A practical guide for

"Essbase Backup and Recovery Part I"

Description:

This document provides fundamentals for Essbase backup and recovery concept. Document also covers the steps to backup and recover the Essbase data and its associated artifacts. Few examples for Essbase database failure and recovery is also shown in the guide

History:

Version	Description Change	Author	Publish Date
0.1	Initial Draft	Gaurav Shrivastava	02-Feb-2011
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Table of Contents

Backup & Recovery: Back and recovery is one of the most important strategies one should define as an administration activity. Backing up Essbase database is important to prevent data loss and other objects from any kind of loss. You take backup of database and other Essbase artifacts so that you can safeguard your important data and objects.

We can restore the Essbase database to the point we took backup last time. For example the backup cycle is once in a week i.e every Sunday, so if the database fails on Tuesday we loss the data till Tuesday. The frequency of data backup depends on many scenarios. One of the new features that were introduced in the EPM 11.1.1.0 release is the ability to restore an Essbase database back to its original state after a database failure. Typically, restoring a database from a backup always restores the database back to the point in time when the backup was taken. In part-I of Essbase backup and recovery we are focused to basic backup and recovery strategies. Next release of this doc will talk about the Replay transaction feature.

Types of backup

1) Hot Backup: - Perform backup while server is up and running mode.[Cover in this guide]
2) Cold Backup: - Perform backup while server is not in running mode.

File System Backup Types

A complete file system backup includes an entire system directory. For example, backing up the Hyperion home directory, backs up all installed EPM system Products. You can also perform file system backup of these types and frequencies:

1. Post installation - Directories created or modified if you reconfigure products
2. Daily incremental - New directories or files or those modified those modified since the previous day
3. Weekly full- All files in the directories for which you perform daily incremental backups
4. As needed - Data that is modified infrequently

Common Backup

1. Preparing for Backup: - Server required to be prepared for performing backup. Server should be in read only mode or it should be in idle mode.
2. Database Backup: - First take backup of database files. You must take database backup in form of text file or other database form.
3. File System Backup: - Secondary you should have backup of all supporting files. It is difficult to recover database without supporting files like outline files. Rule files or index file.

Steps for taking backup

You should follow these steps for performing backup operation.

1) Server should be in Read-Only mode.
2) Perform backup operation.
3) Revert back server in to Read-Write mode.

Hot Backup: -

When you take hot backup your server should be in Read-Only mode.
Advantage of hot backup:-

1) No server down time
2) Analysis can be performed during backup

Summary of Backup:

1. Put the database in read-only mode by using the begin archive command.
2. Manually backup all the files listed in the archive file generated as part of the begin archive command.
3. Revert the database to the normal mode by using the end archive mode.

Basically the database begin archive command does the following

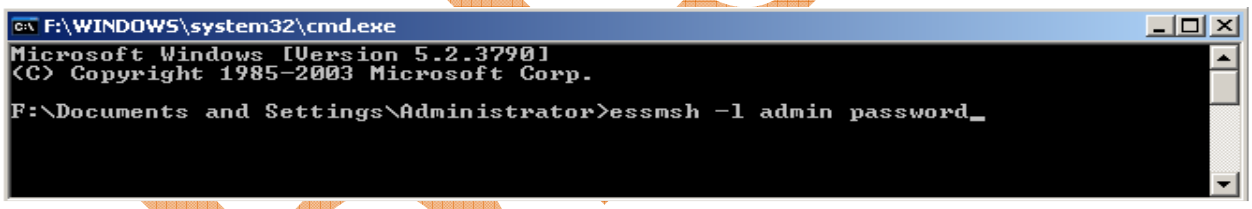
1. All the modified data which have not been committed so far onto the disk would be committed.
2. Puts the database in Readonly mode
3. Creates a file which will basically list down all the Essbase specific files that need to be backed up

Disadvantage of hot backup:-

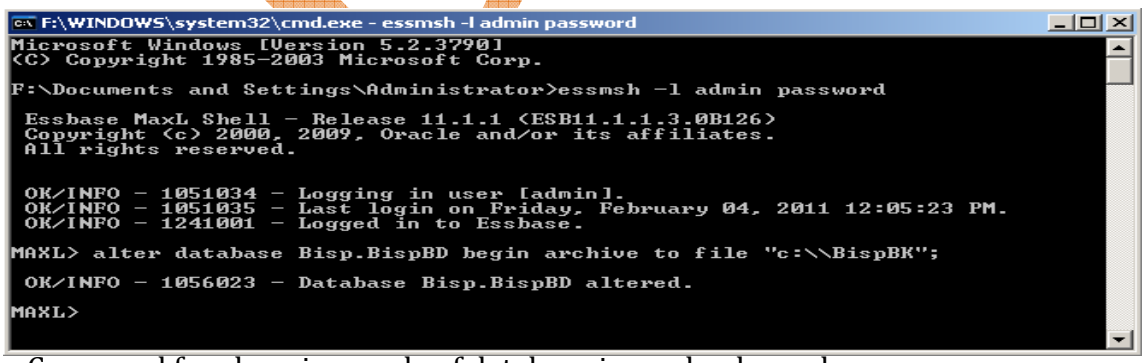
1) Client can't modify value or insert data during backup

Caution: When you take backup of database, then your server should be in read only mode.

Step#1 : Enter in to Essbase server through command mode.

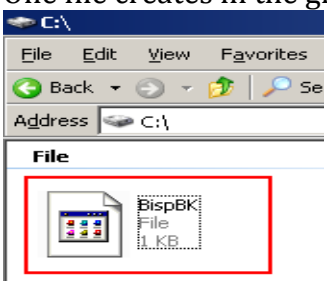


Step#2 Put database into readonly mode.

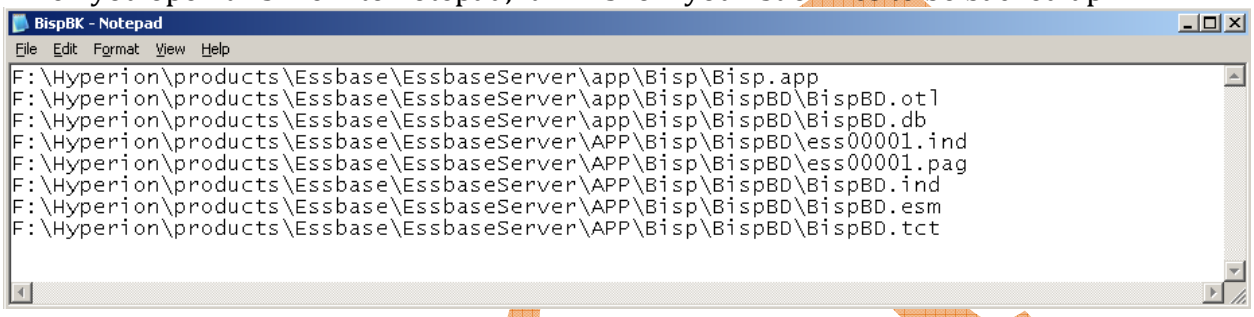


Command for changing mode of database in read only mode.
Maxl "alter database begin archive".
Syntax → alter database Bisp.BispBD begin archive to file "c:\\BispBK";

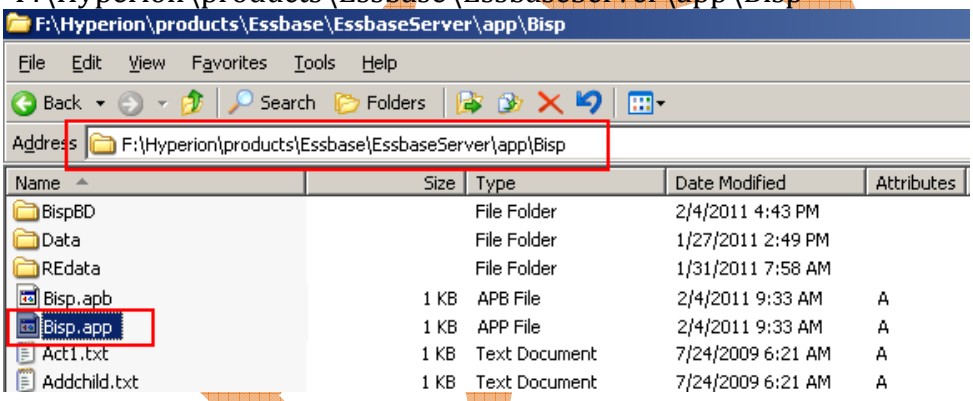
One file creates in the given path “C:\\BispBK”.



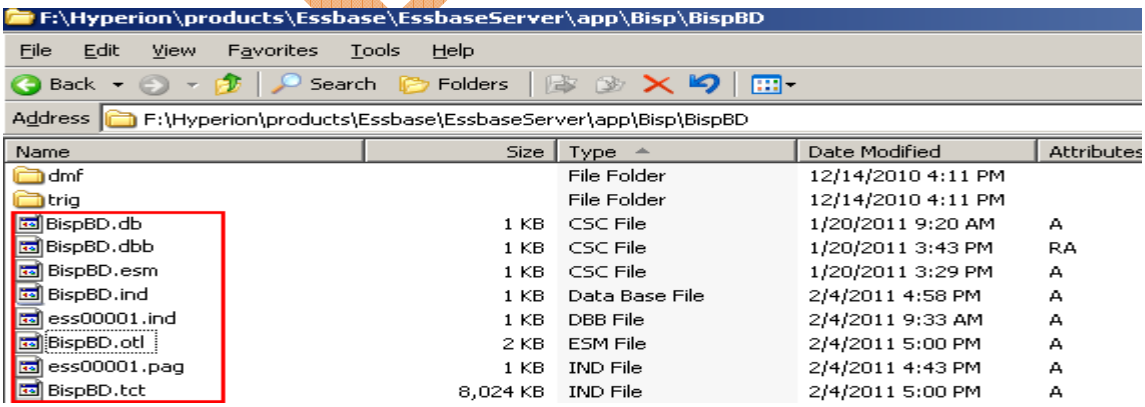
When you open this file into notepad, it will show you list of files to be backed up.



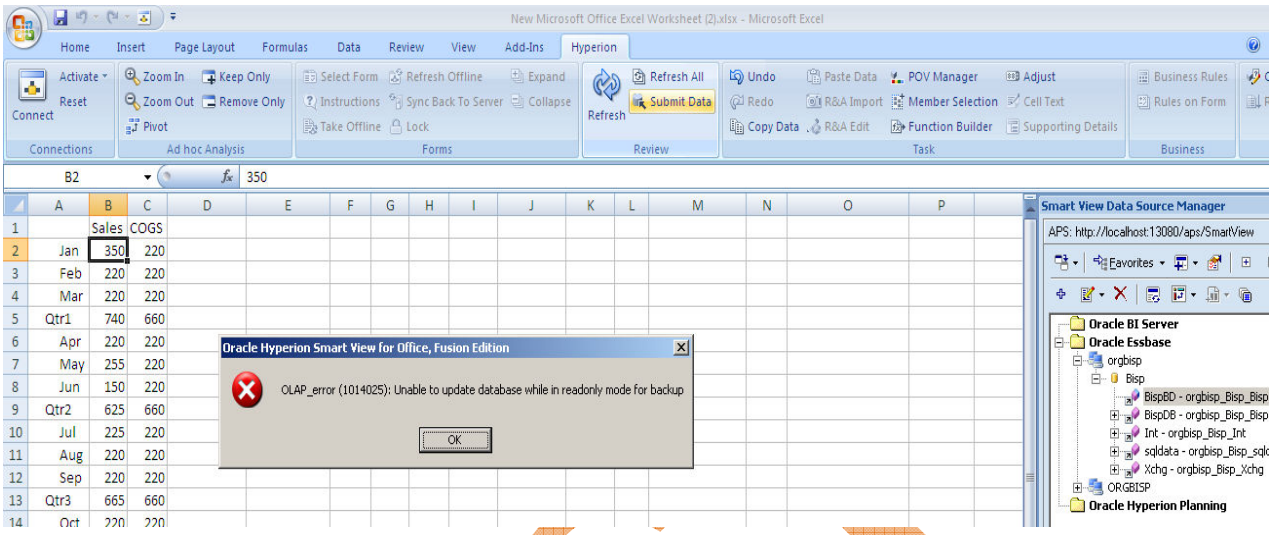
Open Bisp folder from the following path
“F:\Hyperion\products\Essbase\EssbaseServer\app\Bisp”



These are the files to be backed up.



For checking that data base is read only mode try to connect to the database and upload using lock and send method. You can see database can't be updated from the client side.



Important Backup files

You have to take backup of fallowing files.

When performing a file system backup use the file system backup software of your choice.

1. essxxxxx.ind
2. essxxxxx.pag
3. databasename.eam
4. databasename.ind
5. databasename.otl
6. x.lro

Essbase files that you must manually backup

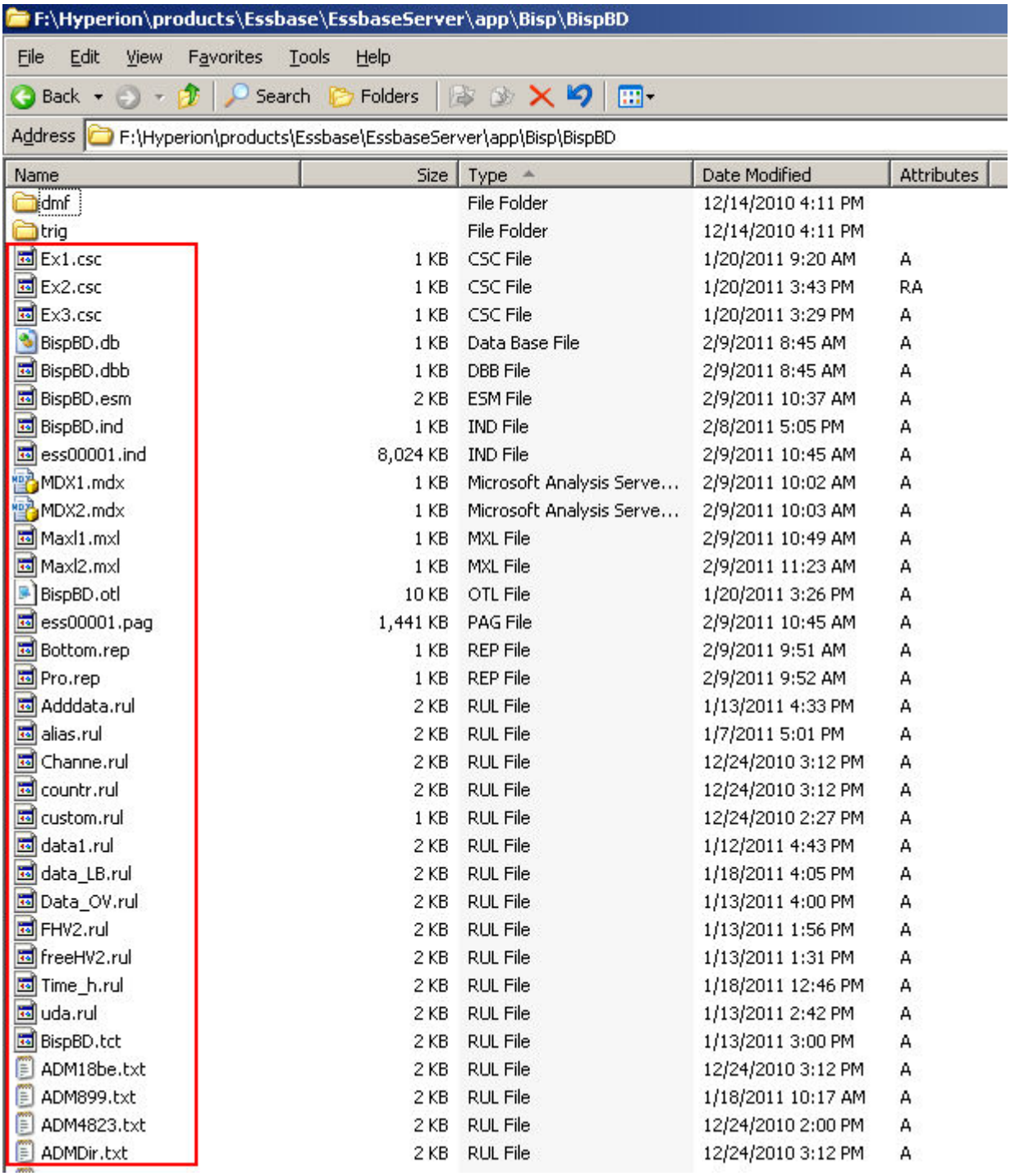
1. essbase.sec
2. essbase.bak
3. essbase.cfg
4. databasename.app

Database artifact files

1. *.otl
2. *.csc
3. *.rul
4. *.rep
5. *.eqd
6. *.sep

There are some more supporting file needs to be backed up. Copy all files and keep in a common folder. When any misshaping occurs you can recover from this folder. “BispBK” notepad shows necessary backup files but not complete backup files like “*.csc”,”*.rul”,”*.mdx”,”*.mxl”,”*.rep” and other.

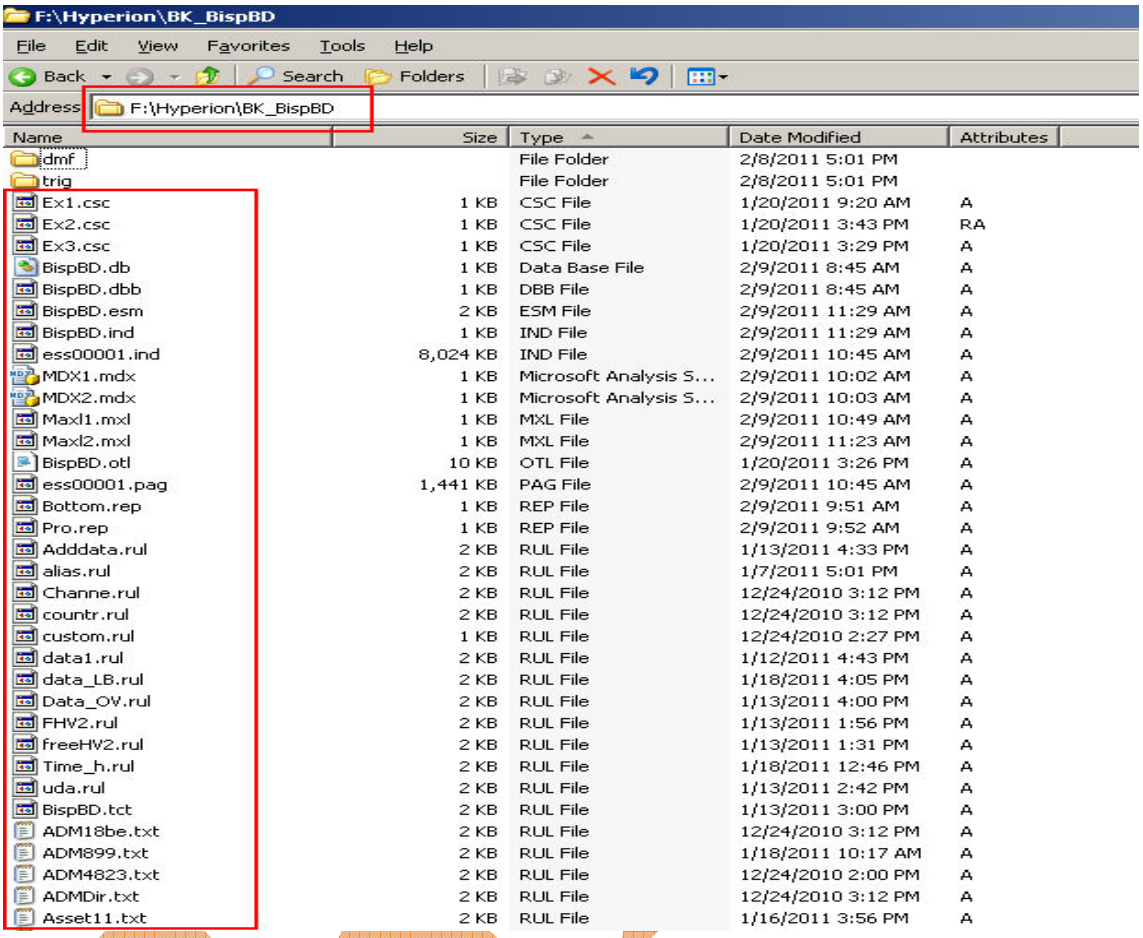
Copy all below files and keep in to another folder.



Name	Size	Type	Date Modified	Attributes
dmf		File Folder	12/14/2010 4:11 PM	
trig		File Folder	12/14/2010 4:11 PM	
Ex1.csc	1 KB	CSC File	1/20/2011 9:20 AM	A
Ex2.csc	1 KB	CSC File	1/20/2011 3:43 PM	RA
Ex3.csc	1 KB	CSC File	1/20/2011 3:29 PM	A
BispBD.db	1 KB	Data Base File	2/9/2011 8:45 AM	A
BispBD.dbb	1 KB	DBB File	2/9/2011 8:45 AM	A
BispBD.esm	2 KB	ESM File	2/9/2011 10:37 AM	A
BispBD.ind	1 KB	IND File	2/8/2011 5:05 PM	A
ess00001.ind	8,024 KB	IND File	2/9/2011 10:45 AM	A
MDX1.mdx	1 KB	Microsoft Analysis Serve...	2/9/2011 10:02 AM	A
MDX2.mdx	1 KB	Microsoft Analysis Serve...	2/9/2011 10:03 AM	A
Maxl1.mxl	1 KB	MXL File	2/9/2011 10:49 AM	A
Maxl2.mxl	1 KB	MXL File	2/9/2011 11:23 AM	A
BispBD.otl	10 KB	OTL File	1/20/2011 3:26 PM	A
ess00001.pag	1,441 KB	PAG File	2/9/2011 10:45 AM	A
Bottom.rep	1 KB	REP File	2/9/2011 9:51 AM	A
Pro.rep	1 KB	REP File	2/9/2011 9:52 AM	A
Adddata.rul	2 KB	RUL File	1/13/2011 4:33 PM	A
alias.rul	2 KB	RUL File	1/7/2011 5:01 PM	A
Channe.rul	2 KB	RUL File	12/24/2010 3:12 PM	A
countr.rul	2 KB	RUL File	12/24/2010 3:12 PM	A
custom.rul	1 KB	RUL File	12/24/2010 2:27 PM	A
data1.rul	2 KB	RUL File	1/12/2011 4:43 PM	A
data_LB.rul	2 KB	RUL File	1/18/2011 4:05 PM	A
Data_OV.rul	2 KB	RUL File	1/13/2011 4:00 PM	A
FHV2.rul	2 KB	RUL File	1/13/2011 1:56 PM	A
freeHV2.rul	2 KB	RUL File	1/13/2011 1:31 PM	A
Time_h.rul	2 KB	RUL File	1/18/2011 12:46 PM	A
uda.rul	2 KB	RUL File	1/13/2011 2:42 PM	A
BispBD.tct	2 KB	RUL File	1/13/2011 3:00 PM	A
ADM18be.txt	2 KB	RUL File	12/24/2010 3:12 PM	A
ADM899.txt	2 KB	RUL File	1/18/2011 10:17 AM	A
ADM4823.txt	2 KB	RUL File	12/24/2010 2:00 PM	A
ADMDir.txt	2 KB	RUL File	12/24/2010 3:12 PM	A

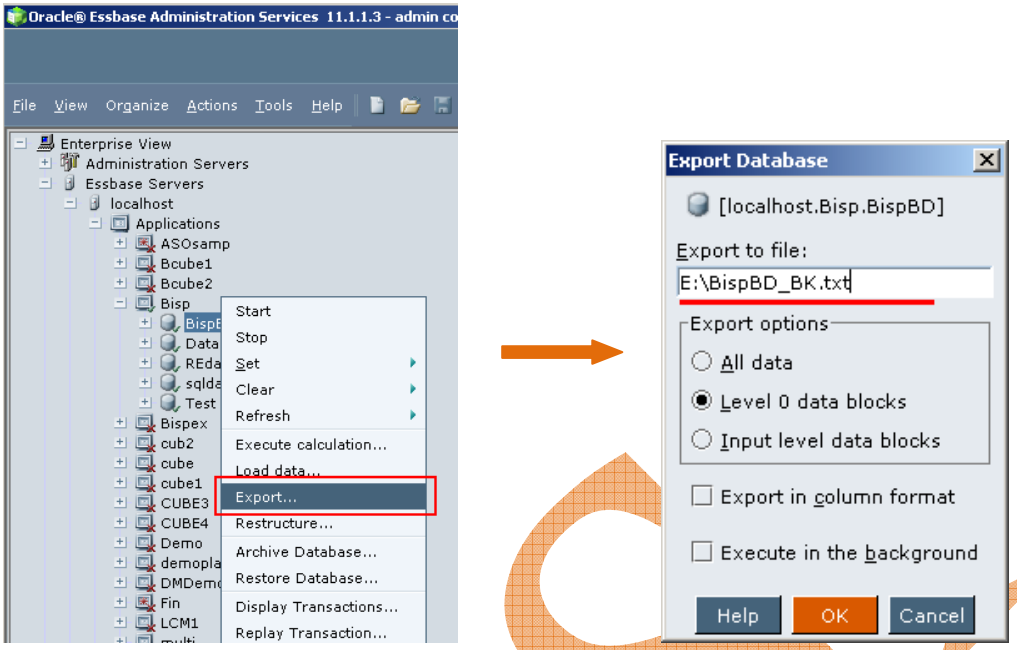
Backup folder: -

Create one backup folder and keep all supporting files into it.

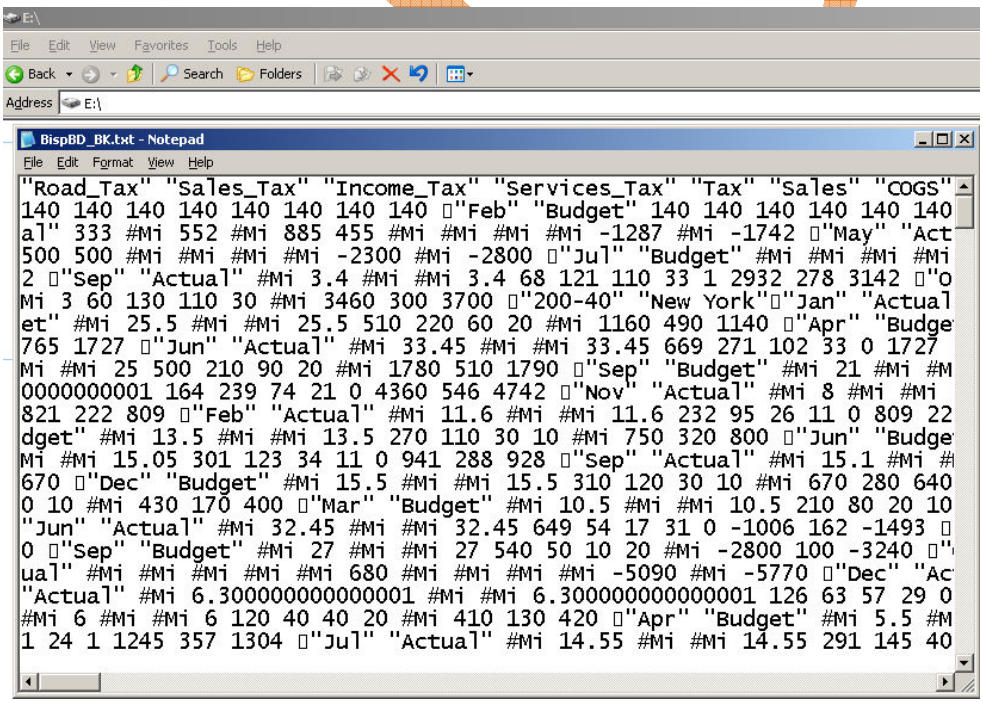


Name	Size	Type	Date Modified	Attributes
dmf		File Folder	2/8/2011 5:01 PM	
trig		File Folder	2/8/2011 5:01 PM	
Ex1.csc	1 KB	CSC File	1/20/2011 9:20 AM	A
Ex2.csc	1 KB	CSC File	1/20/2011 3:43 PM	RA
Ex3.csc	1 KB	CSC File	1/20/2011 3:29 PM	A
BispBD.db	1 KB	Data Base File	2/9/2011 8:45 AM	A
BispBD.dbb	1 KB	DBB File	2/9/2011 8:45 AM	A
BispBD.esm	2 KB	ESM File	2/9/2011 11:29 AM	A
BispBD.ind	1 KB	IND File	2/9/2011 11:29 AM	A
ess00001.ind	8,024 KB	IND File	2/9/2011 10:45 AM	A
MDX1.mdx	1 KB	Microsoft Analysis S...	2/9/2011 10:02 AM	A
MDX2.mdx	1 KB	Microsoft Analysis S...	2/9/2011 10:03 AM	A
Maxl1.mxl	1 KB	MXL File	2/9/2011 10:49 AM	A
Maxl2.mxl	1 KB	MXL File	2/9/2011 11:23 AM	A
BispBD.otl	10 KB	OTL File	1/20/2011 3:26 PM	A
ess00001.pag	1,441 KB	PAG File	2/9/2011 10:45 AM	A
Bottom.rep	1 KB	REP File	2/9/2011 9:51 AM	A
Pro.rep	1 KB	REP File	2/9/2011 9:52 AM	A
Adddata.rul	2 KB	RUL File	1/13/2011 4:33 PM	A
alias.rul	2 KB	RUL File	1/7/2011 5:01 PM	A
Channe.rul	2 KB	RUL File	12/24/2010 3:12 PM	A
countr.rul	2 KB	RUL File	12/24/2010 3:12 PM	A
custom.rul	1 KB	RUL File	12/24/2010 2:27 PM	A
data1.rul	2 KB	RUL File	1/12/2011 4:43 PM	A
data_LB.rul	2 KB	RUL File	1/18/2011 4:05 PM	A
Data_OV.rul	2 KB	RUL File	1/13/2011 4:00 PM	A
FHV2.rul	2 KB	RUL File	1/13/2011 1:56 PM	A
freeHV2.rul	2 KB	RUL File	1/13/2011 1:31 PM	A
Time_h.rul	2 KB	RUL File	1/18/2011 12:46 PM	A
uda.rul	2 KB	RUL File	1/13/2011 2:42 PM	A
BispBD.tct	2 KB	RUL File	1/13/2011 3:00 PM	A
ADM18be.txt	2 KB	RUL File	12/24/2010 3:12 PM	A
ADM899.txt	2 KB	RUL File	1/18/2011 10:17 AM	A
ADM4823.txt	2 KB	RUL File	12/24/2010 2:00 PM	A
ADMDir.txt	2 KB	RUL File	12/24/2010 3:12 PM	A
Asset11.txt	2 KB	RUL File	1/16/2011 3:56 PM	A

Step#3 Data Backup: Keep server in read only mode, when you take backup of database. Right click on database and "Export" database specify backup file path and export option.



Backup file will generate, you can view your data.



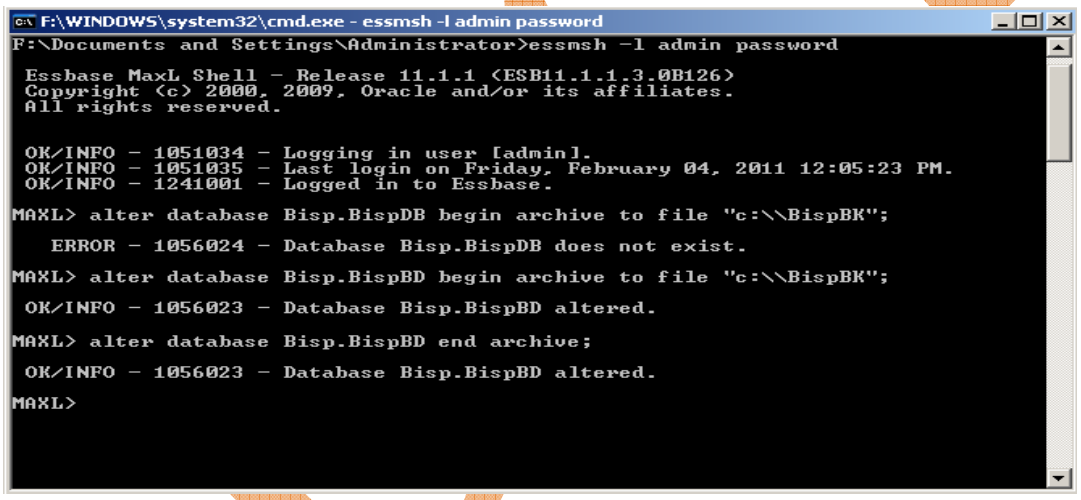
Essbase Recovery: To restore a database, replace the files on disk with the corresponding files from backup. The application should be stopped, unless you are restoring from an export file. In that case, ensure the application is not accepting client connections.

Restoring Corrupted Databases: If there is a problem with any one of these essential database files, the entire database becomes corrupted and Essbase server cannot start the database.

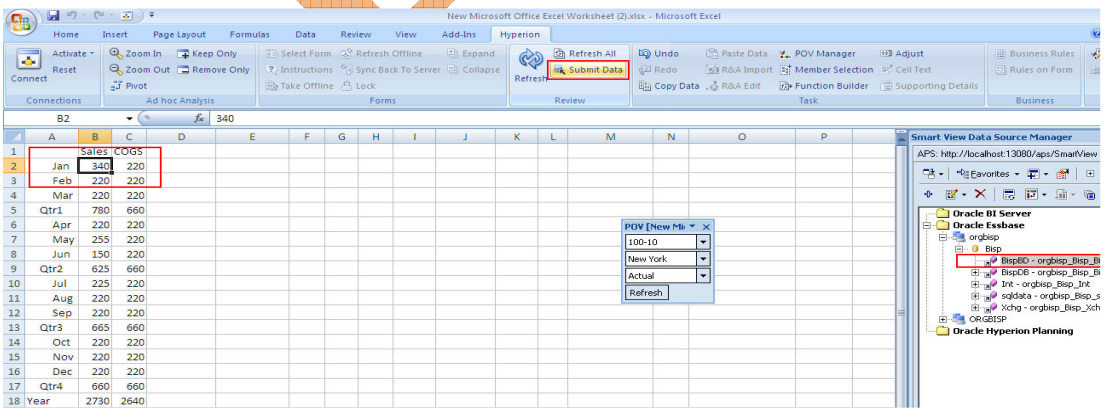
1) essn.pag
2) essn.ind
3) databasename.esm
4) databasename.tct
5) databasename.ind

Step#4 Back Server to the normal mode

Once backup done, you can change Essbase server mode into read write mode.
Command for changing read only mode to read write mode.
Maxl "alter database end archive".
Syntax → alter database Bisp.BispBD end archive;



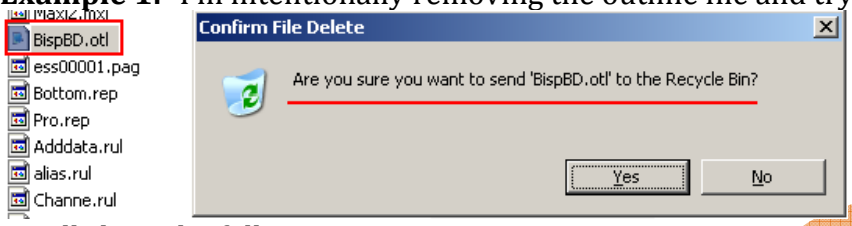
Now client can update data because now data base is in read write mode.



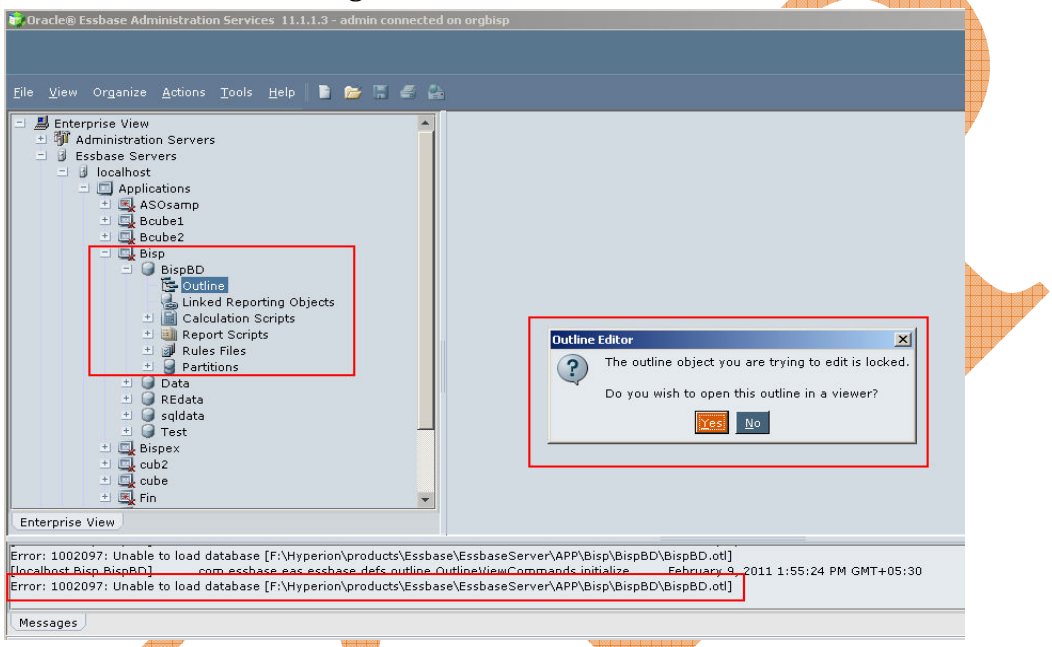
Backup Recovery Problem and solution

Below are some examples, shows kind of Essbase artifact lost and recovery.

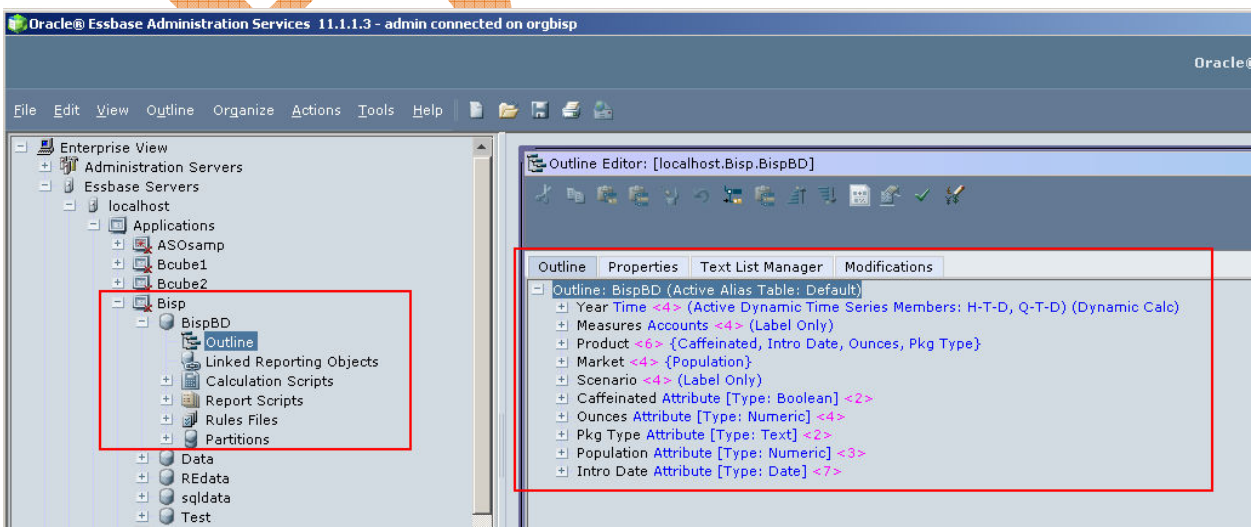
Example 1:- I'm intentionally removing the outline file and try to open the cube



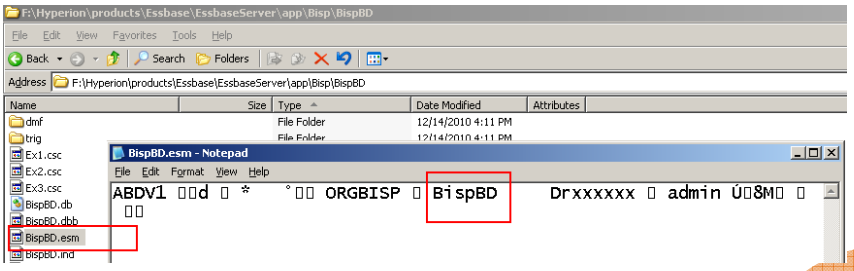
It will show the following error.



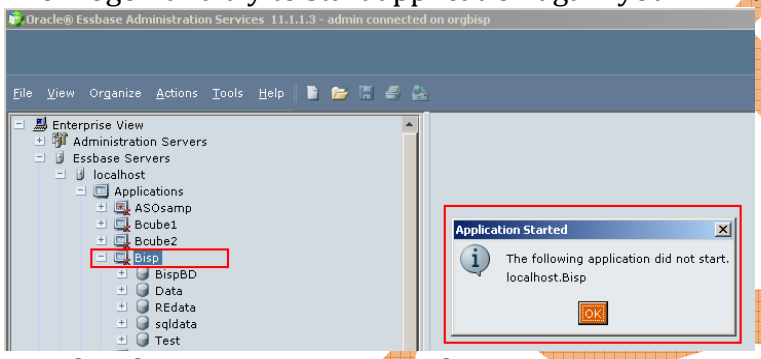
Solution:- For recovery outline file, copy outline file from backup folder and paste in to database folder.



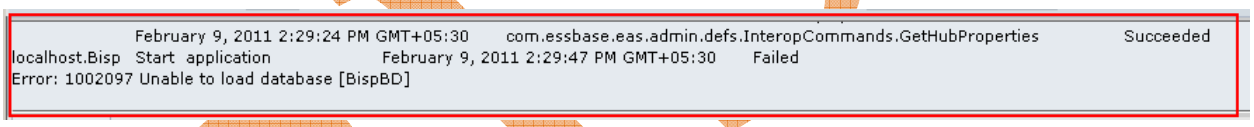
Example2:- If "database.esm" file gets corrupted, the application will not start again. I'm intentionally corrupting the file to demonstrate the same.



Then logoff and try to start application again you will have fallowing error.

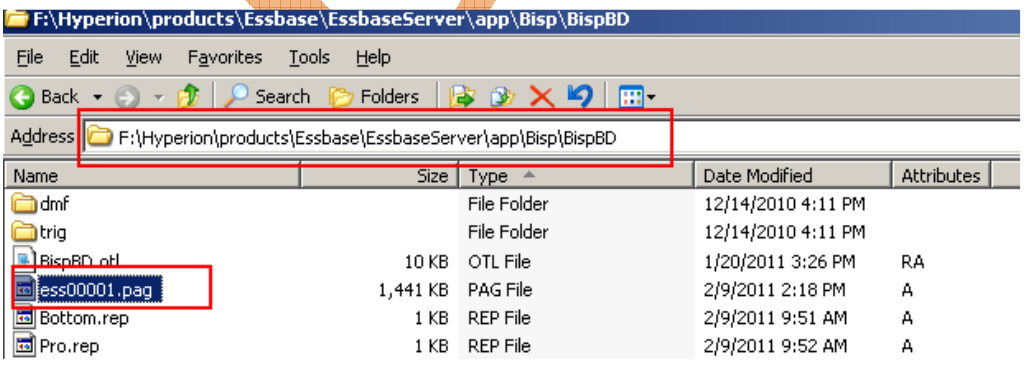


Detail is shown in message panel.

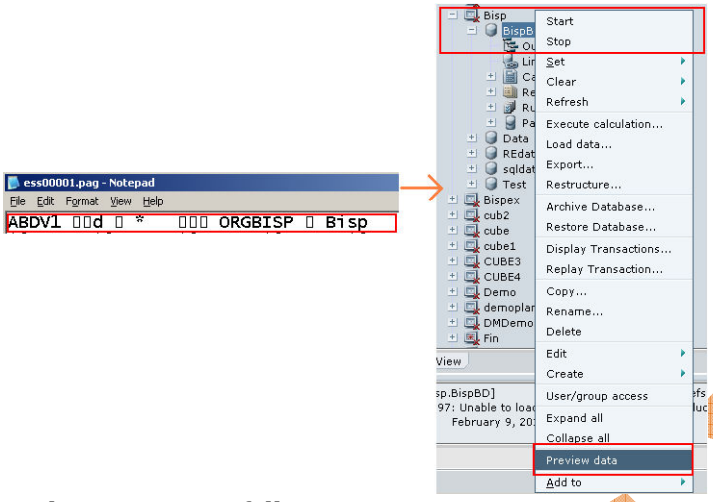


Solution:- Copy the "BispBD.esm" file from backup folder and replace with the corrupted file to "BispBD" folder.

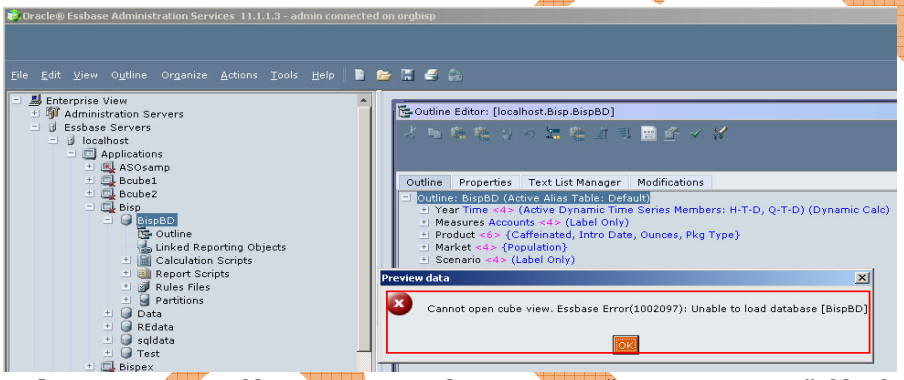
Example 3:-In the next example assuming the ".pag" file corrupts. And tries to preview the data, get the below error. Because "*.pag" file is Essbase database file.



You can open this file in to notepad and then corrupt it then try to open preview data.



Essbase give you fallowing error.



Solution:- Your file is corrupted now copy "ess00001.pag" file from the backup folder and replace with the corrupted file. Then you will able to see preview of data.