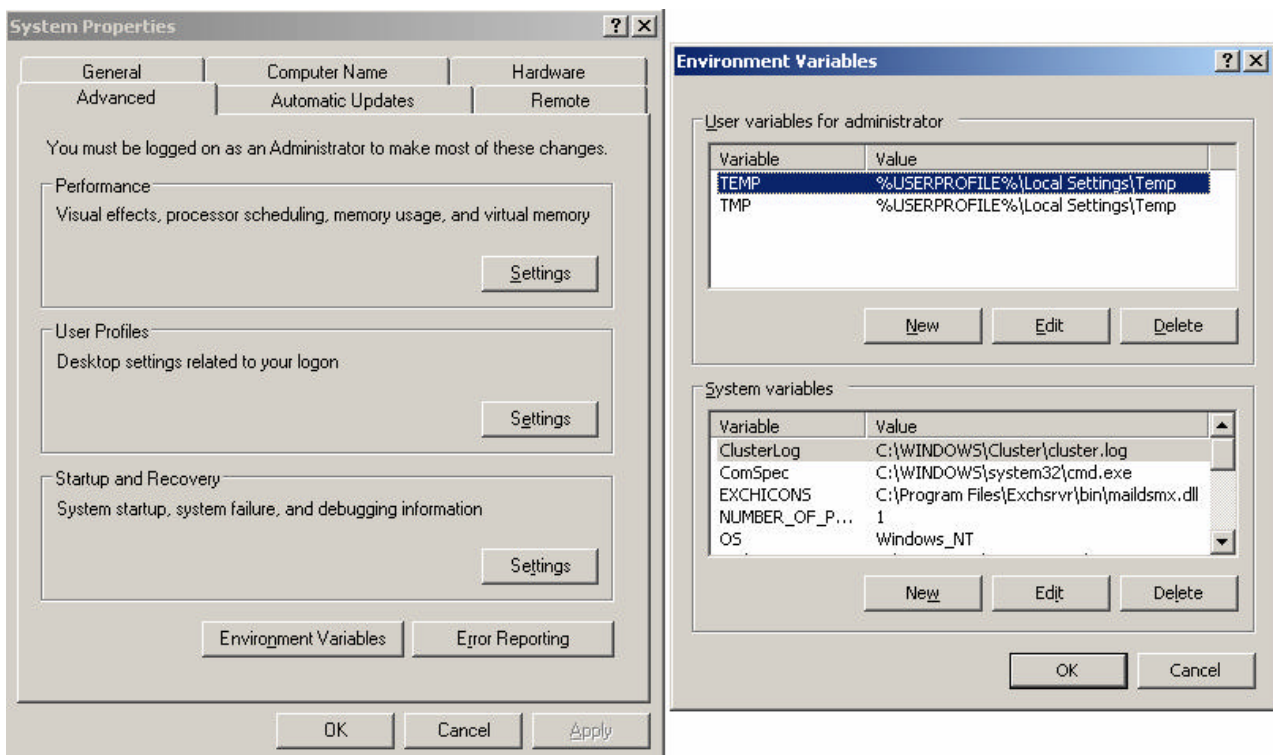

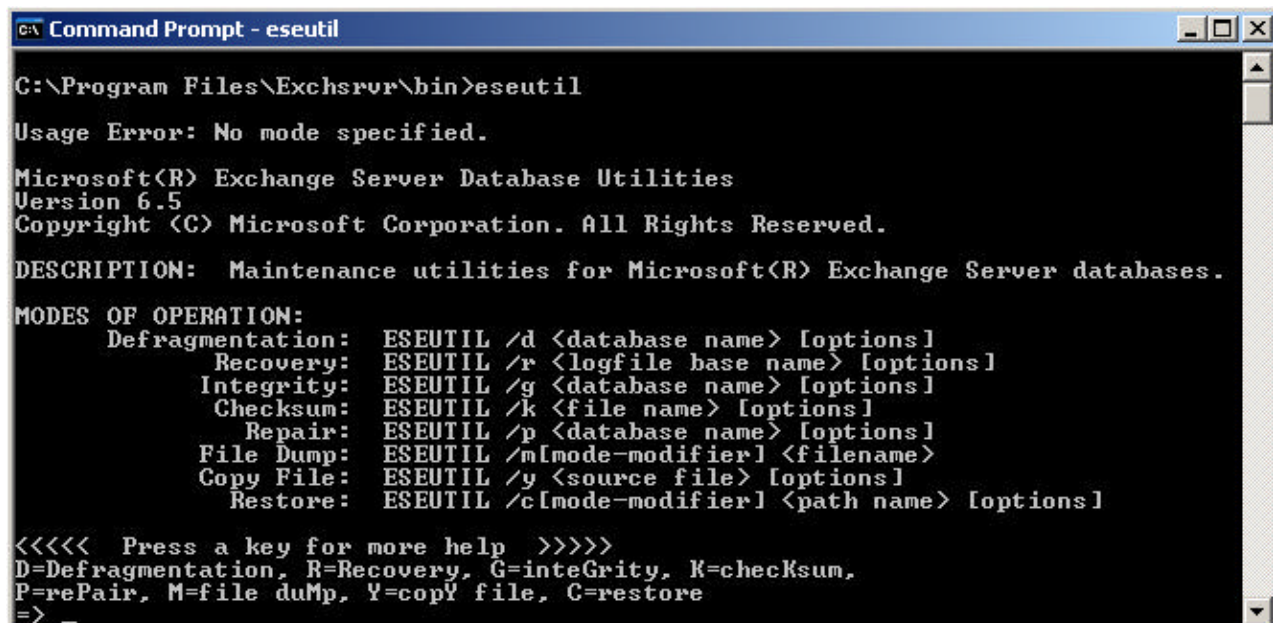Figure 2: Change the system path to point to the \EXCHSRVR\BIN directory

ESEUTIL /D parameters

Figure 3: ESEUTIL parameters
Defrag

Exchange 2003 defragments the Exchange database every night. But his is only an online defrag of the database. An only defrag doesn't reduce the size of the information store. To reduce the size of the databases, you must use an offline defrag.

When should i use an offline defrag?

Under normal conditions you doesn't need an offline defrag, but when you add tons of new users due an merger or aquisition or when you delete many objects from the store it can be necessary to do an offline defrag.

You can do a space dump with ESEUTIL /MS to determine the space. Also ensure that you have 110% free diskspace in association to the Exchange database size.

```
Command Prompt                                                    _ □ X

C:\Program Files\Exchsrvr\bin>eseutil /ms "c:\program files\exchsrvr\mdbdata\pri
v1.edb"

Microsoft(R) Exchange Server Database Utilities
Version 6.5
Copyright (C) Microsoft Corporation. All Rights Reserved.

Initiating FILE DUMP mode...
        Database: c:\program files\exchsrvr\mdbdata\priv1.edb

******************************* SLU SPACE DUMP *********************************
Chunk          Free Res Del Com  |------------- Used -------------|
==============================================================================
512             109   0   0 403  **************************
==============================================================================
TOTALS:
        Free:          109
    Reserved:            0
     Deleted:            0
   Committed:          403
     Unknown:            0
               _____
                      512
*******************************************************************************
```
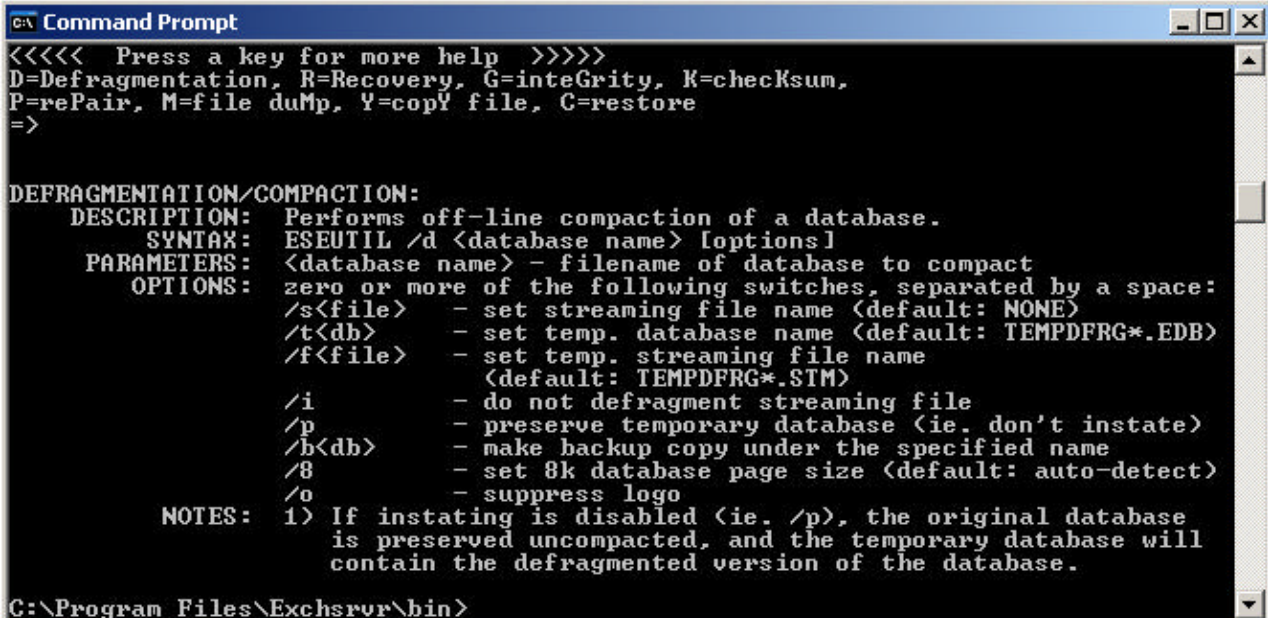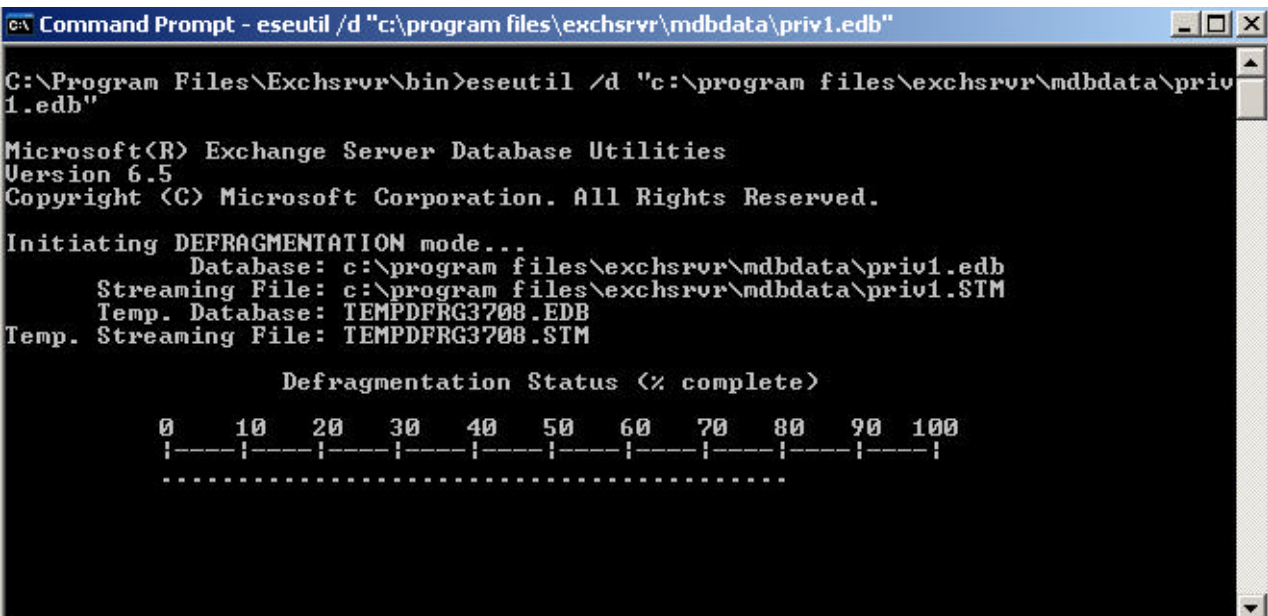
Figure 4: ESEUTIL /MS

ESEUTIL parameters for defragmentation

Figure 5: ESEUTIL Defrag parameters

Depending on the size of the information store and your hardware, the defrag prozess can consume a lot of time.

Figure 6: ESEUTIL defragmentation status

Check the integrity of the Exchange database

You can check the integrity of your Exchange database with ESEUTIL /G.
Please read **NOTE 1** carefully in the following screenshot.
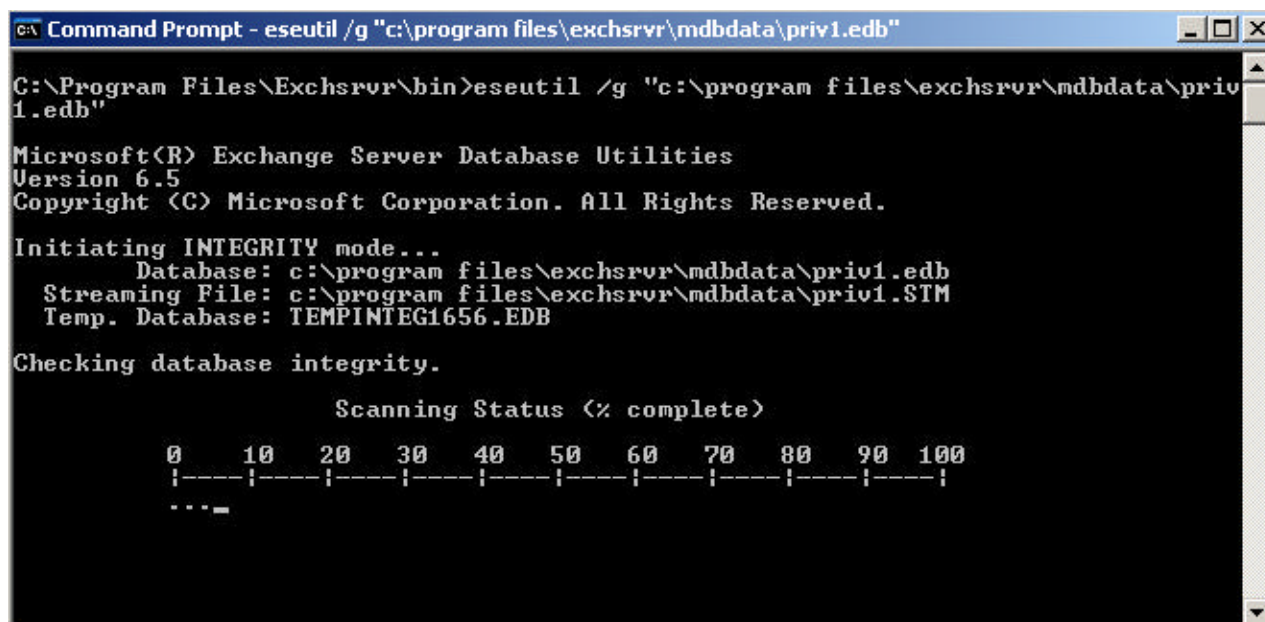

Figure 7: ESEUTIL integrity check

To start the integrity check for the PRIV1.EDB database, type the following command:

ESEUTIL /G „C:\Program files\exchsrvr\mdbdata\priv1.edb"

Figure 8: ESEUTIL integrity check status

Disaster recovery

With a good backup in hand and Exchange databases and logfiles on different hard drives, it is no problem to recover from an Exchange desaster.

Just restore the data from backup and initiate a roll forward of the transaction logs. Well done, the Exchange information store goes online.
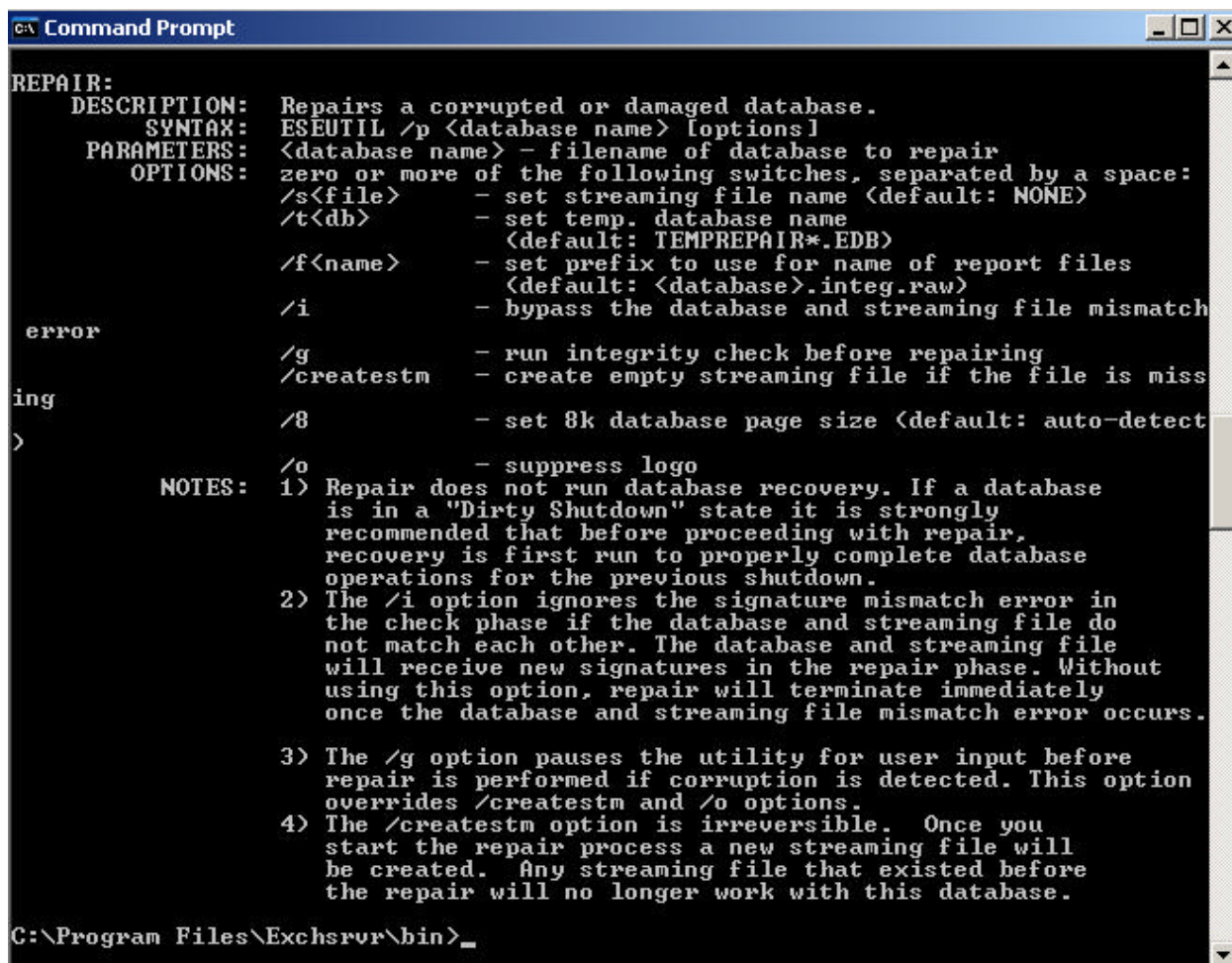
But what should you do when your backup isn't readable or you doesn't have a backup? Here's how these tools come to play.

Before you start:

- ? Make sure that the databases are really not startable
- ? Check the Application log for Exchange events that can tell you the cause of the failure
- ? Make a backup of the database
- ? Restart the server so that a soft recovery can be done

ESEUTIL /P parameters

ESEUTIL /p repairs a corrupted or damaged database. Ensure that you have a minimum of 20% free disc capacity in association to the Exchange databse size.

```
Command Prompt                                                    _ □ ×

REPAIR:
    DESCRIPTION:  Repairs a corrupted or damaged database.
         SYNTAX:  ESEUTIL /p <database name> [options]
     PARAMETERS:  <database name> - filename of database to repair
        OPTIONS:  zero or more of the following switches, separated by a space:
                  /s<file>     - set streaming file name (default: NONE)
                  /t<db>       - set temp. database name
                                 (default: TEMPREPAIR*.EDB)
                  /f<name>     - set prefix to use for name of report files
                                 (default: <database>.integ.raw)
                  /i           - bypass the database and streaming file mismatch
 error
                  /g           - run integrity check before repairing
                  /createstm   - create empty streaming file if the file is miss
ing
                  /8           - set 8k database page size (default: auto-detect
)
                  /o           - suppress logo
          NOTES:  1) Repair does not run database recovery. If a database
                     is in a "Dirty Shutdown" state it is strongly
                     recommended that before proceeding with repair,
                     recovery is first run to properly complete database
                     operations for the previous shutdown.
                  2) The /i option ignores the signature mismatch error in
                     the check phase if the database and streaming file do
                     not match each other. The database and streaming file
                     will receive new signatures in the repair phase. Without
                     using this option, repair will terminate immediately
                     once the database and streaming file mismatch error occurs.

                  3) The /g option pauses the utility for user input before
                     repair is performed if corruption is detected. This option
                     overrides /createstm and /o options.
                  4) The /createstm option is irreversible.  Once you
                     start the repair process a new streaming file will
                     be created.  Any streaming file that existed before
                     the repair will no longer work with this database.

C:\Program Files\Exchsrvr\bin>_
```

Figure 9: ESEUTIL repair modus
Example:

ESEUTIL /P „c:\program files\exchsrvr\mdbdata\priv1.edb"
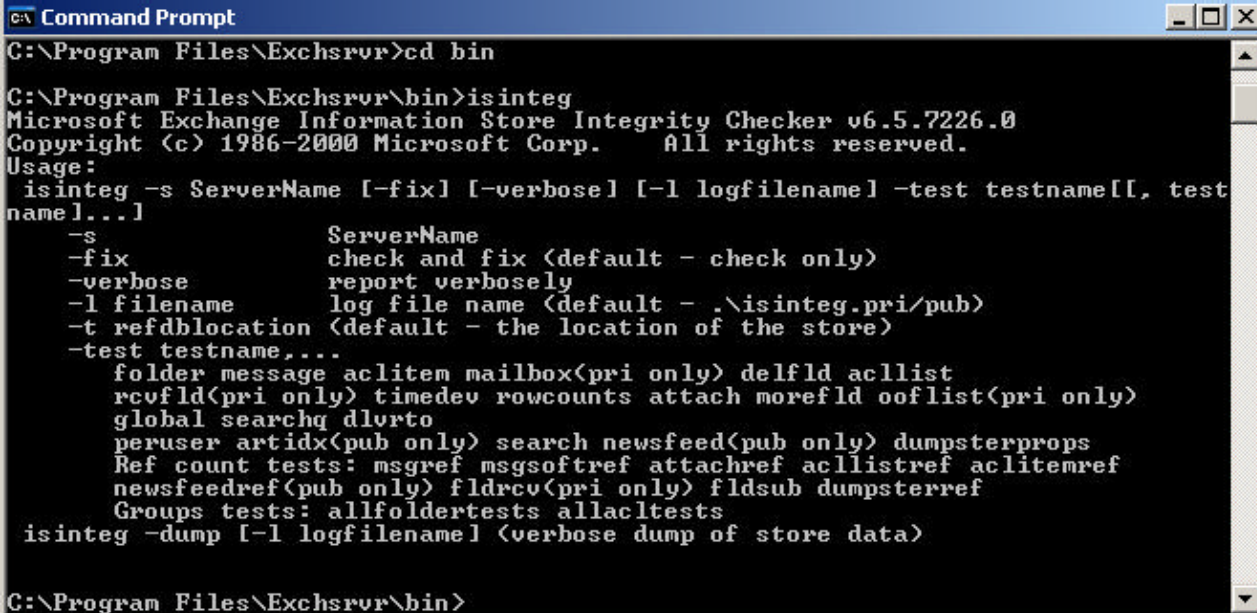/Se:\exchsrvr\mdbdata\priv1.stm /Te:\tempdb.edb

This command will repair the database PRIV1.EDB. If you have no .STM file, you can create one with ESEUTIL /CREATESTM. Read more about this here.

After running ESEUTIL, you can open a detailled logfile called >database<.integ.raw to see the results.

As a last Step run ISINTEG –fix -test alltests. You can read more about ISINTEG later in this article.

ISINTEG

ISINTEG is used to do some tests on your information store and to fix some detected errors and problems.


```
Command Prompt                                                          _ □ ×
C:\Program Files\Exchsrvr>cd bin

C:\Program Files\Exchsrvr\bin>isinteg
Microsoft Exchange Information Store Integrity Checker v6.5.7226.0
Copyright (c) 1986-2000 Microsoft Corp.    All rights reserved.
Usage:
 isinteg -s ServerName [-fix] [-verbose] [-l logfilename] -test testname[[, test
name]...]
    -s                  ServerName
    -fix                check and fix (default - check only)
    -verbose            report verbosely
    -l filename         log file name (default - .\isinteg.pri/pub)
    -t refdblocation (default - the location of the store)
    -test testname,...
        folder message aclitem mailbox(pri only) delfld acllist
        rcvfld(pri only) timedev rowcounts attach morefld ooflist(pri only)
        global searchq dlvrto
        peruser artidx(pub only) search newsfeed(pub only) dumpsterprops
        Ref count tests: msgref msgsoftref attachref acllistref aclitemref
        newsfeedref(pub only) fldrcv(pri only) fldsub dumpsterref
        Groups tests: allfoldertests allacltests
 isinteg -dump [-l logfilename] (verbose dump of store data)

C:\Program Files\Exchsrvr\bin>
```

Figure 10: ISINTEG parameters

ISINTEG is the only repair utility that understands the Exchange database as an Exchange database.
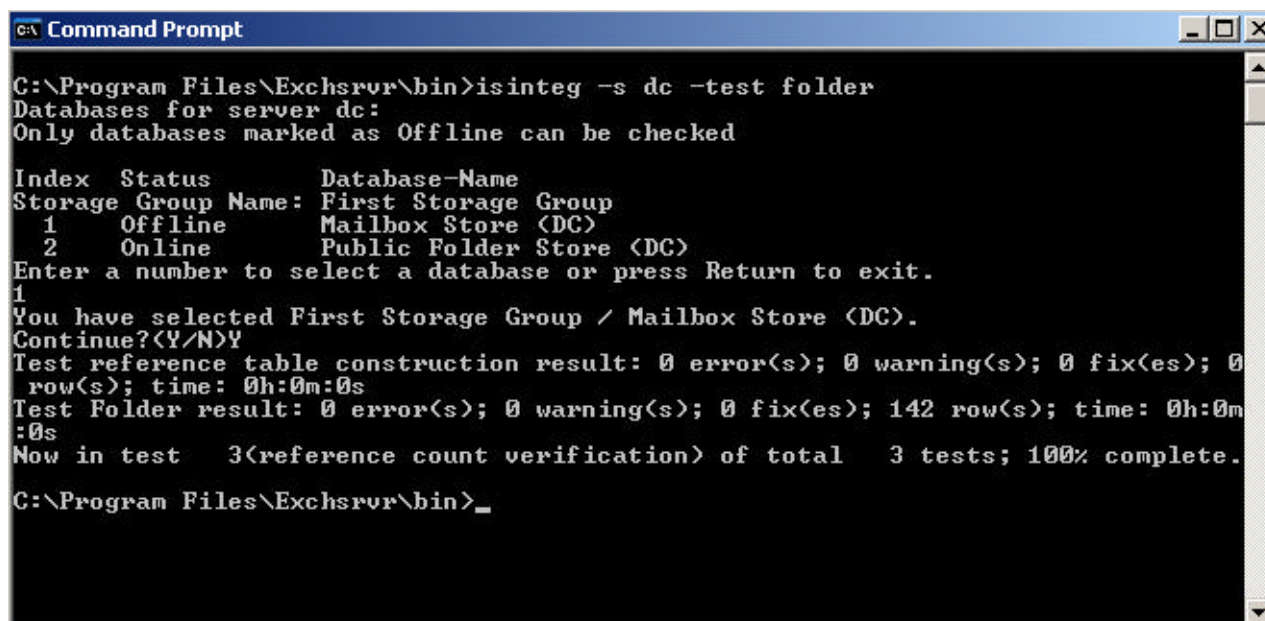
What does this mean? ESE is a generic database engine that can be used by different applications (Exchange, Active Directory).

ESEUTIL looks into the database as just another ESE database, and can see their tables and indexes. ESEUTIL just fixes the database tables.

Now it is time for ISINTEG. ISINTEG is aware of the relation between database tables and records that turn them into folders and messages.

After you run ISINTEG –FIX, you will see many warnings but you can safely ignore these messages. You should only pay attendtion fort he end of ISINTEG. There should be zero errors reported. If there is an error, run ISINTEG again.

This example shows ISINTEG –test folder

Figure 11: ISINTEG –test folder

Conclusion

ESEUTIL and ISINTEG are two powerful tools for ensuring the health of your Exchange information store and a good resource to recover from failures in the store.
Use these tools with caution when you want to repair your information store. It is always a good idea to make a backup before you use ESEUTIL to repair your Exchange databases. In this article i have explained only a few features of ESEUTIL and ISINTEG. For a full understanding of this tools, read the following KB articles.

Related Links

ESEUTIL

Repairing Exchange databases with ESEUTIL - when and how?
http://blogs.msdn.com/exchange/archive/2004/06/18/159413.aspx
In Exchange 2000 Server and Exchange Server 2003 Eseutil in Repair/Integrity Mode Incorporates /X and /V Options
http://support.microsoft.com/default.aspx?scid=kb;en-us;232734
Use the Eseutil Utility to Detect File Header Damage in Exchange 2003
http://support.microsoft.com/default.aspx?scid=kb;en-us;825088
How to maintain your Exchange database after you repair by using the Eseutil /p tool in Exchange Server 5.5, in Exchange 2000 Server, and in Exchange Server 2003
http://support.microsoft.com/default.aspx?scid=kb;en-us;812357

How to use Eseutil to test transaction log files for damage in Exchange 2000 Server and in Exchange Server 2003
http://support.microsoft.com/default.aspx?scid=kb;en-us;248122
Use the Eseutil Utility to Perform a Checksum Procedure on a Streaming File
http://support.microsoft.com/default.aspx?scid=kb;en-us;823167
How to defragment with the Eseutil utility (Eseutil.exe)
http://support.microsoft.com/default.aspx?scid=kb;en-us;192185
How to run Eseutil on a computer without Exchange Server
http://support.microsoft.com/default.aspx?scid=kb;en-us;244525
Eseutil /d Defragments the Database and the Streaming File
http://support.microsoft.com/default.aspx?scid=kb;en-us;254132
How to re-create STM File in Exchange 2000/2003
http://support.microsoft.com/default.aspx?scid=kb;en-us;555146
How to defragment Exchange databases
http://support.microsoft.com/default.aspx?scid=kb;en-us;328804

ISINTEG

Running Isinteg -patch Is Not Needed in Exchange
http://support.microsoft.com/default.aspx?scid=kb;en-us;240202
The Exchange Information Store service may stop responding when you run the Isinteg utility in Exchange Server 2003
http://support.microsoft.com/default.aspx?scid=kb;en-us;870976