



Document:

Essbase BSO Performance Tuning “A Hands-on Guide”

Description:

In this document we have shown all import aspects of Essbase cube performance parameters. We have captured various statistics related to load data, retrieve data, execute calculation script, running reports script, block size, block density etc. Join our professional training course for Hyperion and OBIEE to learn from industry experts. The document is for public access. We assist Hyperion Essbase learner to explore the various aspects. Join our professional training program to learn from experts.

History:

| Version | Description Change | Author | Publish Date |
|---------|------------------------|--------------------|--------------|
| 0.1 | Initial Draft | Gaurav Shrivastava | 5-May-2011 |
| 0.1 | Review 1 st | Amit Sharma | 5-May-2011 |

Essbase performance monitoring and making sure your cube is fast enough so that your business users like to access it, is very important skill. Knowing how Essbase work internally helps you to designed the optimized cube and tune various parameters. In this document we have captured various statistics with different parameters to assist learner to identify the Best possible combination of various parameters setting.. You are performing server administrator role your job to keep server performance high. You need to keep eye on server performance all the time. If your server performance low down you need to execute set of operations and get back your server in to normal condition. There are some quick actions that can be taken place like allocate more memory to essbase server,tuning essbase.cfg file and compression techniques. In this document you will get Essbase performance statistic for different condition. The performance of the Essbase server depends on various factors. The below statistics are captured consider a generic examples.

Below statistics is about a cube which has 2 dense and 9 sparse dimensions.

| Performance Tuning | Data load | Data Retrieval | | | Calculati on | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|--|---------------------------|----------------|--------------|---|--------------|-------------|----------|---------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | Calc All | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 1:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and cache memory size is default | 6.031Sec / 20MB Data File | 128.500Sec | 124.422Sec | 0.046Sec | 13.188Sec | 32.734Sec | 3.453Sec | 33.171Sec | Before Data Load | 0% | 864 | Null | Null | 10KB | 10KB |
| | | | | | | | | | After Data Load | 88.86% | 864 | 7.83MB | 92.10MB | 10KB | 10KB |
| Case 2:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and cache memory size is default | 4.625Sec / 20MB Data File | 130.656Sec | 124.765Sec | 0.031Sec | 0.813Sec | 35.11Sec | 3.219Sec | 35.359Sec | Before Data Load | 0% | 864 | Null | Null | 10KB | 10KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 10KB | 10KB |
| Case 3:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and Index and data cache memory size is 100 times from default | 3.625Sec / 20MB file | 133.64Sec | 129.515Sec | 0.063Sec | 0.594Sec | 28.50Sec | 1.984Sec | 28.797Sec | Before Data Load | 0% | 864 | Null | Null | 10KB | 10KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 10KB | 10KB |
| Case 4:- All 2 dimensions are dense and 9 sparse, I/O mode is Direct and Index and data cache memory size is 100 times from default | 3265Sec / 20MB data file | 146.14Sec | 126.765Sec | 0.172Sec | 0.516Sec | 29.344Sec | 2.046Sec | 29.469Sec | Before Data Load | 0% | 864 | Null | Null | 10KB | 10KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 10KB | 10KB |
| Case 5:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and sort buffer memory size is 100times as default | 3.39Sec / 20MB Data File | 123.187Sec | 96.281Sec | 0.016Sec | 0.718Sec | 29.047Sec | 2.047Sec | 29.516Sec | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |
| Case 6:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and sort buffer memory size is 100times as default | 2.234Sec / 20MB Data File | 87.938Sec | 90.563Sec | 0.032Sec | 0.906Sec | 35.328Sec | 3Sec | 35.39Sec | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |
| Case 7:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and 100 times cache memory and buffer memory | 1.844Sec / 20MB data file | 95.078Sec | 91.578Sec | 0.031Sec | 0.844Sec | 35.484Sec | 3Sec | 35.672Sec | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |
| Case 8:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and 100times cache memory and buffer memory | 2.281Sec / 20MB Data File | 93.484Sec | 89.296Sec | 0.063Sec | 0.656Sec | 28.89Sec | 2.062Sec | 29.234Sec | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |

Case 1:- A cube which has 2 dense and 9 sparse dimensions. Index and data cache memory is default. Where I/O mode is buffer I/O.

Case statistic

| Performance Tuning | Data load | Data Retrieval | | | Calculati on | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|--|---------------------------|----------------|--------------|---|--------------|-------------|----------|---------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 1:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and cache memory size is default | 6.031Sec / 20MB Data File | | | | | | | | Before Data Load | 0% | 864 | Null | Null | 10KB | 10KB |
| | | 128.500Sec | 124.422Sec | 0.046Sec | 13.188Sec | 32.734Sec | 3.453Sec | 33.171Sec | After Data Load | 88.86% | 864 | 7.83MB | 92.10MB | 10KB | 10KB |

Cube dimension storage type

Outline Editor: [essbase.PerFTu.DenSpa]

Case-sensitive members: false
Outline type: Block Storage
Duplicate member names allowed false
Typed Measures enabled false
Date format yyyy-mm-dd
Varying attributes enabled false
Alias tables
Attribute settings
Data storage
Auto configure false
Dimension storage types
Year Dense
Measures Dense
Product Sparse
Market Sparse
Scenario Sparse
Stock Sparse
comparability Sparse
Ownership Sparse
Organisation Sparse
Brand Sparse
View Sparse

Database Properties: [essbase.PerFTu.DenSpa]
Database: essbase.PerFTu.DenSpa Status: Loaded
General Dimensions Statistics Caches Transactions Storage Currency Modifications
Number of dimensions 11

| Dimension | Type | Members in Dimension | Members Stored |
|---------------|--------|----------------------|----------------|
| Year | Dense | 19 | 12 |
| Measures | Dense | 17 | 9 |
| Product | Sparse | 25 | 22 |
| Market | Sparse | 25 | 25 |
| Scenario | Sparse | 5 | 2 |
| Stock | Sparse | 2 | 1 |
| comparability | Sparse | 4 | 4 |
| Ownership | Sparse | 4 | 4 |
| Organisation | Sparse | 3 | 3 |
| Brand | Sparse | 4 | 4 |
| View | Sparse | 4 | 4 |

Below screenshot shows when there are many sparse dimensions and few dense dimensions the Block Size is low.

Database Properties: [essbase.PerFTu.DenSpa]
Database: essbase.PerFTu.DenSpa Status: Loaded
General Dimensions Statistics Caches Transactions Storage Currency Modifications
Blocks
Number of existing blocks 0
Block size (B) 864
Potential number of blocks 1689600
Existing level 0 blocks 0
Existing upper-level blocks 0
Block density (%) 0.00
Percentage of maximum blocks existing 0.00
Compression ratio 0.00
Average clustering ratio 1.00
Run-time
Hit ratio on index cache 0.00
Hit ratio on data cache 0.00
Number of index page reads 0.00
Number of index page writes 0.00
Number of data block reads 0.00
Number of data block writes 0.00
Hit ratio on data file cache 0.00

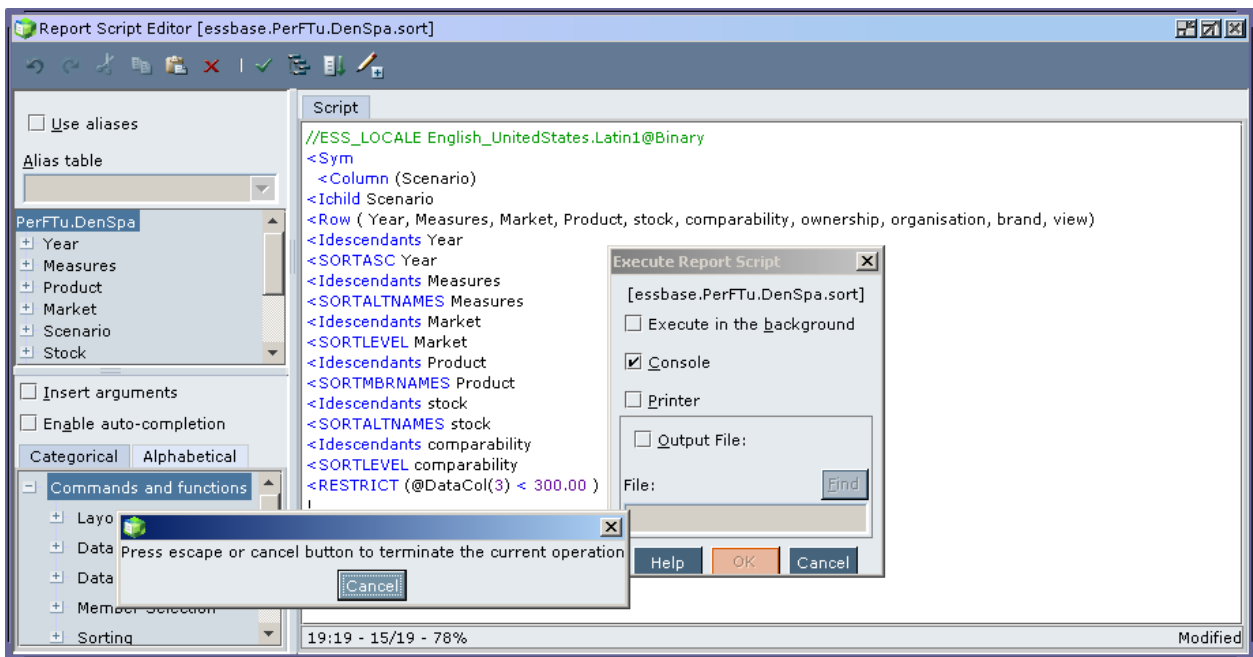
Case when: Loading 20MB data file in to cube.

[Tue May 03 17:20:49 2011]Local/PerFTu/DenSpa/admin/Info(1003037)
Data Load Updated [1.45152e+006] cells
[Tue May 03 17:20:49 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [6.031] seconds
[Tue May 03 17:20:49 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]

Case when: Executing “Calc All”

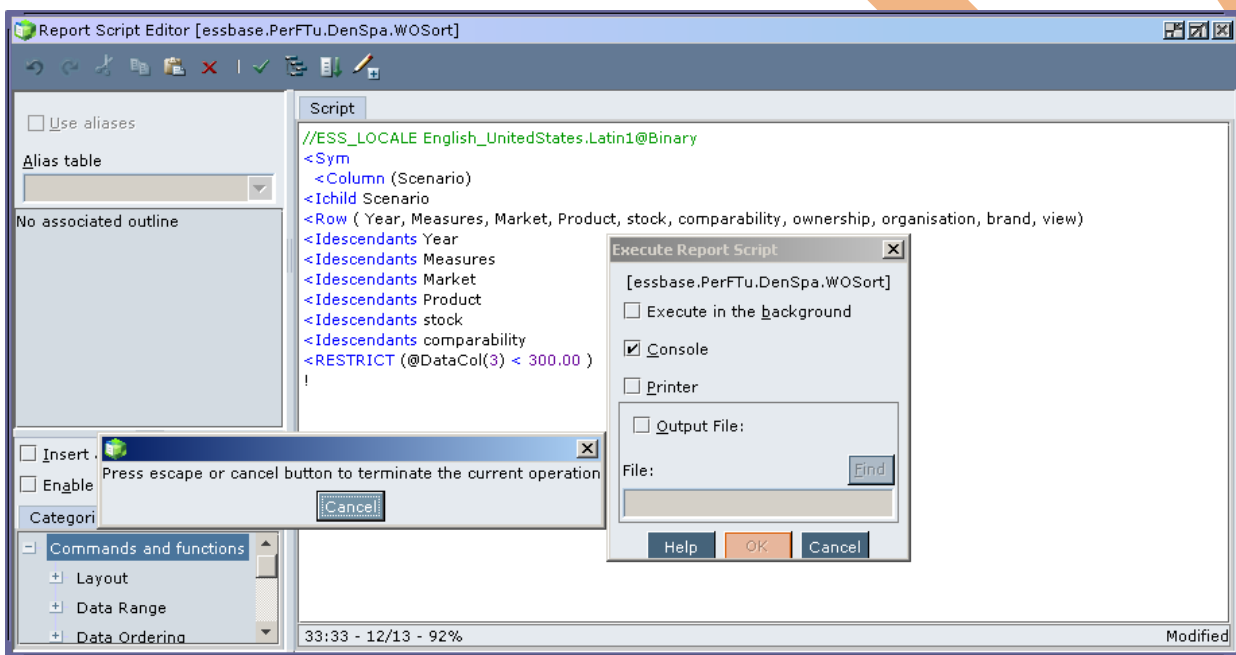
[Tue May 03 17:28:13 2011]Local/PerFTu/DenSpa/admin/Info(1012677)
Calculating in serial
[Tue May 03 17:28:26 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [13.188] seconds
[Tue May 03 17:28:26 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed

Case when: Executing report script with sort operation



[Wed May 04 09:47:17 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [sort.rep]
[Wed May 04 09:49:26 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [128.5] seconds
[Wed May 04 09:49:26 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [6358000] non-Dyn.Calc.Cache : [0]

Case when : Executing report script without sort operation

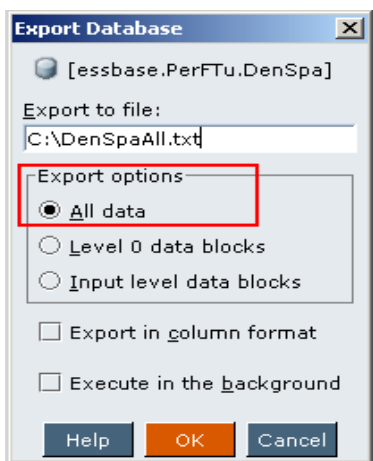


[Sun May 08 13:11:53 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [92.859] seconds

Case when : Retrieving data in to spread sheet, when four users are connected.

[Wed May 04 10:06:44 2011]Local/PerFTu/DenSpa/Mack/Info(1013091)
Received Command [GetDimInfo] from user [Mack]
[Wed May 04 10:06:45 2011]Local/PerFTu/DenSpa/Mack/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.046] seconds
[Wed May 04 10:06:45 2011]Local/PerFTu/DenSpa/Mack/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

Case when: Exporting all cube data into text file



[Wed May 04 10:13:48 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [32.703].
[Wed May 04 10:13:48 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [32.734].
[Wed May 04 10:13:48 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu'.DenSpa]

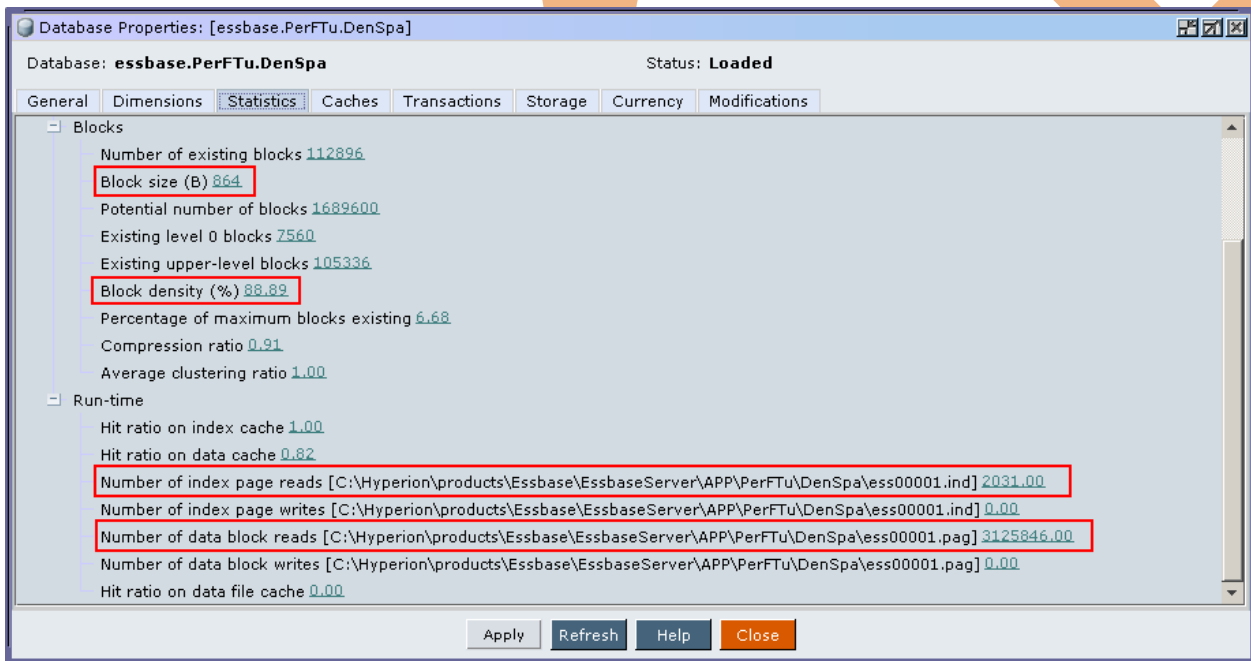
Case when: Exporting all level 0 data of cube into text file.



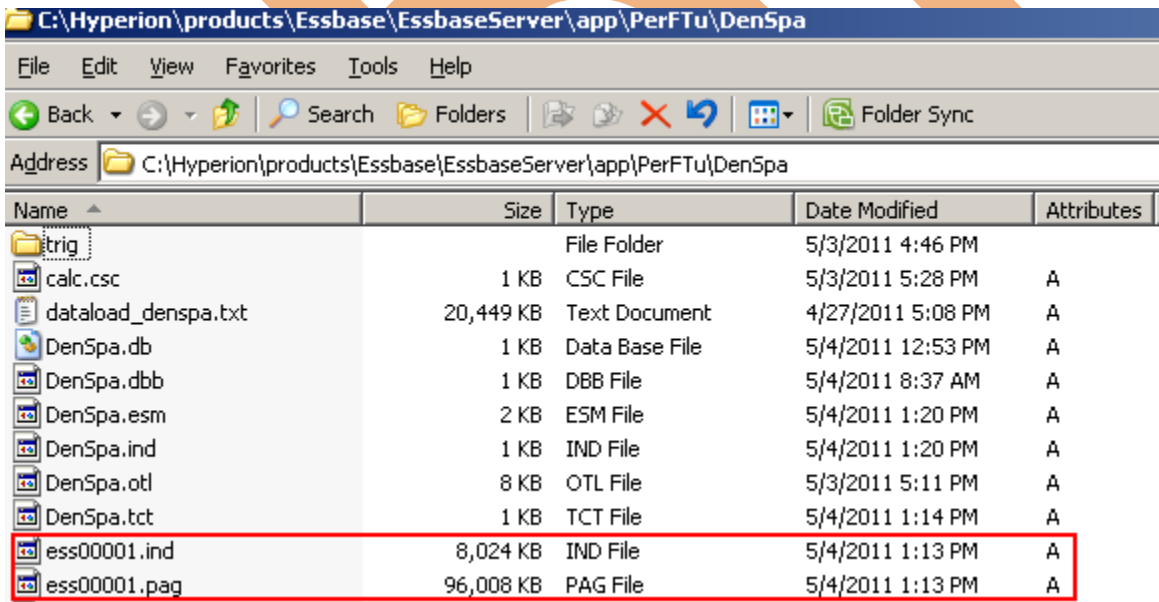
Case when: Export all cube data with column format into text file.



Statistics after data load.



Index and data load file size after data load.



Case 2:- A cube which has 2 dense and 9 sparse dimensions. Index and data cache memory is default. Where input output mode is direct.

Case statistic

| Performance Tuning | Data load | Data Retrieval | | | Calculation | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|--|---------------------------|----------------|--------------|---|-------------|-------------|----------|---------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | CalcAll | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 2:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and cache memory size is default | 4.625Sec / 20MB Data File | 130.656Sec | 124.765Sec | 0.031Sec | 0.813Sec | 35.11Sec | 3.219Sec | 35.359Sec | Before Data Load | 0% | 864 | Null | Null | 10KB | 10KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 10KB | 10KB |

Database Properties: [essbase.PerFTu.DenSpa]

Database: **essbase.PerFTu.DenSpa** Status: **Loaded**

General Dimensions Statistics Caches Transactions Storage Currency Modifications

Current I/O access mode: Direct I/O

Direct I/O mode: No wait

Pending I/O access mode: Direct I/O

Data compression: Bitmap encoding

| Disk Volume | Partition Size | Unit | File Type | File Size | Unit |
|-------------------|----------------|------|-----------|-----------|------|
| Click here to add | | | | | |

Set Delete

| Data/Index File Type | Size | Status | Name |
|----------------------|------|--------|------|
|----------------------|------|--------|------|

Apply Refresh Help Close

Case when: Loading 20MB data file in to cube.

```
[Wed May 04 10:48:28 2011]Local/PerFTu/DenSpa/admin/Info(1003037)
Data Load Updated [1.45152e+006] cells

[Wed May 04 10:48:28 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [4.625] seconds

[Wed May 04 10:48:28 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]
```

Case when : Executing “Calc All”

```
[Wed May 04 11:23:40 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.813] seconds

[Wed May 04 11:23:40 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed
```

Case when : Executing report script with sort operation

Report Script Editor [essbase.PerFTu.DenSpa.sort]

☐ Use aliases

Alias table

PerFTu.DenSpa

Year

Measures

Product

Market

Scenario

Stock

☐ Insert arguments

☐ Enable auto-completion

Categorical Alphabetical

Commands and functions

Layout

Data

Data

Member Selection

Sorting

Script

//ESS_LOCALE English_UnitedStates.Latin1@Binary
<Sym
<Column (Scenario)
<Ichild Scenario
<Row (Year, Measures, Market, Product, stock, comparability, ownership, organisation, brand, view)
<Idescendants Year
<SORTASC Year
<Idescendants Measures
<SORTALTNames Measures
<Idescendants Market
<SORTLEVEL Market
<Idescendants Product
<SORTMBRNames Product
<Idescendants stock
<SORTALTNames stock
<Idescendants comparability
<SORTLEVEL comparability
<RESTRICT (@DataCol(3) < 300.00)

Execute Report Script

[essbase.PerFTu.DenSpa.sort]

☐ Execute in the background

☒ Console

☐ Printer

☐ Output File:

File:

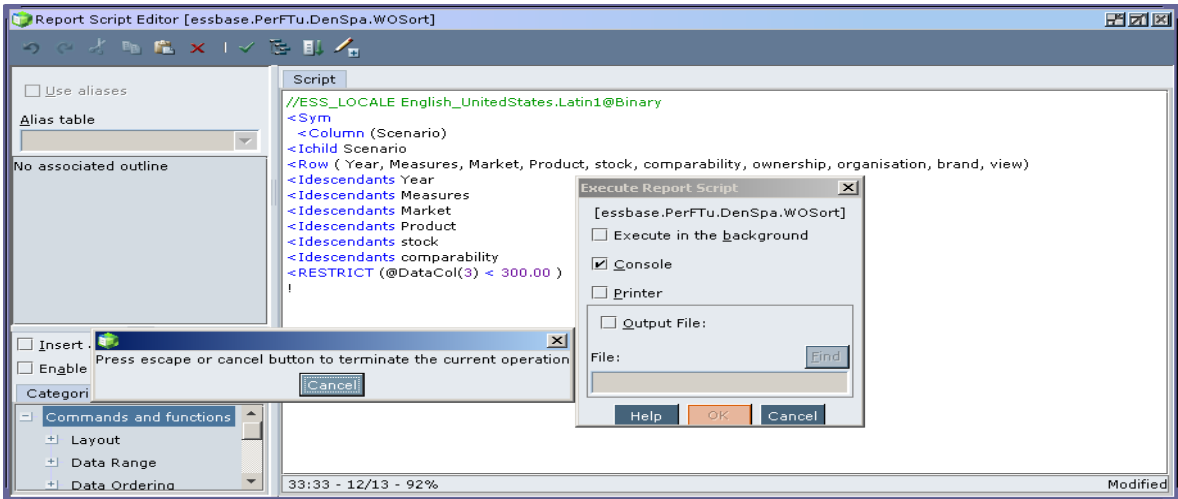
Help OK Cancel

```
[Wed May 04 10:50:23 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [sort.rep]

[Wed May 04 10:52:34 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [130.656] seconds

[Wed May 04 10:52:34 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [6358000] non-Dyn.Calc.Cache : [0]
```

Case when : Executing report script without sort operation

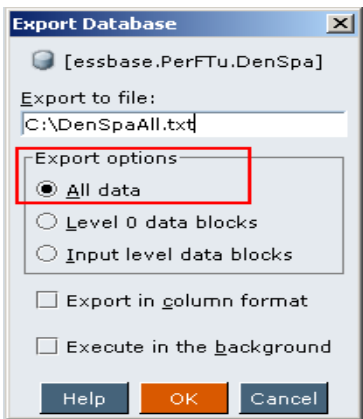


[Wed May 04 10:54:01 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]
[Wed May 04 10:56:06 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [124.765] seconds
[Wed May 04 10:56:06 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [6358000] non-Dyn.Calc.Cache : [0]

Case when: Retrieving data in to spread sheet, when four users are connected.

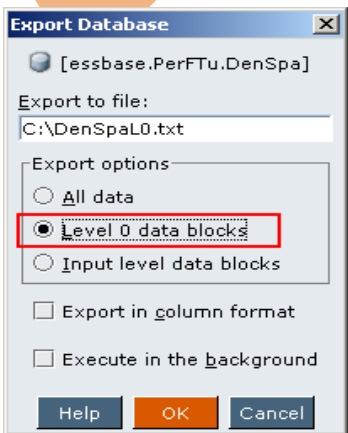
[Thu May 05 09:07:03 2011]Local/PerFTu///Info(1013205)
Received Command [Get Database File Information]
[Thu May 05 09:07:12 2011]Local/PerFTu/DenSpa/Mack/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.031] seconds
[Thu May 05 09:07:12 2011]Local/PerFTu/DenSpa/Mack/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

Case when: Exporting all cube data into text file



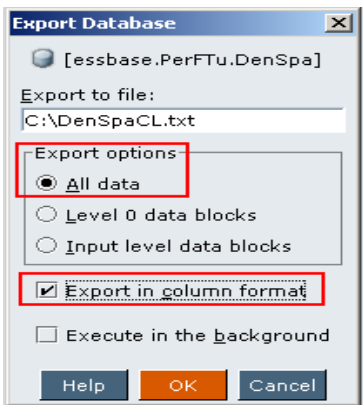
[Wed May 04 11:11:45 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [35.11].
[Wed May 04 11:11:45 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [35.11].
[Wed May 04 11:11:45 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Case when: Exporting all level 0 data of cube into text file.



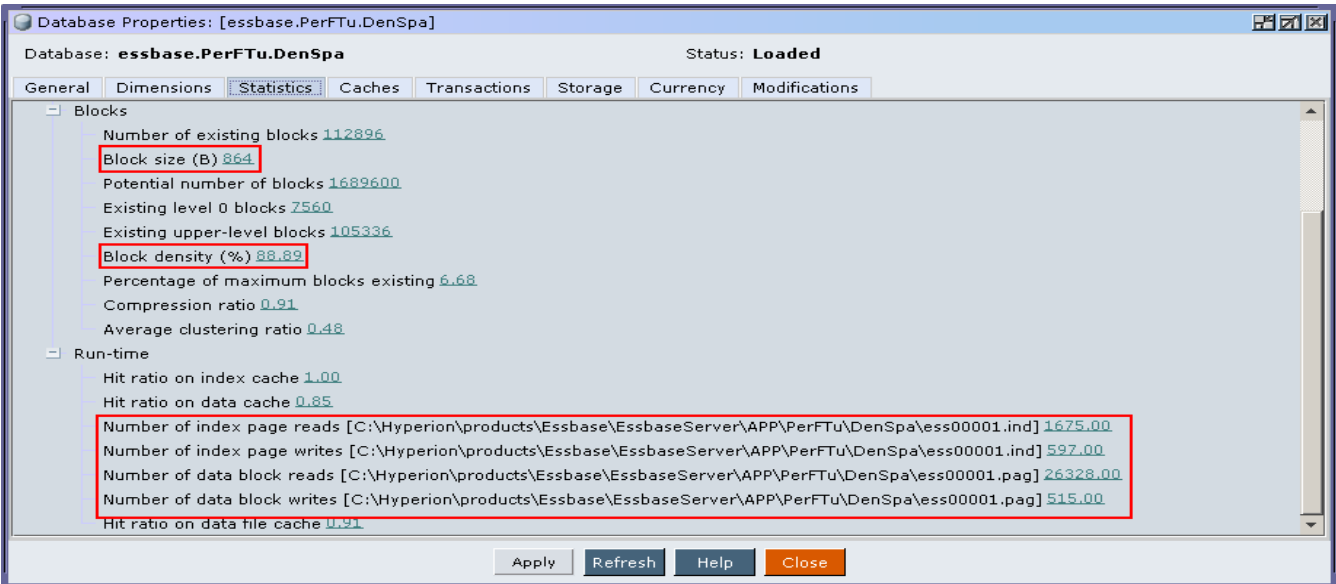
[Wed May 04 11:13:31 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [7560]. Elapsed time: [3.219].
[Wed May 04 11:13:31 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [3.219].
[Wed May 04 11:13:31 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Case when: Exporting all cube data with column format into text file.



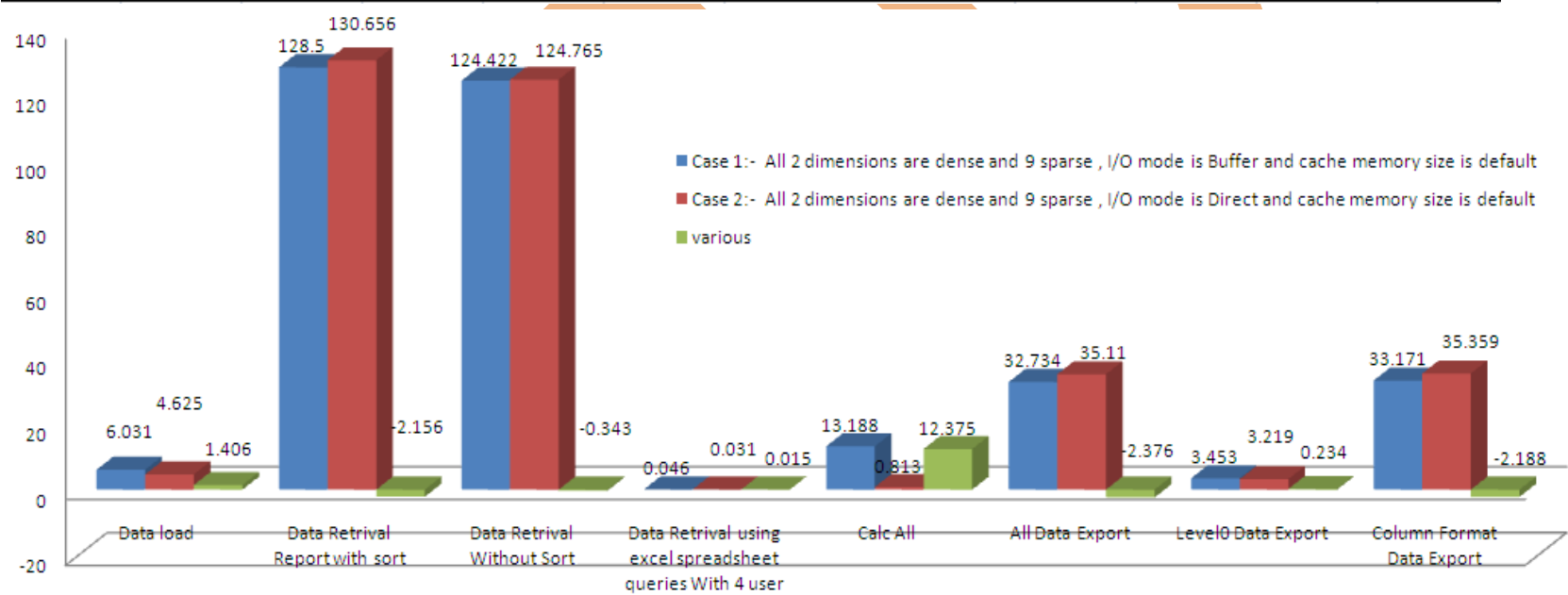
[Wed May 04 11:15:10 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [35.359].
[Wed May 04 11:15:10 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [35.359].
[Wed May 04 11:15:10 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Statistic after data load



Comparison of both cases

| | Data load | Data Retrieval Report | Data Retrieval Without | Data Retrieval using excel spreadsheet queries With 4 user | Calc All | All Data Export | Level0 Data Export | Column Format Data |
|--|-----------|-----------------------|------------------------|--|----------|-----------------|--------------------|--------------------|
| Case 1:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and cache memory size is default | 6.031 | 128.5 | 124.422 | 0.046 | 13.188 | 32.734 | 3.453 | 33.171 |
| Case 2:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and cache memory size is default | 4.625 | 130.656 | 124.765 | 0.031 | 0.813 | 35.11 | 3.219 | 35.359 |
| various | 1.406 | -2.156 | -0.343 | 0.015 | 12.375 | -2.376 | 0.234 | -2.188 |

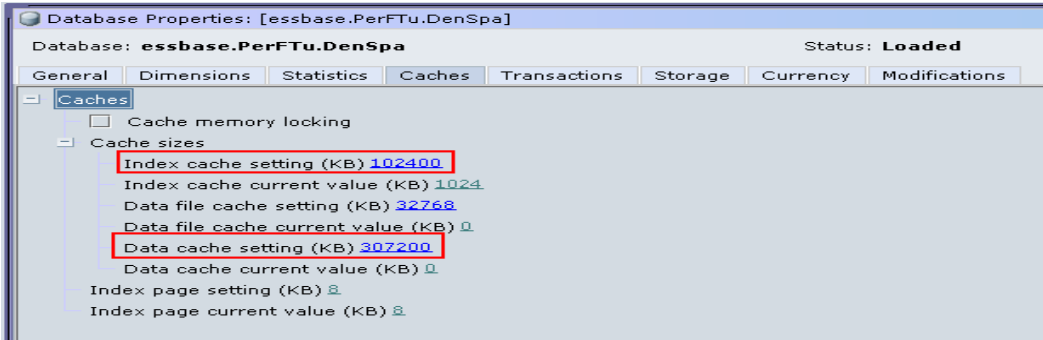


Case 3:- A cube with 2 dense and 1 sparse dimensions. Index cache, data cache memory size is 100 time from default. Input output mode is buffer.

Case statistic

| Performance Tuning | Data load | Data Retrieval | | | Calculati on | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|---|---------------------|----------------|--------------|---|--------------|-------------|----------|------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | | Calc All | All | Level0 | Column Format | | | | | Buffer Size | Sort Buffer Size |
| Case 3:- All 2dimensions are dense and 9 sparse , I/O mode is Buffer and Index and data cache memory size is 100 times from default | 3.625Sec/ 20MB file | 133.64 Sec | 129.515 Sec | 0.063Sec | 0.594Sec | 28.50 Sec | 1.984Sec | 28.797 Sec | Before Data Load | 0% | 864 | Null | Null | 10KB | 10KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 10KB | 10KB |

Change cache memory settings



Time to load 20MB data file in to cube.


```
[Wed May 04 11:33:42 2011]Local/PerFTu/DenSpa/admin/Info(1003037)
Data Load Updated [1.45152e+006] cells

[Wed May 04 11:33:42 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [3.625] seconds

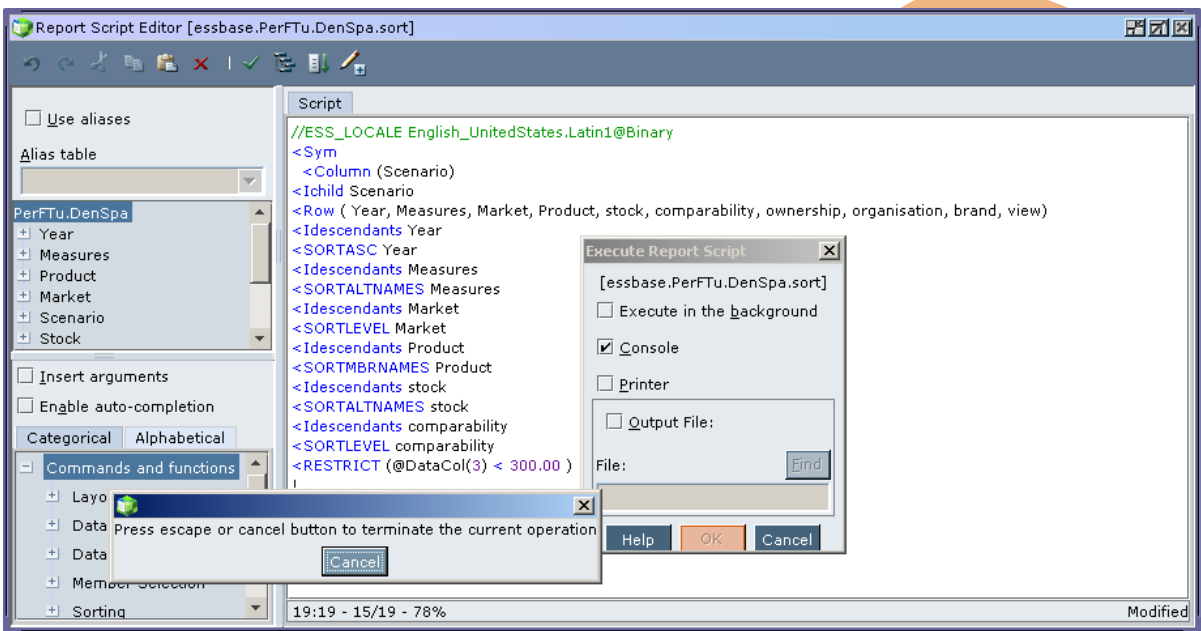
[Wed May 04 11:33:42 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]
```

Time to execute “Calc All”

```
[Wed May 04 11:38:58 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.594] seconds

[Wed May 04 11:38:58 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed
```

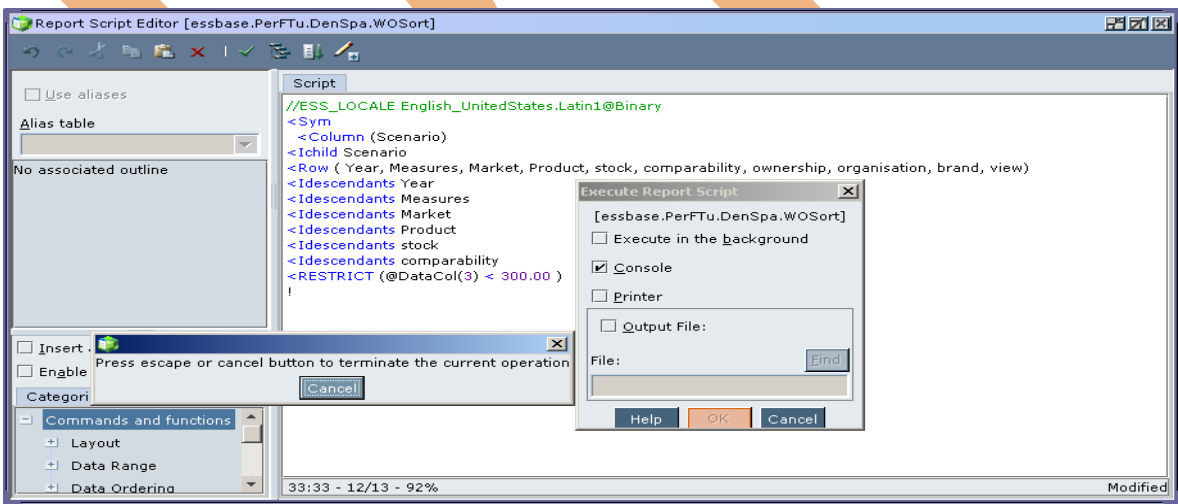
Time to execute report script with sort operation



```
[Wed May 04 12:12:57 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [133.64] seconds

[Wed May 04 12:12:57 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [6358000] non-Dyn.Calc.Cache : [0]
```

Time to execute report script without sort operation



```
[Wed May 04 12:05:38 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[Wed May 04 12:07:47 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [129.515] seconds
```

Time to retrieve data in to spread sheet, when four users are connected.

```
[Thu May 05 09:04:24 2011]Local/PerFTu///Info(1013210)
User [Mack] set active on database [DenSpa]

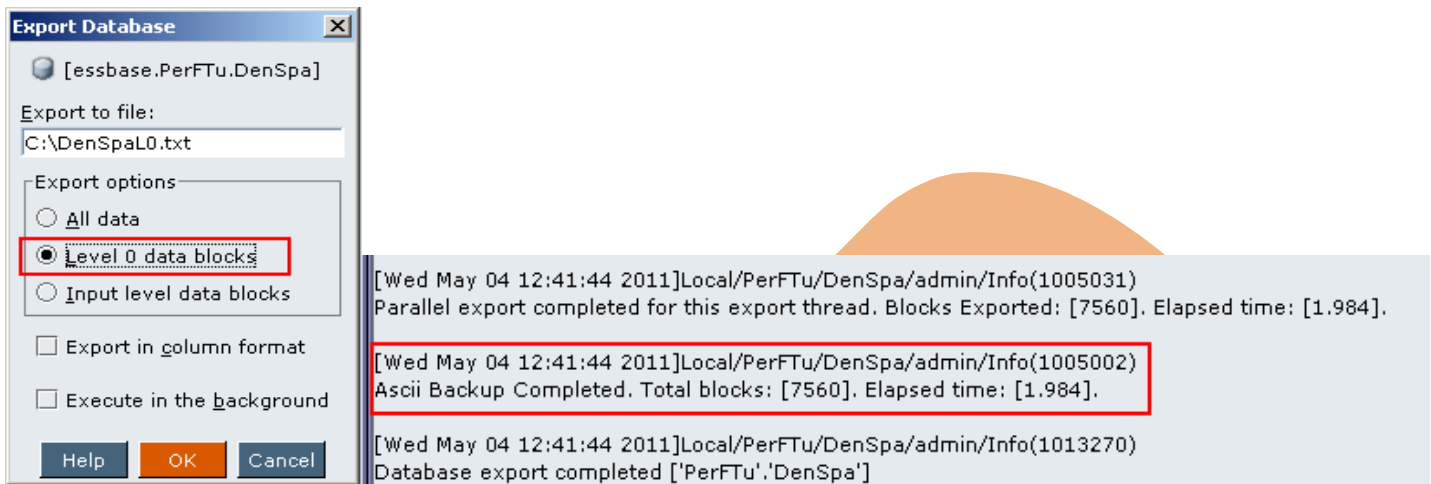
[Thu May 05 09:04:27 2011]Local/PerFTu/DenSpa/Mack/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.063] seconds

[Thu May 05 09:04:27 2011]Local/PerFTu/DenSpa/Mack/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]
```

Time to export all cube data into text file



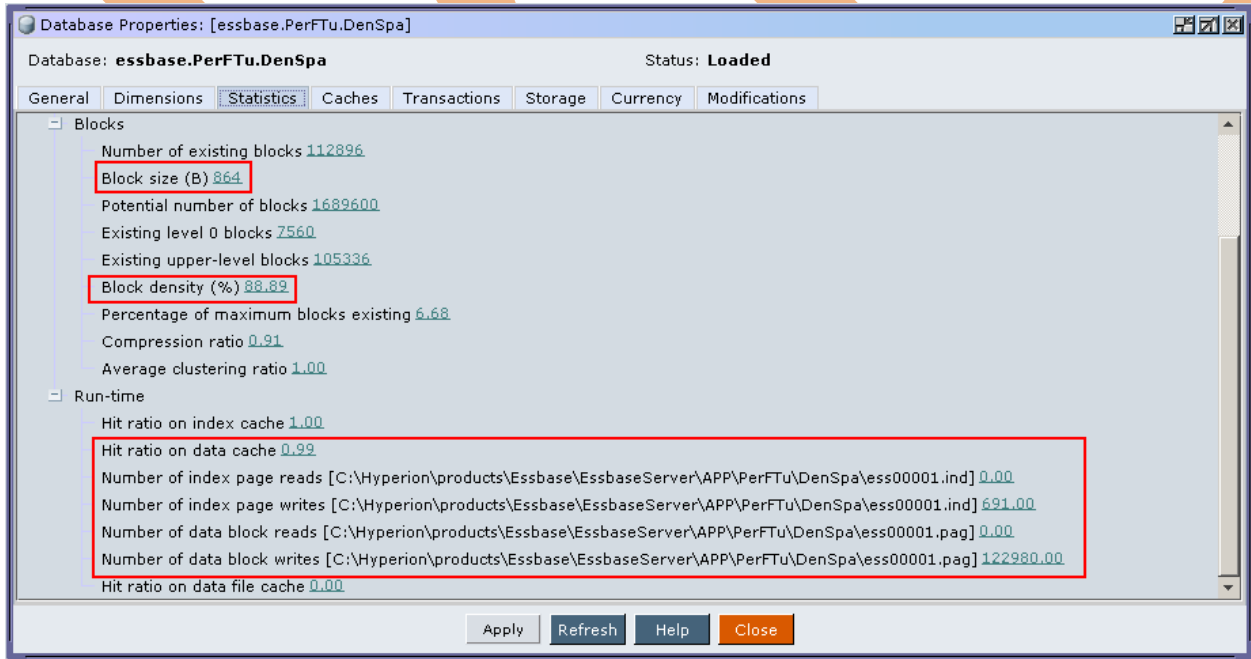
Time to export all level 0 data of cube into text file.



Time to export all cube data with column format into text file.



Statistic after data load

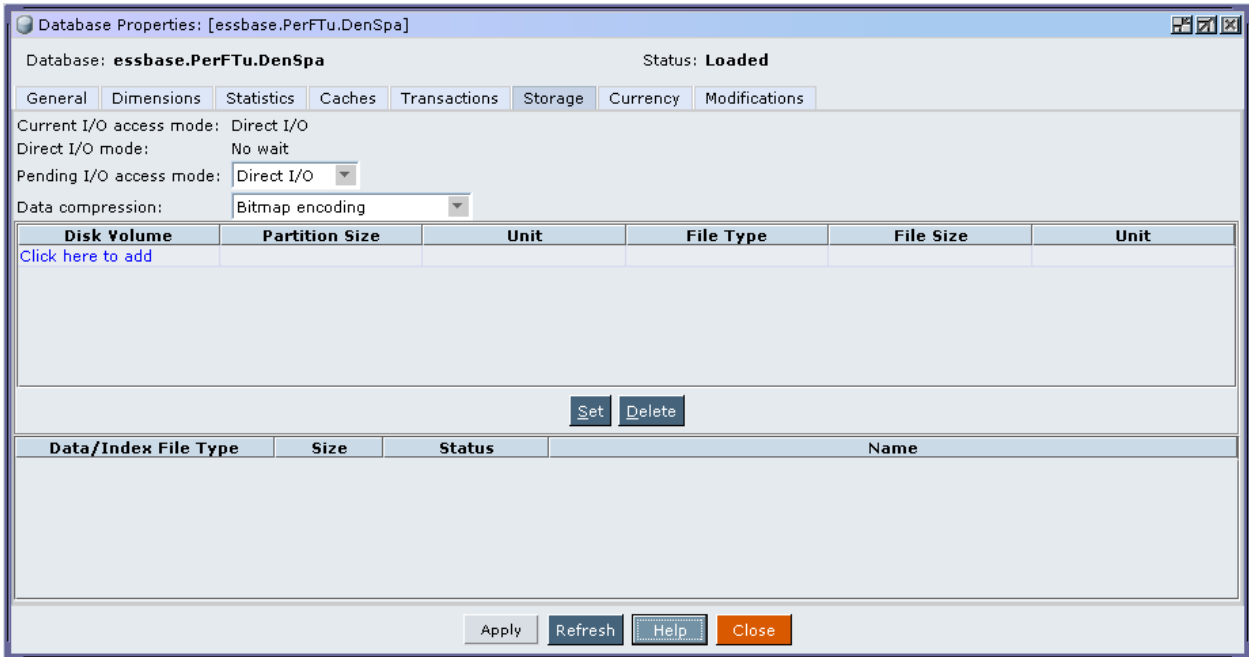


Case 4:- A cube with 2 dense and 1 sparse dimensions. Index and data cache memory size is 100 times from default. Where input output mode is direct.

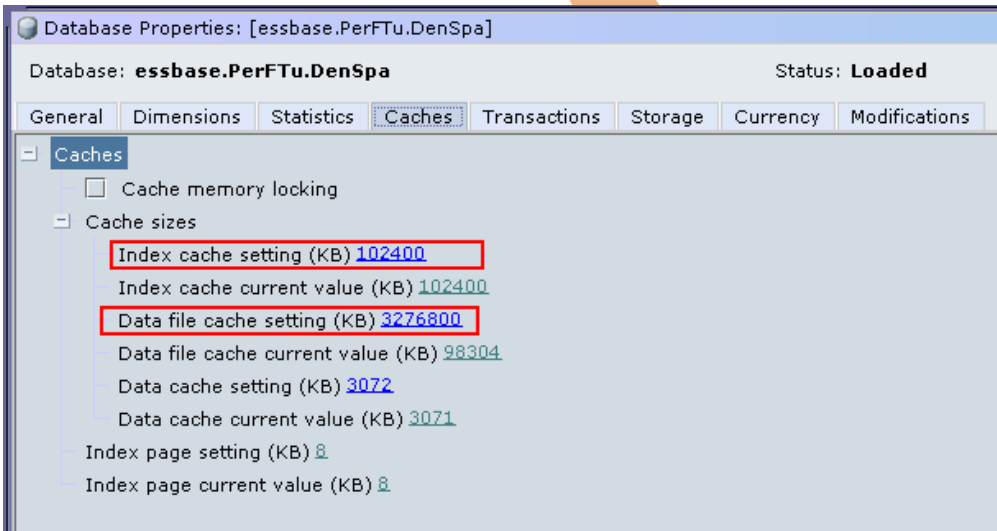
Case statistic

| Performance Tuning | Data load | Data Retrieval | | | Calculation | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|---|--------------------------|----------------|--------------|---|-------------|-------------|--------|---------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | CalcAll | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 4:- All 2 dimensions are dense and 9 sparse, I/O mode is Direct and Index and data cache memory size is 100 times from default | 3265Sec / 20MB data file | | | | | | | | Before Data Load | 0% | 864 | Null | Null | 10KB | 10KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 10KB | 10KB |

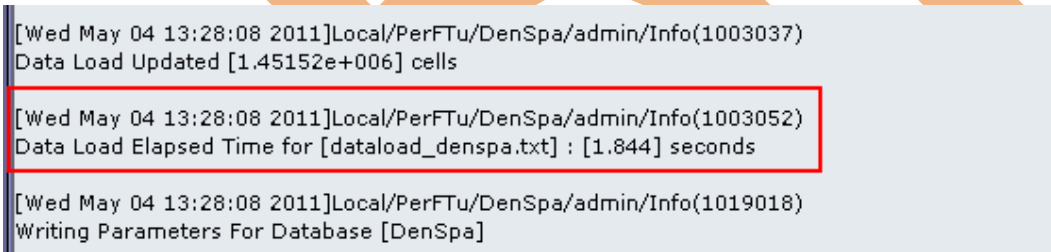
Change input output mode from buffer to direct



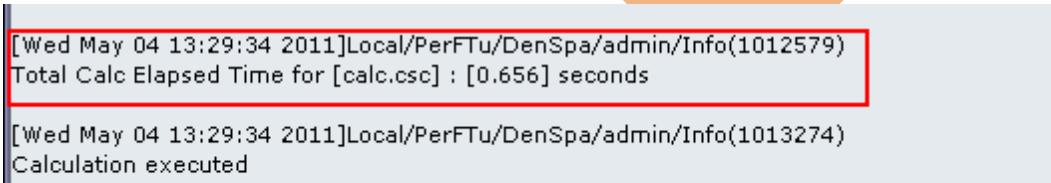
Increase index and data cache memory settings up to 100times from default and apply the changes.



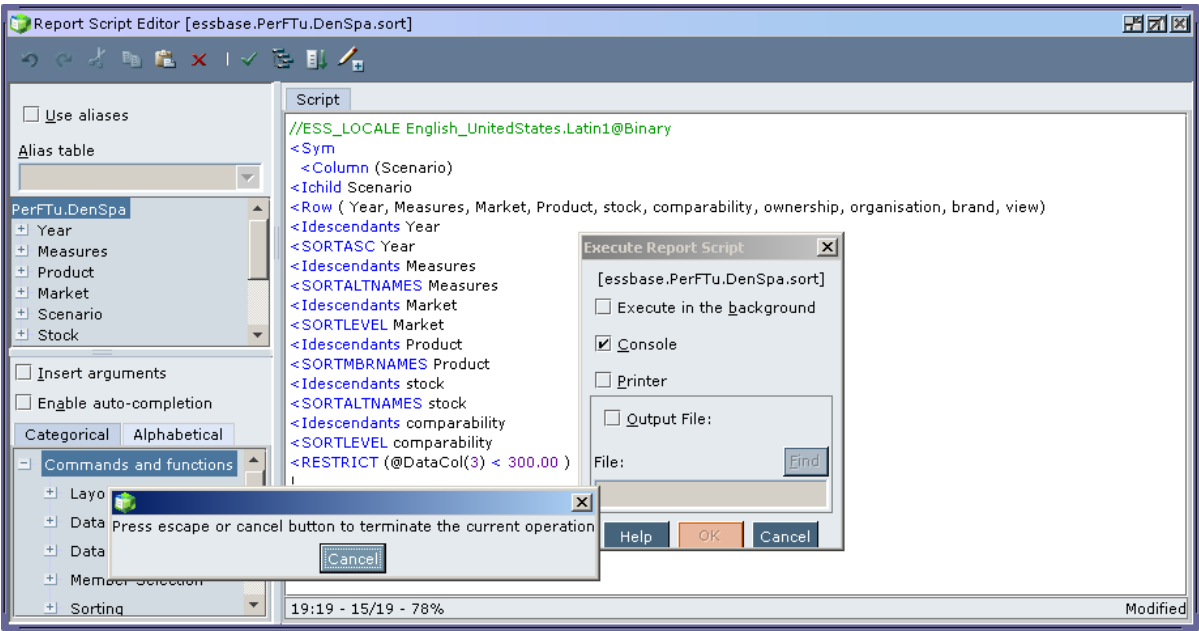
Time to load 20MB data file in to cube.



Time to execute “Calc All”

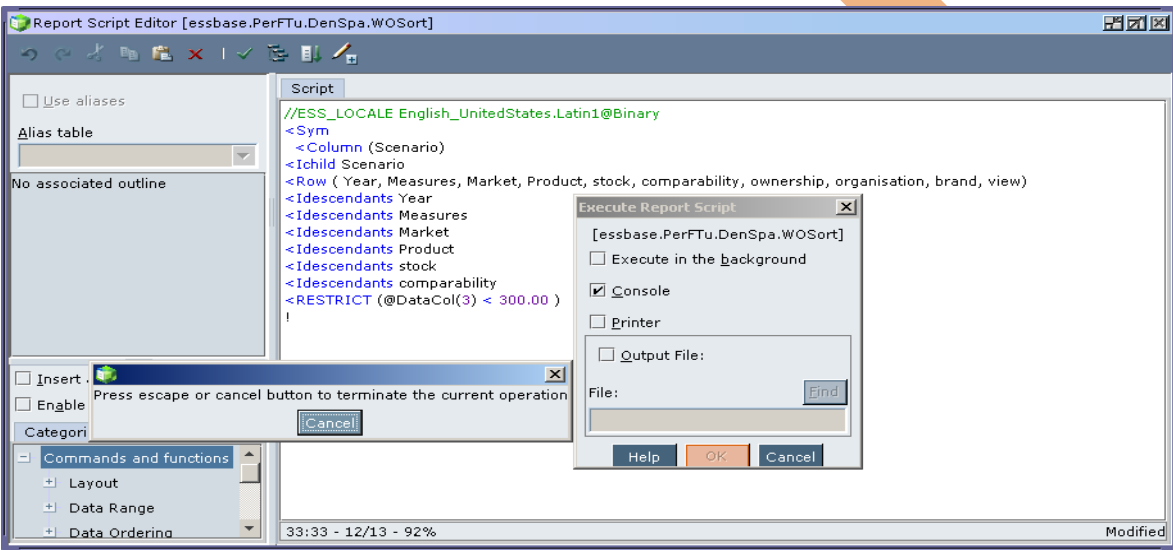


Time to execute report script with sort operation



[Wed May 04 13:30:28 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [sort.rep]
[Wed May 04 13:32:54 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [146.14] seconds
[Wed May 04 13:32:54 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [6358000] non-Dyn.Calc.Cache : [0]

Time to execute report script without sort operation

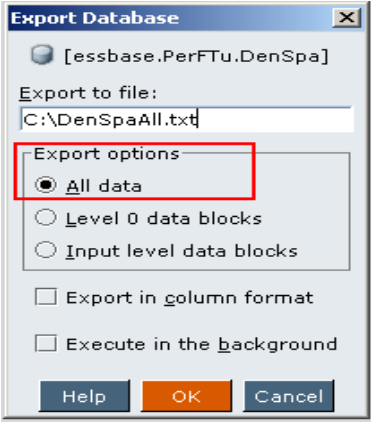


[Wed May 04 13:33:26 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]
[Wed May 04 13:35:33 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [126.765] seconds
[Wed May 04 13:35:33 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [6358000] non-Dyn.Calc.Cache : [0]

Time to retrieve data in to spread sheet, when four users are connected.

[Thu May 05 08:45:10 2011]Local/PerFTu/DenSpa/Mack/Info(1013091)
Received Command [GetDimInfo] from user [Mack]
[Thu May 05 08:45:12 2011]Local/PerFTu/DenSpa/Mack/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.172] seconds
[Thu May 05 08:45:12 2011]Local/PerFTu/DenSpa/Mack/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [0] non-Dyn.Calc.Cache : [0]

Time to export all cube data into text file



[Wed May 04 13:38:14 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [29.344].
[Wed May 04 13:38:14 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [29.344].
[Wed May 04 13:38:14 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Time to export all level 0 data of cube into text file.

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaL0.txt

Export options

☒ Level 0 data blocks

☐ All data

☐ Input level data blocks

☐ Export in column format

☐ Execute in the background

Help

OK

Cancel

[Wed May 04 13:39:49 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [7560]. Elapsed time: [2.046].

[Wed May 04 13:39:49 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [2.046].

[Wed May 04 13:39:49 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Time to export all cube data with column format into text file.

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaCL.txt

Export options

☒ All data

☐ Level 0 data blocks

☐ Input level data blocks

☒ Export in column format

☐ Execute in the background

Help

OK

Cancel

[Wed May 04 13:39:30 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [29.469].

[Wed May 04 13:39:30 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [29.469].

Statistic after data load

Database Properties: [essbase.PerFTu.DenSpa]

Database: **essbase.PerFTu.DenSpa** Status: **Loaded**

General Dimensions **Statistics** Caches Transactions Storage Currency Modifications

Blocks

Number of existing blocks 112896

Block size (B) 864

Potential number of blocks 1689600

Existing level 0 blocks 7560

Existing upper-level blocks 105336

Block density (%) 88.89

Percentage of maximum blocks existing 6.68

Compression ratio 0.91

Average clustering ratio 0.47

Run-time

Hit ratio on index cache 1.00

Hit ratio on data cache 0.97

Number of index page reads [C:\Hyperion\products\Essbase\EssbaseServer\APP\PerFTu\DenSpa\ess00001.ind] 0.00

Number of index page writes [C:\Hyperion\products\Essbase\EssbaseServer\APP\PerFTu\DenSpa\ess00001.ind] 598.00

Number of data block reads [C:\Hyperion\products\Essbase\EssbaseServer\APP\PerFTu\DenSpa\ess00001.pag] 488.00

Number of data block writes [C:\Hyperion\products\Essbase\EssbaseServer\APP\PerFTu\DenSpa\ess00001.pag] 365.00

Hit ratio on data file cache 0.91

Apply

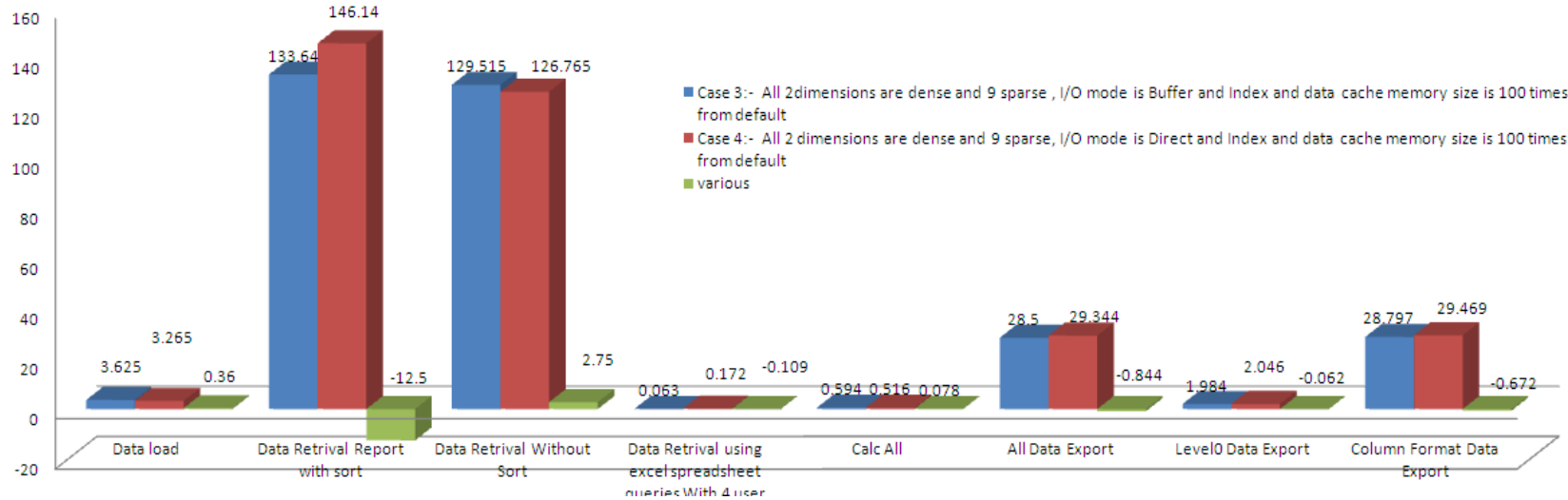
Refresh

Help

Close

Comparison

| | Data load | Data Retrieval Report | Data Retrieval Without Sort | Data Retrieval using excel spreadsheet queries With 4 user | Calc All | All Data Export | Level0 Data Export | Column Format Data |
|---|-----------|-----------------------|-----------------------------|--|----------|-----------------|--------------------|--------------------|
| Case 3:- All 2dimensions are dense and 9 sparse , I/O mode is Buffer and Index and data cache memory size is 100 times from default | 3.625 | 133.64 | 129.515 | 0.063 | 0.594 | 28.5 | 1.984 | 28.797 |
| Case 4:- All 2 dimensions are dense and 9 sparse, I/O mode is Direct and Index and data cache memory size is 100 times from default | 3.265 | 146.14 | 126.765 | 0.172 | 0.516 | 29.344 | 2.046 | 29.469 |
| various | 0.36 | -12.5 | 2.75 | -0.109 | 0.078 | -0.844 | -0.062 | -0.672 |



Case 5:- A cube with 2 dense and 9 sparse dimension. Data retrieval buffer size is 100times from default. Where input output mode is buffer.

| Performance Tuning | Data load | Data Retrieval | | | Calculati on | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|--|--------------------------|----------------|--------------|---|--------------|-------------|----------|---------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | CalcAll | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 5:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and sort buffer memory size is 100times as default | 3.39Sec / 20MB Data File | | | | | | | | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | | 123.187Sec | 96.281Sec | 0.016Sec | 0718Sec | 29.047Sec | 2.047Sec | 29.516Sec | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |

Change data retrieval buffer size and click on apply.

Database Properties: [essbase.PerFTu.DenSpa]

Database: **essbase.PerFTu.DenSpa** Status: **Loaded**

General Dimensions Statistics Caches Transactions Storage Currency Modifications

General

Description [Click here to edit](#)

Database type [Normal](#)

Startup

☒ Allow users to start database

☒ Start database when application starts

Calculation

☐ Aggregate missing values

☐ Create blocks on equations

☒ Two-Pass calculation

Minimum access level [None](#)

Data retrieval buffers

Buffer size (KB) [1000](#)

Sort buffer size (KB) [1000](#)

Apply Refresh Help Close

Time to load 20MB data file in to cube.

```
[Wed May 04 13:52:07 2011]Local/PerFTu/DenSpa/admin/Info(1003037)
Data Load Updated [1.45152e+006] cells

[Wed May 04 13:52:07 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [3.39] seconds

[Wed May 04 13:52:07 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]
```

Time to execute “Calc All”

```
[Wed May 04 14:07:58 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.718] seconds

[Wed May 04 14:07:58 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed
```

Time to execute report script with sort operation

Report Script Editor [essbase.PerFTu.DenSpa.sort]

☐ Use aliases

Alias table

PerFTu.DenSpa

Year

Measures

Product

Market

Scenario

Stock

☐ Insert arguments

☐ Enable auto-completion

Categorical Alphabetical

Commands and functions

Layout

Data

Data

Data

Member Selection

Sorting

Script

//ESS_LOCALE English_UnitedStates.Latin1@Binary

<Sym

<Column (Scenario)

<Ichild Scenario

<Row (Year, Measures, Market, Product, stock, comparability, ownership, organisation, brand, view)

<Idescendants Year

<SORTASC Year

<Idescendants Measures

<SORTALT NAMES Measures

<Idescendants Market

<SORTLEVEL Market

<Idescendants Product

<SORTMBR NAMES Product

<Idescendants stock

<SORTALT NAMES stock

<Idescendants comparability

<SORTLEVEL comparability

<RESTRICT (@DataCol(3) < 300.00)

Execute Report Script

[essbase.PerFTu.DenSpa.sort]

☐ Execute in the background

☒ Console

☐ Printer

☐ Output File:

File:

Find

Help OK Cancel

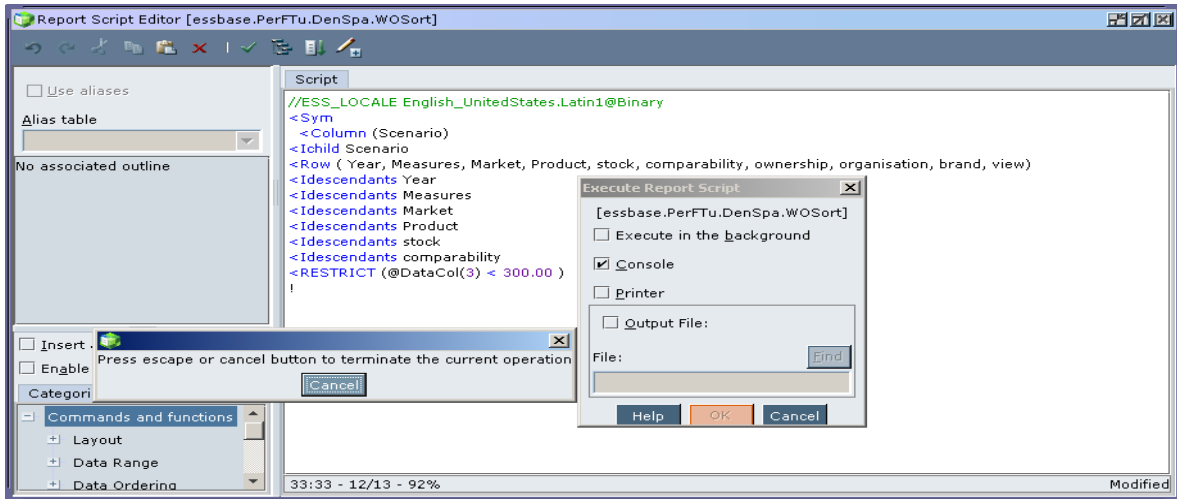
19:19 - 15/19 - 78% Modified

```
[Wed May 04 14:09:20 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [sort.rep]

[Wed May 04 14:11:24 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [123.187] seconds

[Wed May 04 14:11:24 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [1496000] non-Dyn.Calc.Cache : [0]
```

Time to execute report script without sort operation

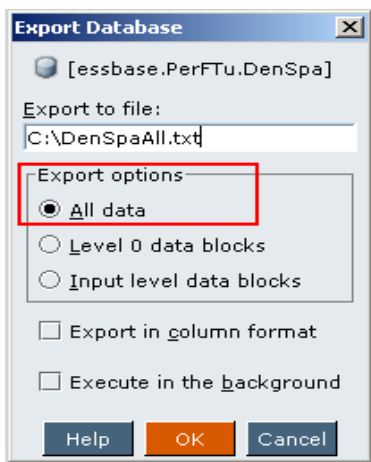


[Wed May 04 14:12:58 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]
[Wed May 04 14:14:34 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [96.281] seconds
[Wed May 04 14:14:34 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [1496000] non-Dyn.Calc.Cache : [0]

Time to retrieve data in to spread sheet, when four users are connected.

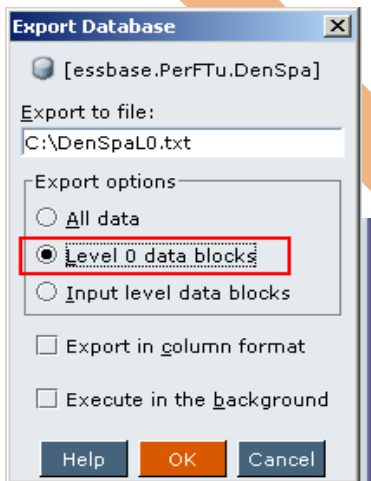
[Thu May 05 08:40:44 2011]Local/PerFTu///Info(1013205)
Received Command [Get Database File Information]
[Thu May 05 08:40:49 2011]Local/PerFTu/DenSpa/Mack/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.016] seconds
[Thu May 05 08:40:49 2011]Local/PerFTu/DenSpa/Mack/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

Time to export all cube data into text file



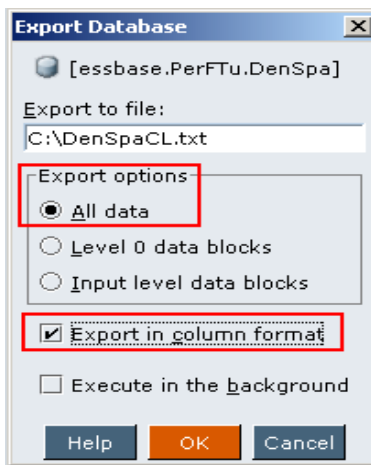
[Wed May 04 14:21:33 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [29.047].
[Wed May 04 14:21:33 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [29.047].
[Wed May 04 14:21:33 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Time to export all level 0 data of cube into text file.



[Wed May 04 14:22:00 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [7560]. Elapsed time: [2.047].
[Wed May 04 14:22:00 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [2.047].
[Wed May 04 14:22:00 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Time to export all cube data with column format into text file.



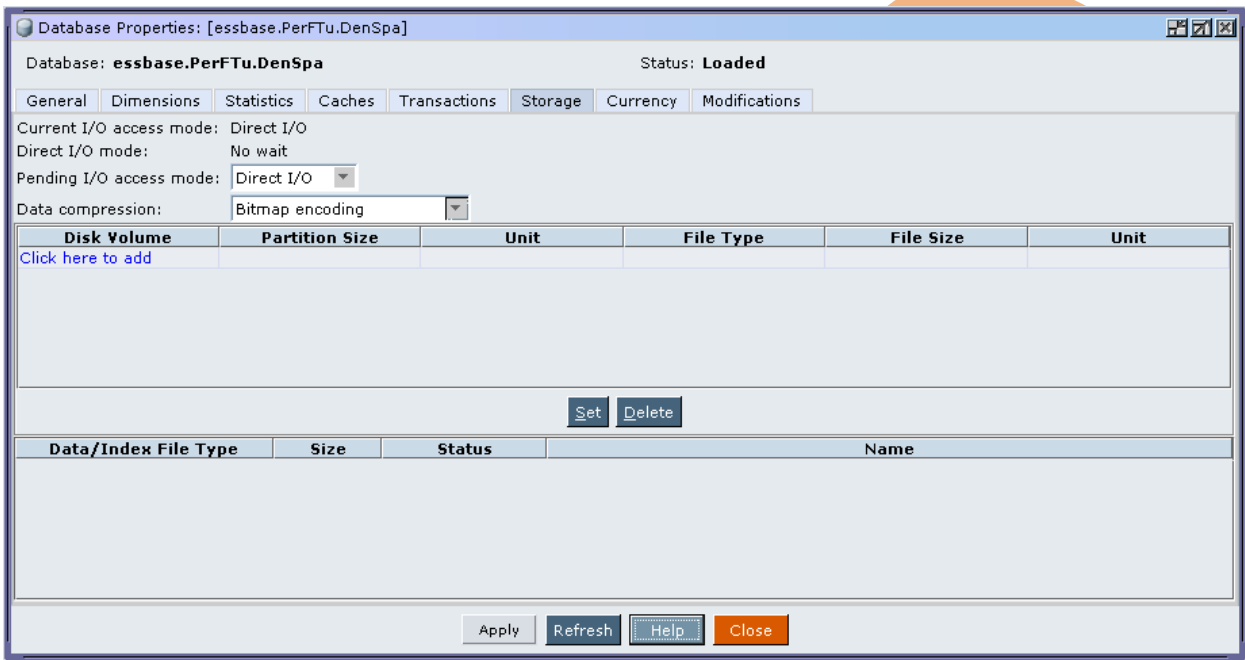
[Wed May 04 14:22:44 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [29.516].
[Wed May 04 14:22:44 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Case 6:- A cube with 2 dense and 1sparse dimension. Data retrieval buffer size is 100times from default. Where input output mode is direct.

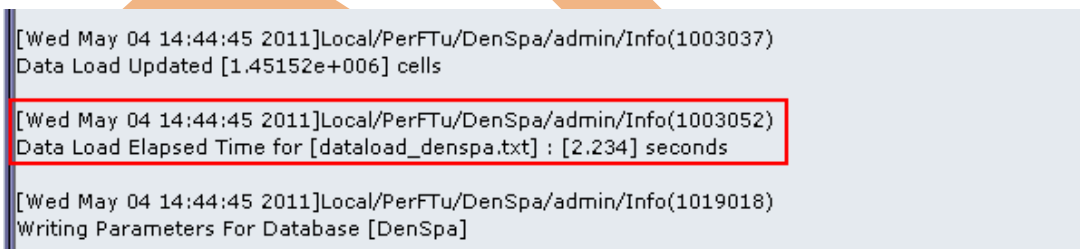
Case statistics

| Performance Tuning | Data load | Data Retrieval | | | Calculati on | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|--|-----------------------------|----------------|--------------|---|--------------|-------------|--------|---------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | CalcAll | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 6:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and sort buffer memory size is 100times as default | 2.234S ec 20MB Data File | 87.938 Sec | 90.563S ec | 0.032Sec | 0.906Sec | 35.328 Sec | 3Sec | 35.39S ec | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |

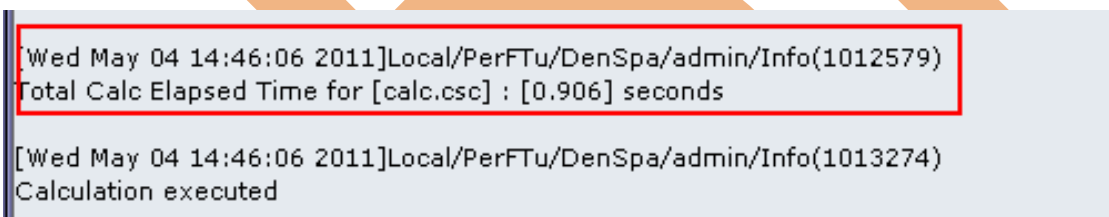
Change input output mode from buffer to direct



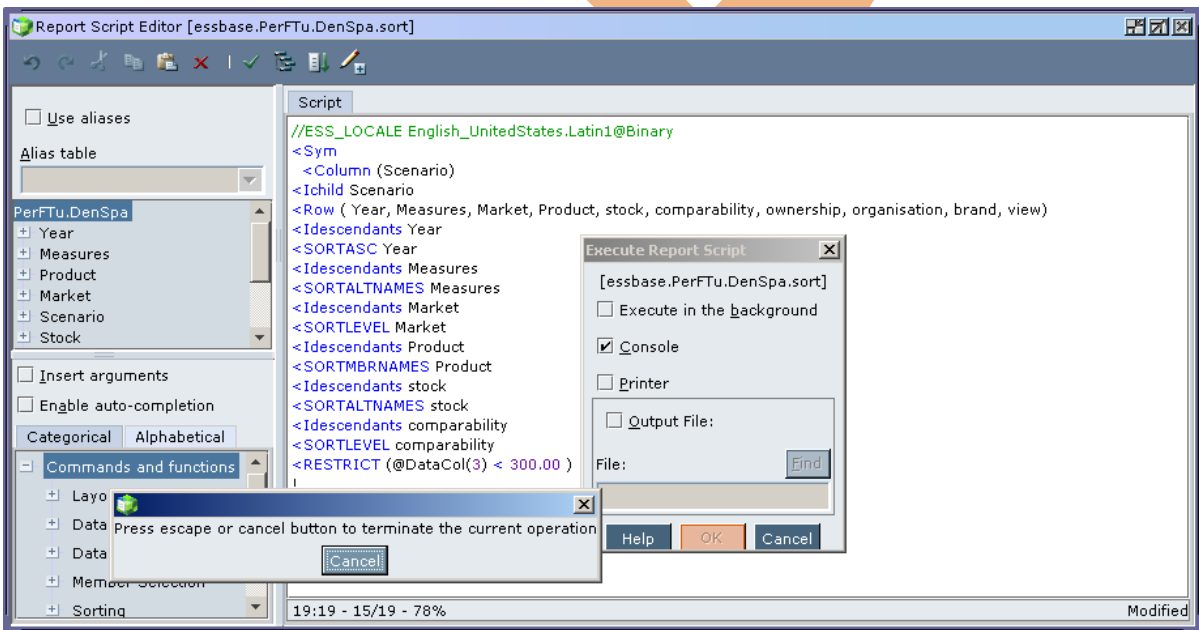
Time to load 20MB data file in to cube.



Time to execute “Calc All”



Time to execute report script with sort operation

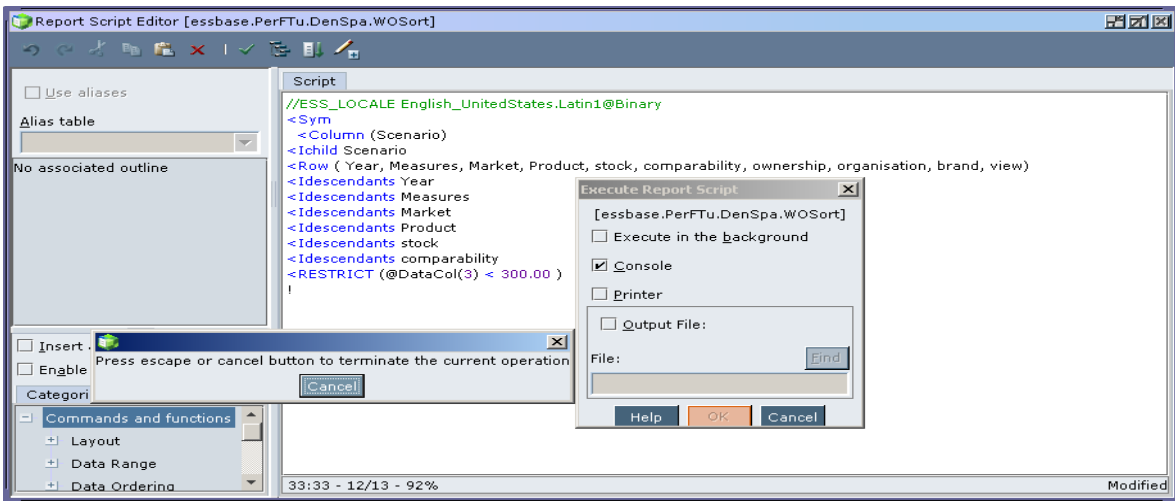


[Wed May 04 14:47:43 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [sort.rep]

[Wed May 04 14:49:13 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [90.563] seconds

[Wed May 04 14:49:13 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [1496000] non-Dyn.Calc.Cache : [0]

Time to execute report script without sort operation



[Wed May 04 14:50:30 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[Wed May 04 14:51:58 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [87.938] seconds

[Wed May 04 14:51:58 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [1496000] non-Dyn.Calc.Cache : [0]

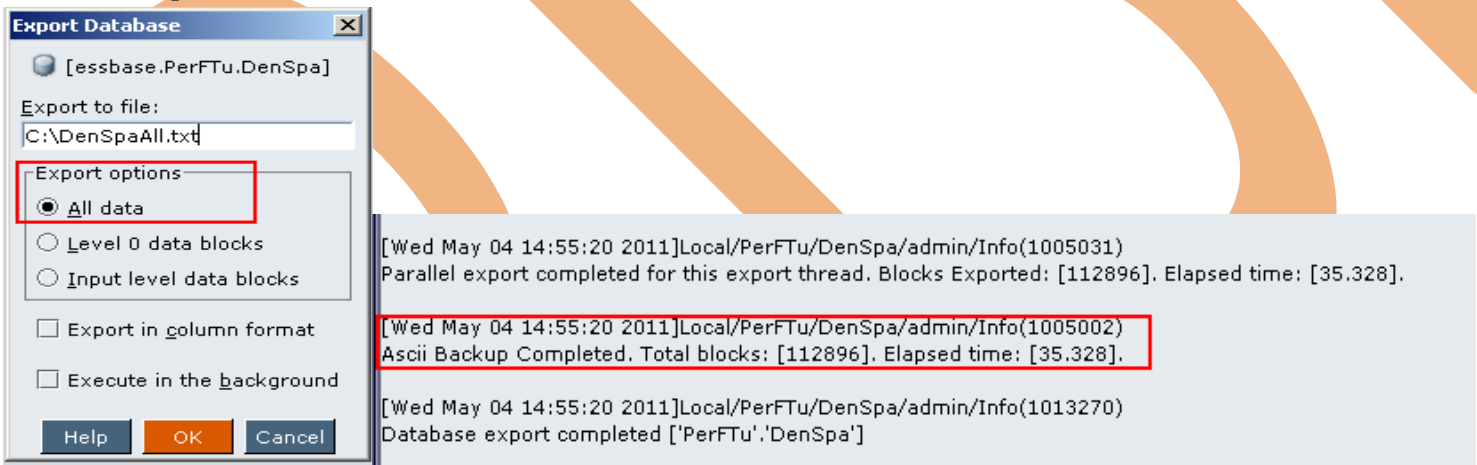
Time to retrieve data in to spread sheet, when four users are connected.

[Thu May 05 08:36:59 2011]Local/PerFTu///Info(1013210)
User [Mack] set active on database [DenSpa]

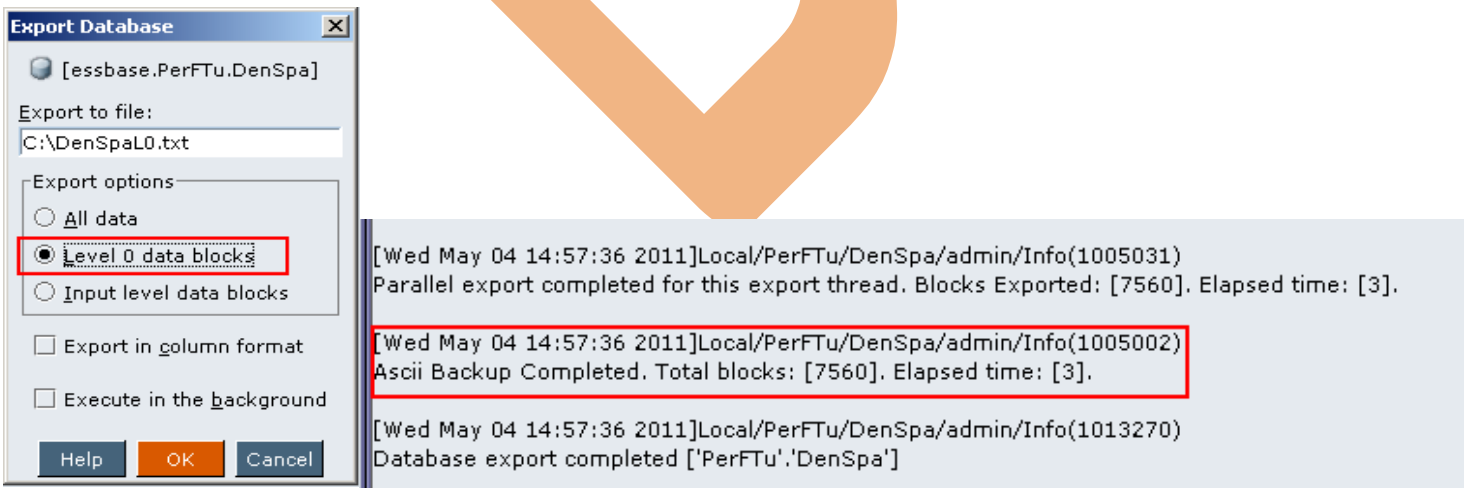
[Thu May 05 08:37:00 2011]Local/PerFTu/DenSpa/Mack/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.032] seconds

[Thu May 05 08:37:00 2011]Local/PerFTu/DenSpa/Mack/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

Time to export all cube data into text file



Time to export all level 0 data of cube into text file.



Time to export all cube data with column format into text file.

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaCL.txt

Export options

All data

Level 0 data blocks

Input level data blocks

Export in column format

Execute in the background

Help

OK

Cancel

[Wed May 04 14:59:13 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [35.39].

[Wed May 04 14:59:13 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [35.39].

[Wed May 04 14:59:13 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Statistic after data load

Database Properties: [essbase.PerFTu.DenSpa]

Database: **essbase.PerFTu.DenSpa** Status: **Loaded**

General

Dimensions

Statistics

Caches

Transactions

Storage

Currency

Modifications

Blocks

Number of existing blocks 112896

Block size (B) 864

Potential number of blocks 1689600

Existing level 0 blocks 7560

Existing upper-level blocks 105336

Block density (%) 88.89

Percentage of maximum blocks existing 6.68

Compression ratio 0.91

Average clustering ratio 0.45

Run-time

Hit ratio on index cache 1.00

Hit ratio on data cache 0.71

Number of index page reads [C:\Hyperion\products\Essbase\EssbaseServer\APP\PerFTu\DenSpa\ess00001.ind] 2207.00

Number of index page writes [C:\Hyperion\products\Essbase\EssbaseServer\APP\PerFTu\DenSpa\ess00001.ind] 598.00

Number of data block reads [C:\Hyperion\products\Essbase\EssbaseServer\APP\PerFTu\DenSpa\ess00001.pag] 26536.00

Number of data block writes [C:\Hyperion\products\Essbase\EssbaseServer\APP\PerFTu\DenSpa\ess00001.pag] 600.00

Hit ratio on data file cache 0.91

Apply

Refresh

Help

Close

Comparison

| | Data load | Data Retrieval Report | Data Retrieval Without | Data Retrieval using excel spreadsheet queries With 4 user | Calc All | All Data Export | Level0 Data Export | Column Format Data |
|--|-----------|-----------------------|------------------------|--|----------|-----------------|--------------------|--------------------|
| Case 5:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and sort buffer memory size is 100times as default | 3.39 | 123.187 | 96.281 | 0.016 | 0.718 | 29.047 | 2.047 | 29.516 |
| Case 6:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and sort buffer memory size is 100times as default | 2.234 | 87.938 | 90.563 | 0.032 | 0.906 | 35.328 | 3 | 35.39 |
| various | 1.156 | 35.249 | 5.718 | -0.016 | -0.188 | -6.281 | -0.953 | -5.874 |

The bar chart compares performance metrics for Case 5 (blue bars) and Case 6 (red bars) across various operations. The Y-axis represents time in seconds, ranging from -20 to 140. The X-axis lists the operations: Data-load, Data Retrieval Report with sort, Data Retrieval Without Sort, Data Retrieval using excel spreadsheet queries With 4 user, Calc All, All Data Export, Level0 Data Export, and Column-Format Data Export. Case 5 generally shows higher values for most operations except for 'Data-load' and 'Data Retrieval using excel spreadsheet queries With 4 user' where Case 6 is slightly higher. The 'various' row shows negative values for all operations.

| Operation | Case 5 | Case 6 |
|--|---------|--------|
| Data-load | 3.39 | 2.234 |
| Data Retrieval Report with sort | 123.187 | 87.938 |
| Data Retrieval Without Sort | 96.281 | 90.563 |
| Data Retrieval using excel spreadsheet queries With 4 user | 0.016 | 0.032 |
| Calc All | 0.718 | 0.906 |
| All Data Export | 29.047 | 35.328 |
| Level0 Data Export | 2.047 | 3 |
| Column-Format Data Export | 29.516 | 35.39 |

Case 7:- A cube with 2 dense and 9 sparse dimension. Index cache, data cache and data retrieval buffer size is 100times from default. Where input output mode is buffer.

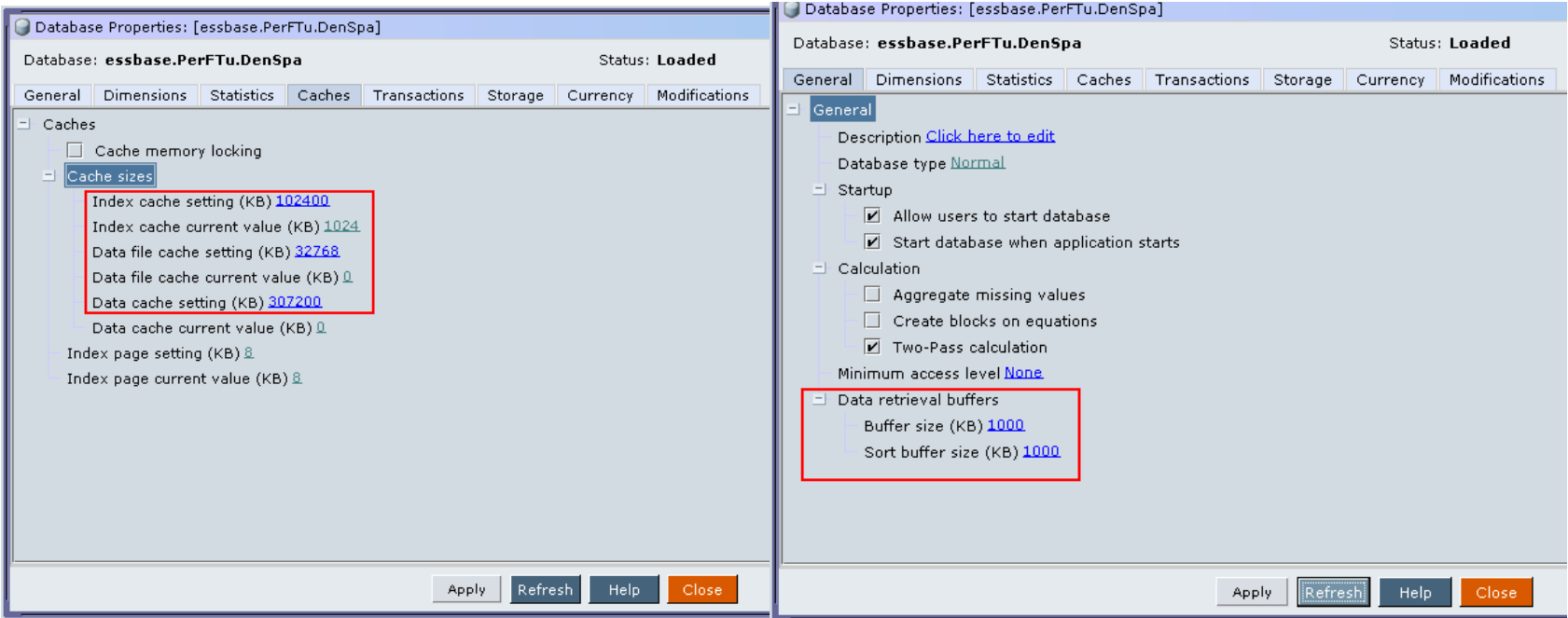
Case statistic

| Performance Tuning | Data load | Data Retrieval | | | Calculati on | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|--|---------------------------|----------------|--------------|---|--------------|-------------|--------|---------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 7:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and 100 times cache memory and buffer memory | 1.844Sec / 20MB data file | 95.078 Sec | 91.578 Sec | 0.031Sec | 0.844Sec | 35.484 Sec | 3Sec | 35.672 Sec | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |

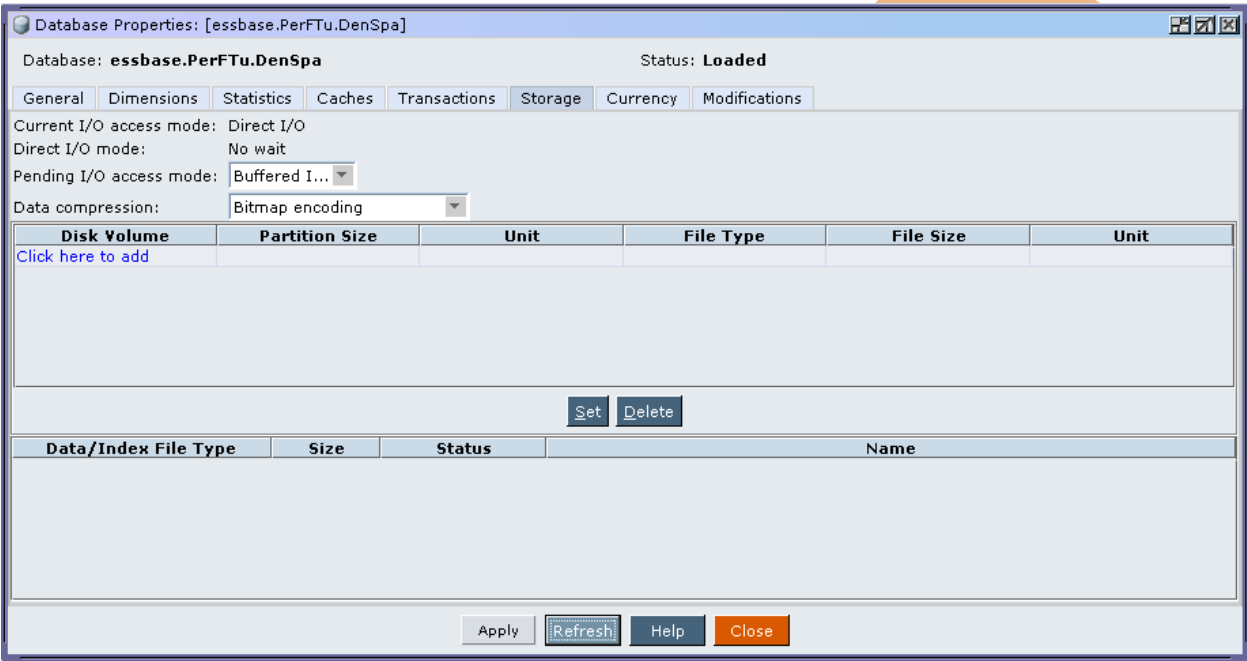
Make changes in index cache, data cache and data retrieval buffer size and click on apply.

www.hyperionguru.com

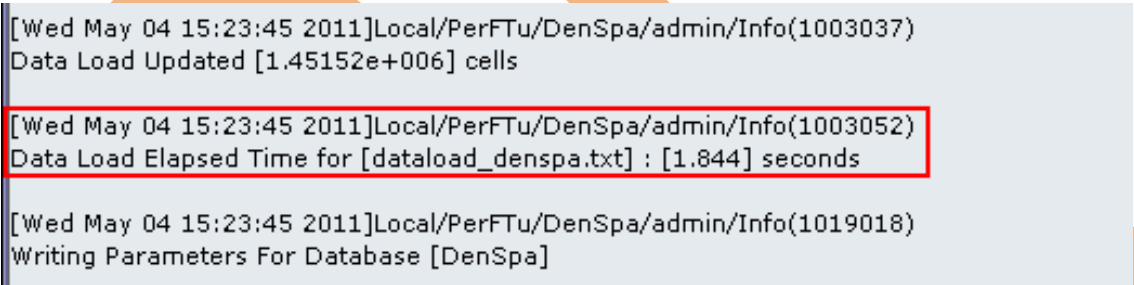
www.bisptrainings.com



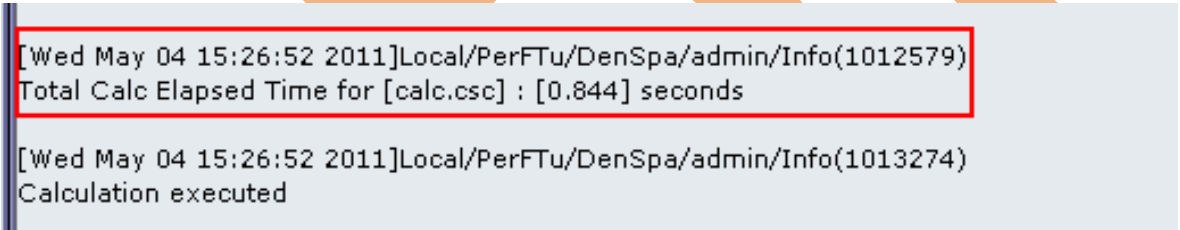
Input output memory is buffer.



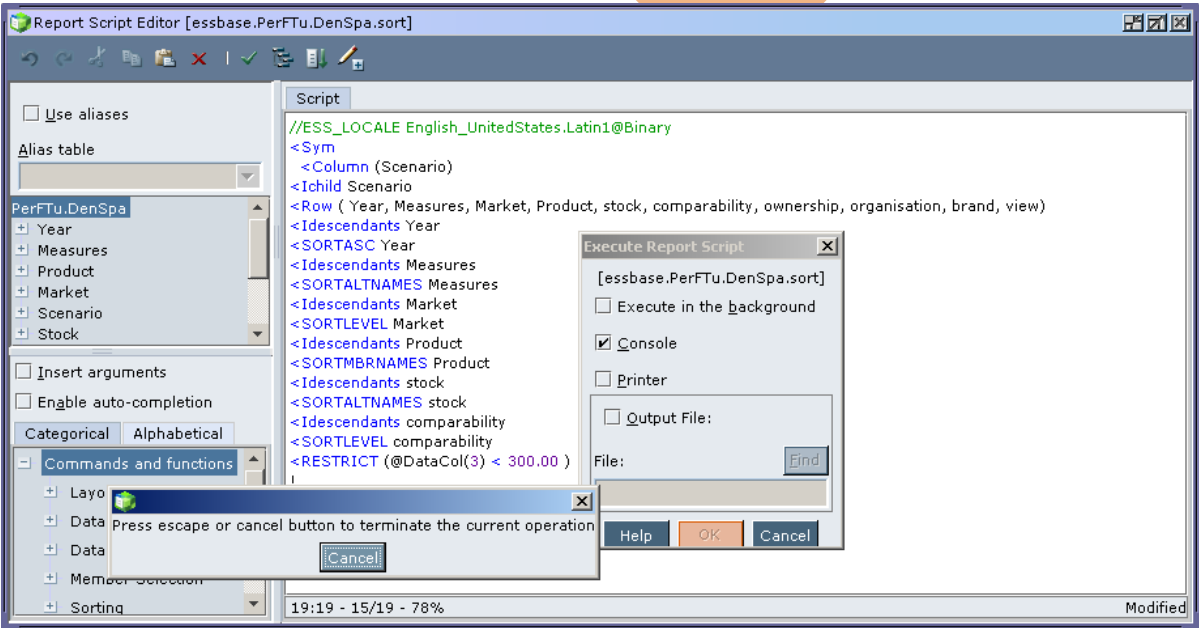
Time to load 20MB data file in to cube.



Time to execute “Calc All”



Time to execute report script with sort operation

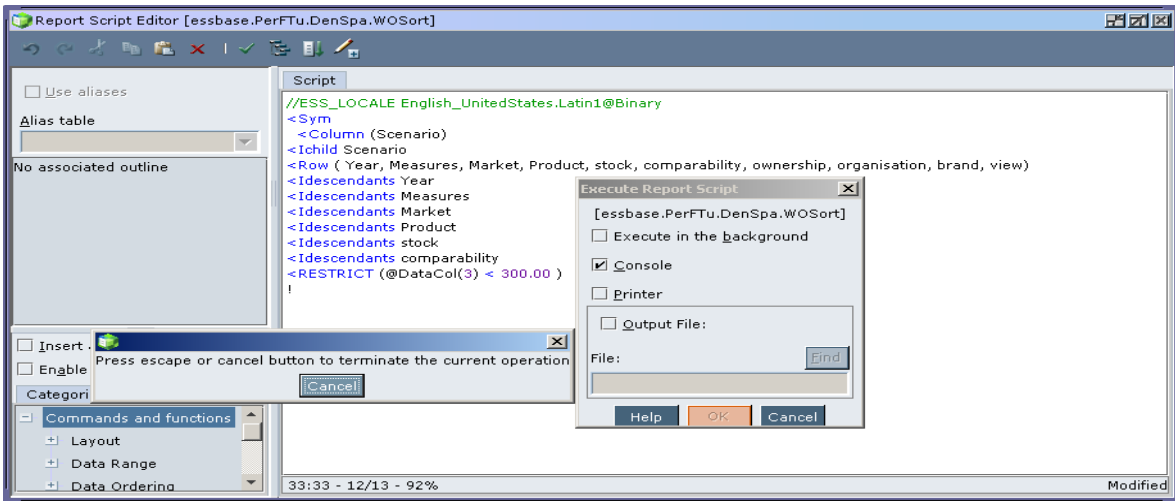


[Wed May 04 15:27:45 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [sort.rep]

[Wed May 04 15:29:20 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [95.078] seconds

[Wed May 04 15:29:20 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [1496000] non-Dyn.Calc.Cache : [0]

Time to execute report script without sort operation



[Wed May 04 15:35:24 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[Wed May 04 15:36:56 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [91.578] seconds

[Wed May 04 15:36:56 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [1496000] non-Dyn.Calc.Cache : [0]

Time to retrieve data in to spread sheet, when four users are connected.

[Thu May 05 08:34:15 2011]Local/PerFTu///Info(1013205)
Received Command [Get Database File Information]

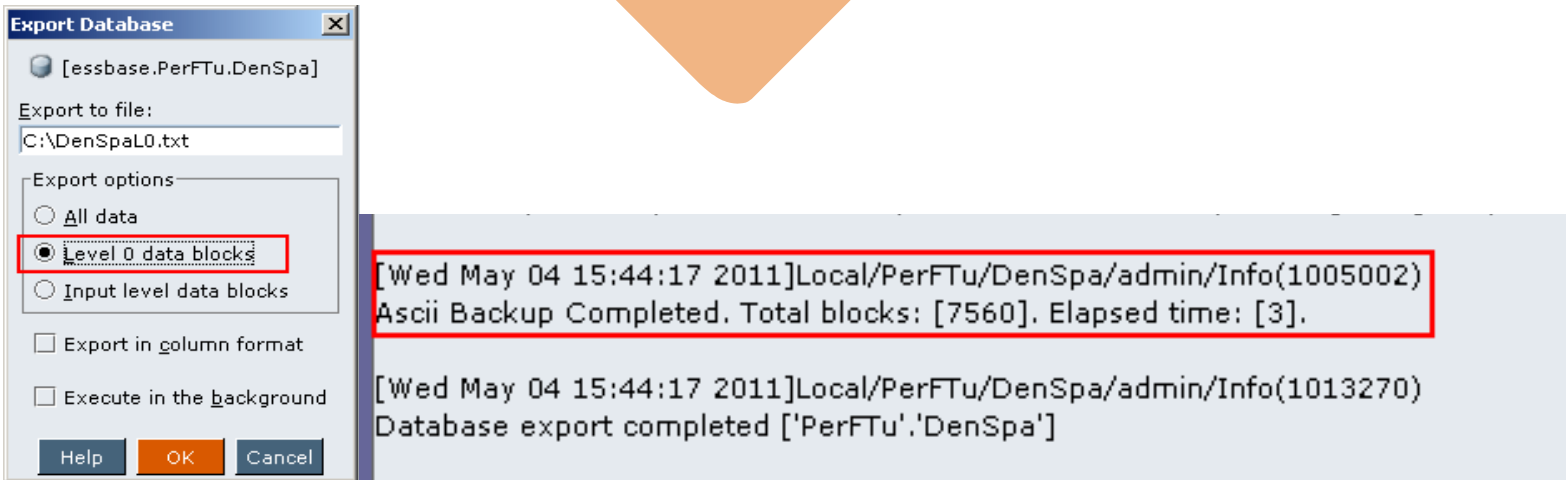
[Thu May 05 08:34:21 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.031] seconds

[Thu May 05 08:34:21 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

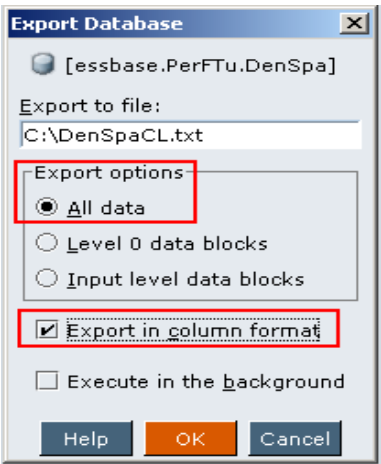
Time to export all cube data into text file



Time to export all level 0 data of cube into text file.



Time to export all cube data with column format into text file.

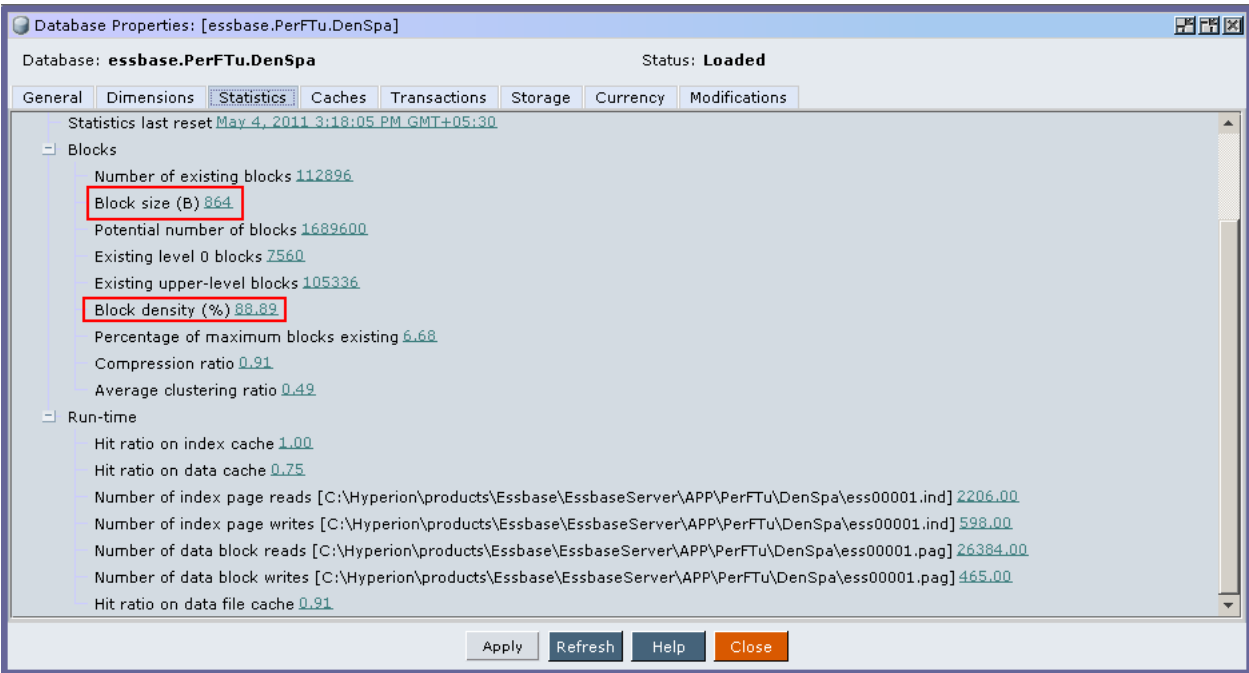


[Wed May 04 15:45:07 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [35.672].

[Wed May 04 15:45:07 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [35.672].

[Wed May 04 15:45:07 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Statistic after data load

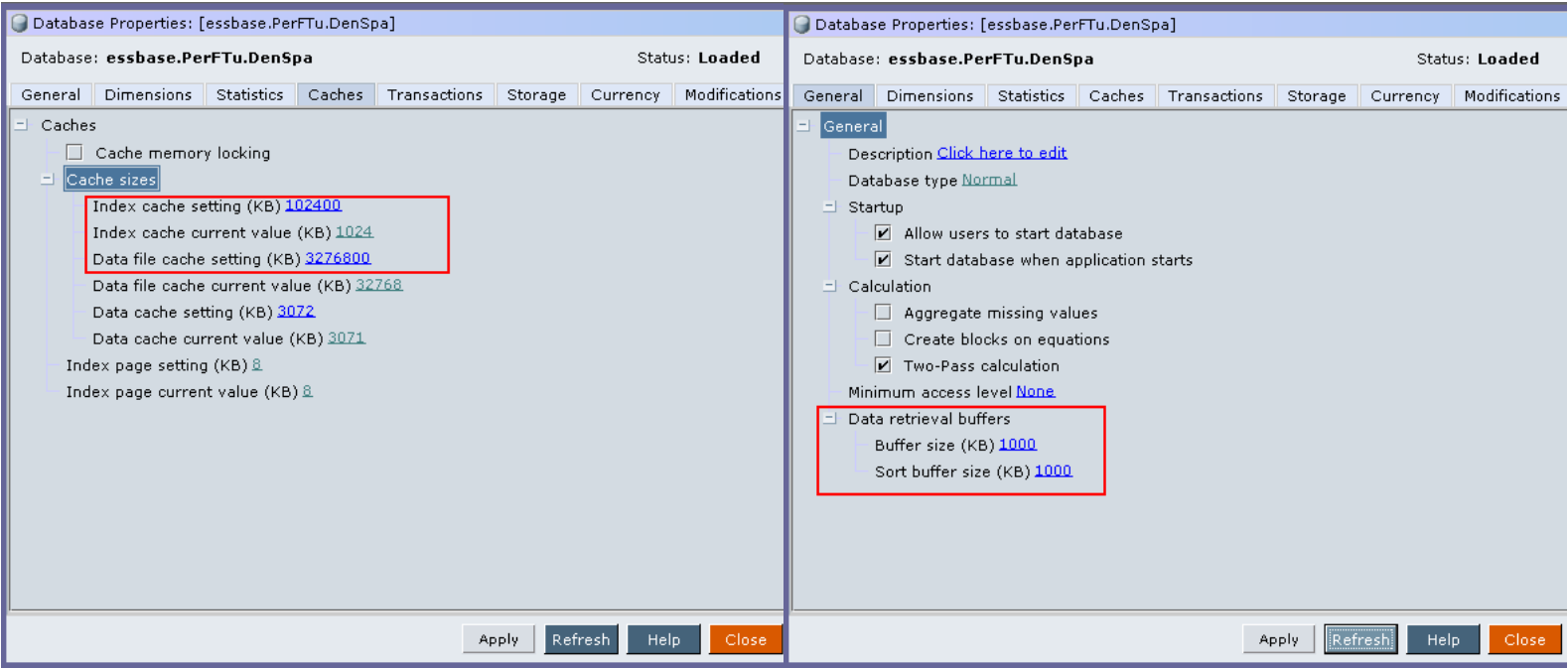


Case 8:- A cube with 2dense and 1 sparse dimension. Index cache, data cache and data retrieval buffer size is 100times from default. Where input output mode is direct.

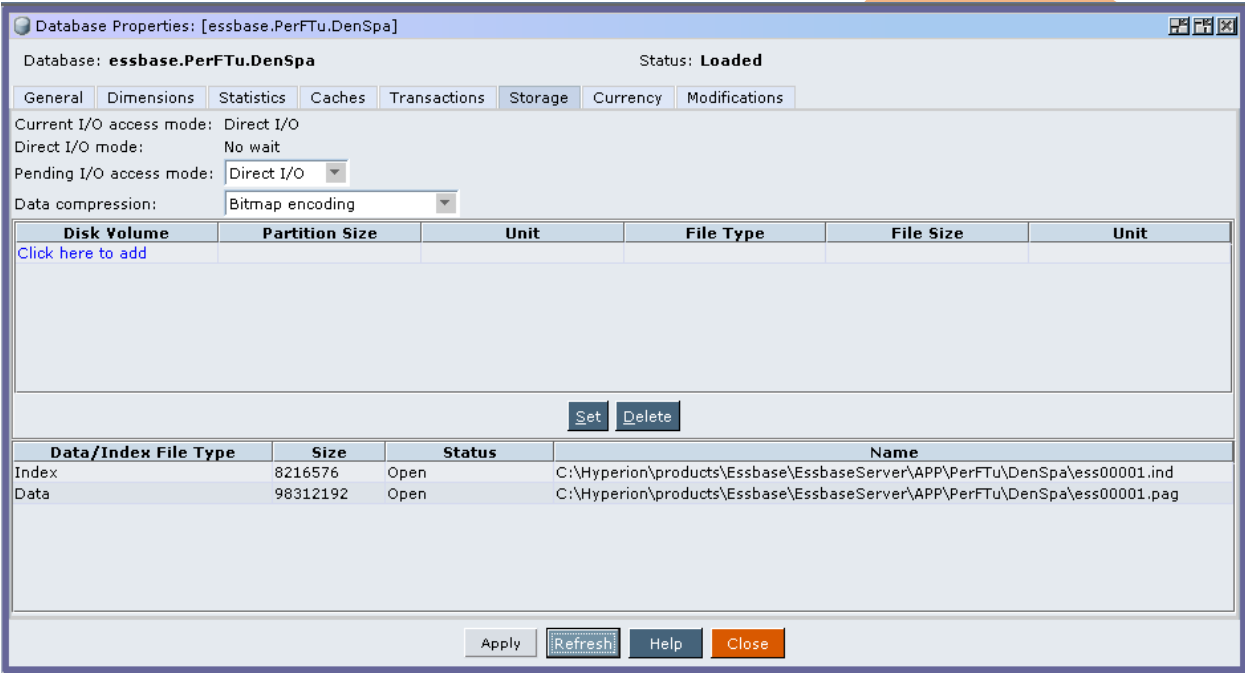
Case statistic

| Performance Tuning | Data load | Data Retrieval | | | Calculati on | Data Export | | | | Block Density | Block Size | Index File Size | Data File Size | Data Retrieval Buffer | |
|---|---------------------------|----------------|--------------|---|--------------|-------------|----------|---------------|------------------|---------------|------------|-----------------|----------------|-----------------------|------------------|
| | | with sort | Without Sort | Using excel spreadsheet queries With 4 user | | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 8:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and 100times cache memory and buffer memory | 2.281Sec / 20MB Data File | 93.484 Sec | 89.296 Sec | 0.063Sec | 0.656Sec | 28.89 Sec | 2.062Sec | 29.234 Sec | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |

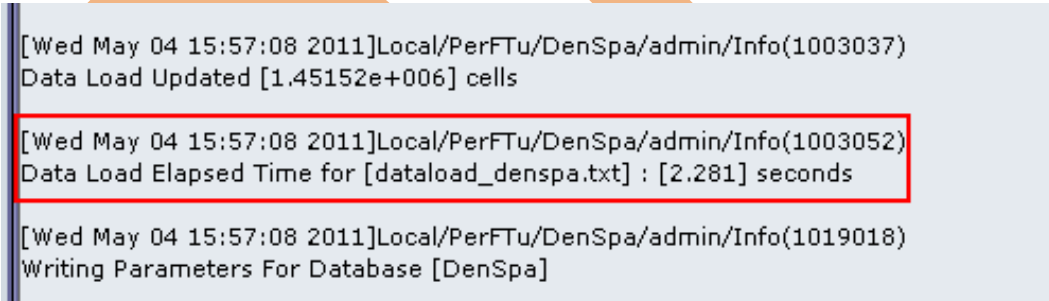
Make changes in index cache, data cache and data retrieval buffer size then click on apply.



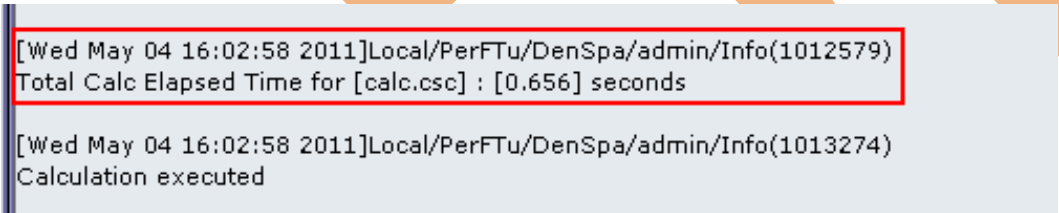
Change input output mode from buffer to direct.



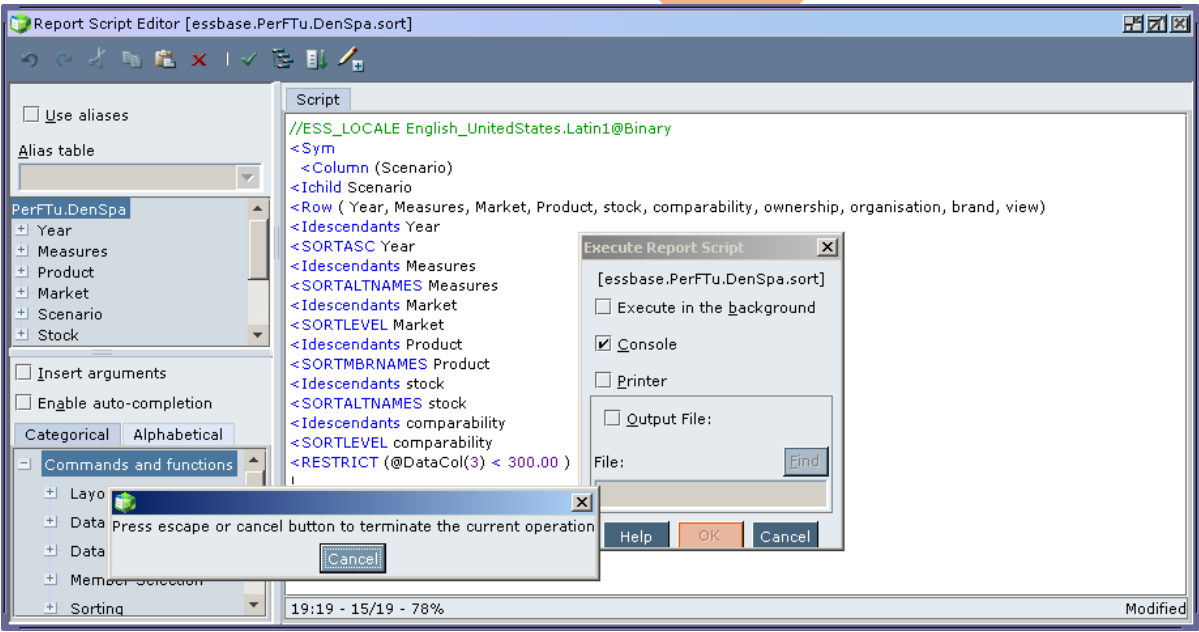
Time to load 20MB data file in to cube.



Time to execute “Calc All”



Time to execute report script with sort operation

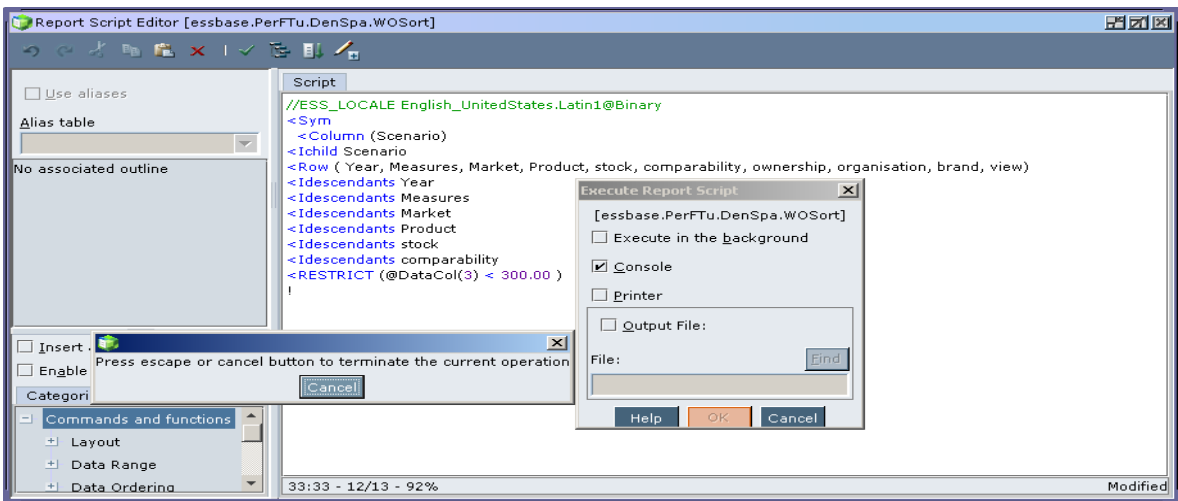


[Wed May 04 16:05:14 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [sort.rep]

[Wed May 04 16:06:47 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [93.484] seconds

[Wed May 04 16:06:47 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [1496000] non-Dyn.Calc.Cache : [0]

Time to execute report script without sort operation



[Wed May 04 16:08:39 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[Wed May 04 16:10:08 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [89.296] seconds

[Wed May 04 16:10:08 2011]Local/PerFTu/DenSpa/admin/Info(1001401)
Regular Extractor Big Block Allocs -- Dyn.Calc.Cache : [1496000] non-Dyn.Calc.Cache : [0]

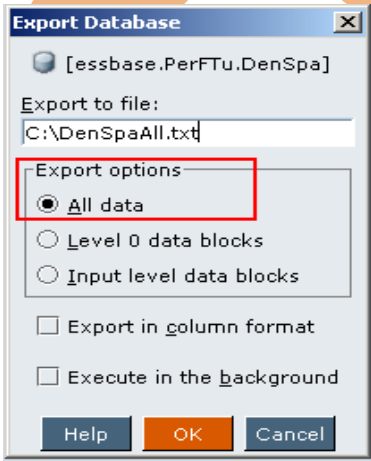
Time to retrieve data in to spread sheet, when four users are connected.

[Thu May 05 08:30:28 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

[Thu May 05 08:30:58 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.063] seconds

[Thu May 05 08:30:58 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

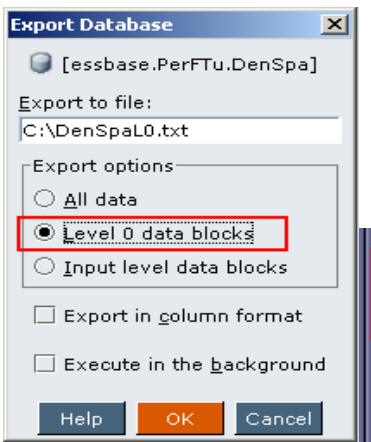
Time to export all cube data into text file



[Wed May 04 16:16:14 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [28.89].

[Wed May 04 16:16:14 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Time to export all level 0 data of cube into text file.



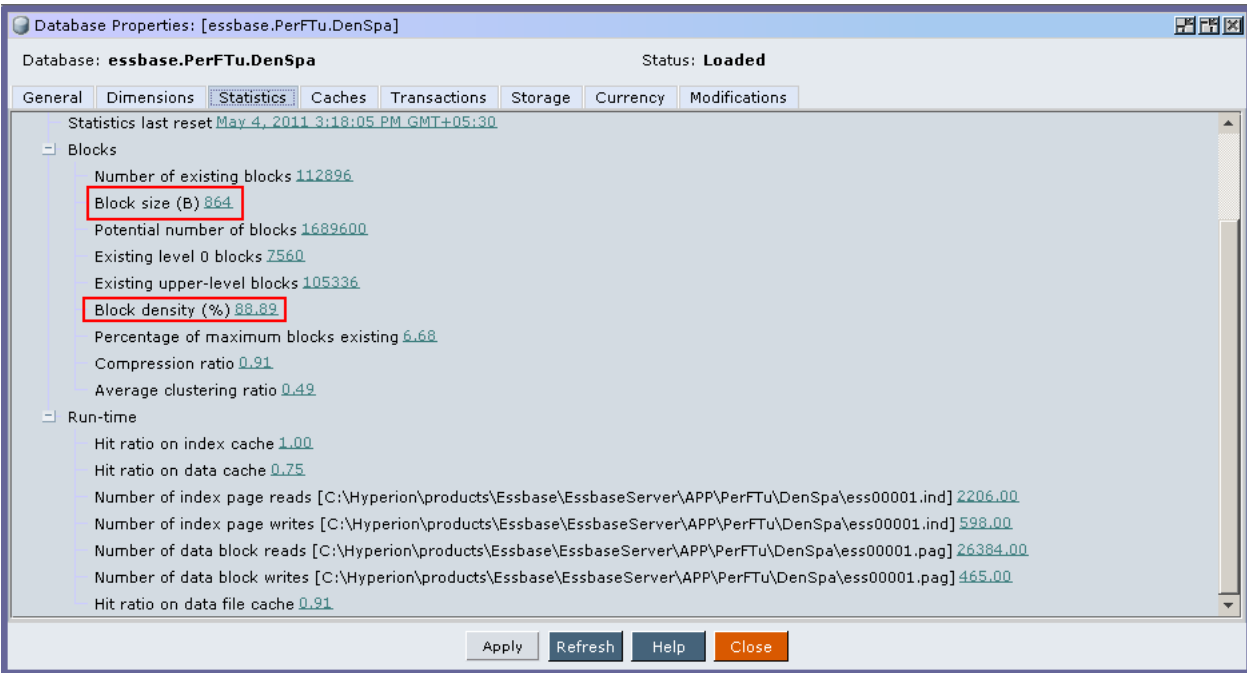
[Wed May 04 16:16:33 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [2.062].

[Wed May 04 16:16:33 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu','DenSpa']

Time to export all cube data with column format into text file.

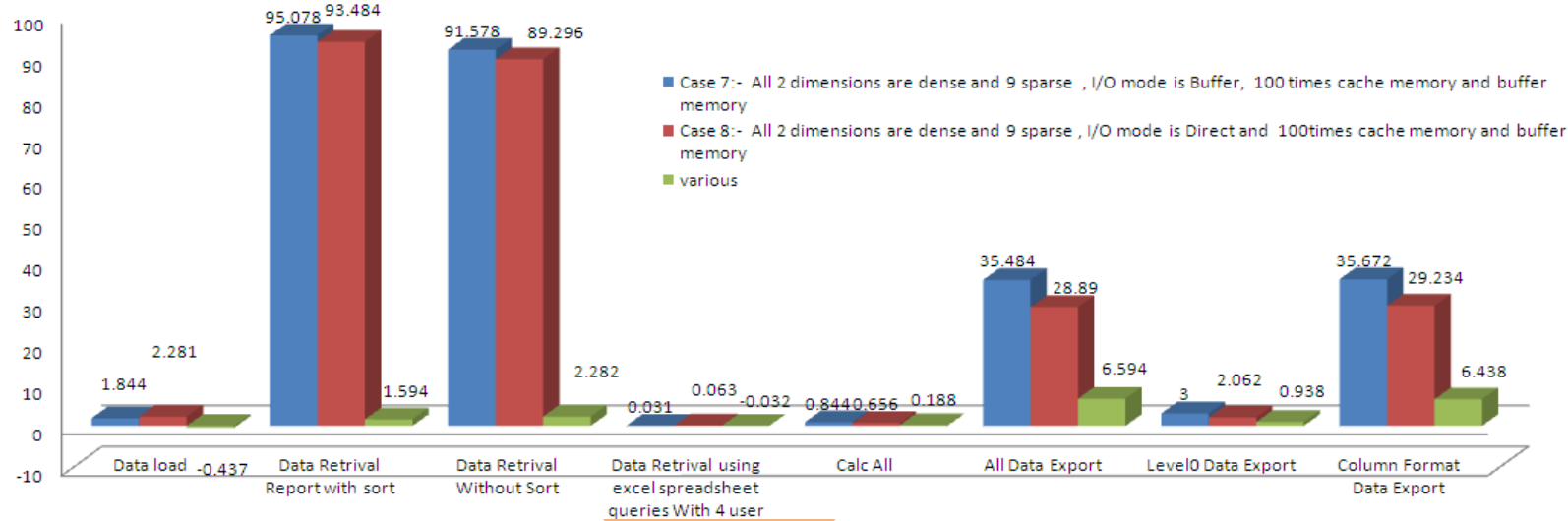


Statistic after data load



Comparison

| | Data load | Data Retrieval Report | Data Retrieval Without | Data Retrieval using excel spreadsheet queries With 4 user | Calc All | All Data Export | Level0 Data Export | Column Format Data |
|---|-----------|-----------------------|------------------------|--|----------|-----------------|--------------------|--------------------|
| Case 7:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer, 100 times cache memory and buffer memory | 1.844 | 95.078 | 91.578 | 0.031 | 0.844 | 35.484 | 3 | 35.672 |
| Case 8:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct and 100times cache memory and buffer memory | 2.281 | 93.484 | 89.296 | 0.063 | 0.656 | 28.89 | 2.062 | 29.234 |
| various | -0.437 | 1.594 | 2.282 | -0.032 | 0.188 | 6.594 | 0.938 | 6.438 |



Case 9:- A cube with 2dense and 9sparse dimension. Index cache, data cache and data retrieval buffer memory is 100time from default. Where input output mode is buffer and database is compress.

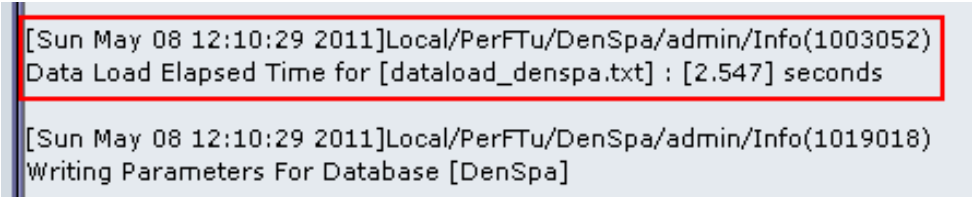
Case Statistic

| Performance Tuning | Dataload | Data Retrieval | | | Calculati on | Data Export | | | Block Density | Block Size | INDX File Size | Data File Size | Data Retrieval Buffer | |
|---|----------|------------------|--------------|---------------------------------------|--------------|-------------|-----------|------------|------------------|------------|----------------|----------------|-----------------------|------------------|
| | | Report with sort | Without Sort | Excel spreadsheet queries With 4 user | | Calc All | All | Level0 | | | | | Buffer Size | Sort Buffer Size |
| Case 9:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and 100 times cache memory and buffer memory where data is compress | 2.547Sec | 95.484 Sec | 95.672 | 0.063Sec | 12.5Sec | 29.125 Sec | 2.016 Sec | 29.485 Sec | Before Data Load | 0% | 864 | Null | 1000KB | 1000KB |
| | | | | | | | | | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB |

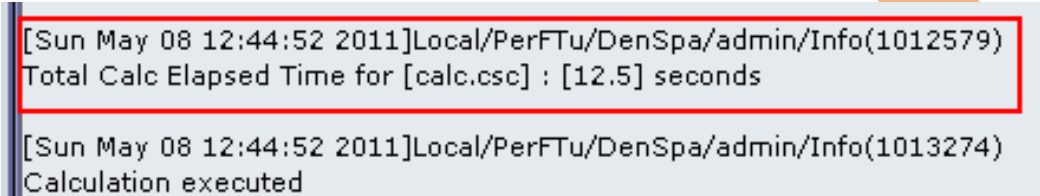
Changing settings of data base



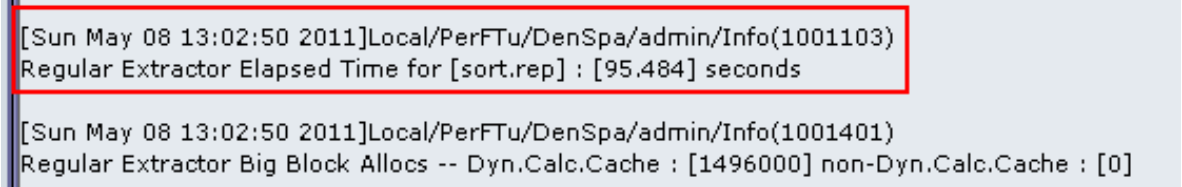
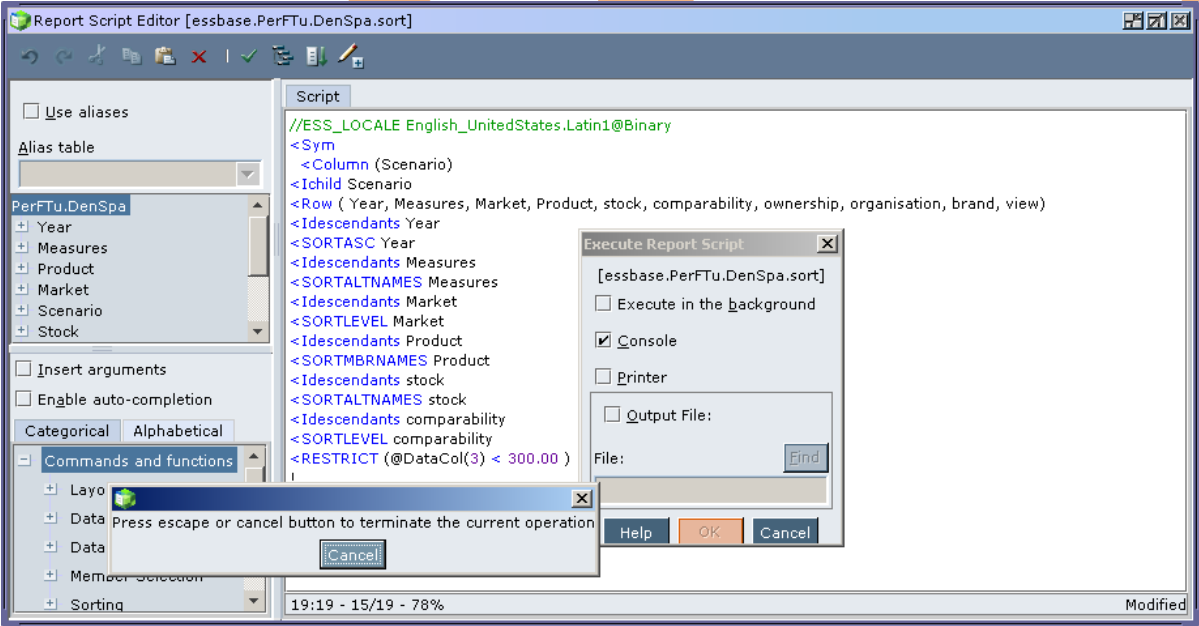
Time to load 20MB data file in to cube.



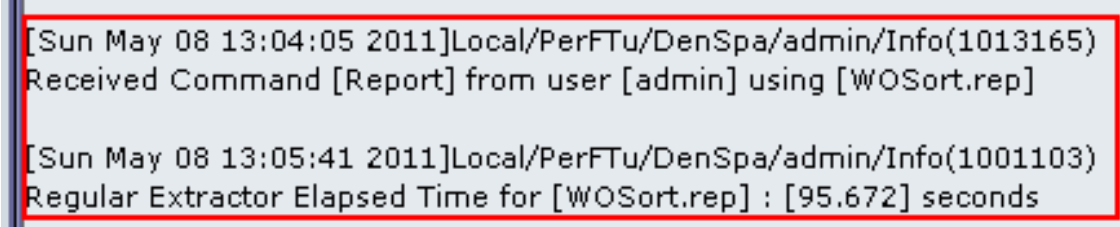
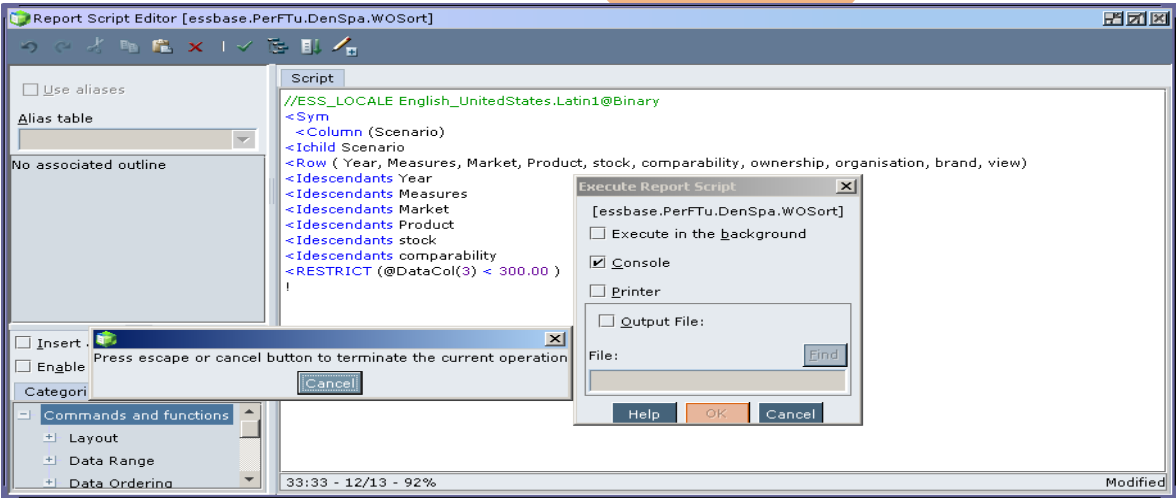
Time to execute “Calc All”



Time to execute report script with sort operation



Time to execute report script without sort operation



Time to retrieve data in to spread sheet, when four users are connected.

```
[Thu May 05 08:30:28 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

[Thu May 05 08:30:58 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.063] seconds

[Thu May 05 08:30:58 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]
```

Time to export all cube data into text file

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaAll.txt

Export options

All data

Level 0 data blocks

Input level data blocks

Export in column format

Execute in the background

Help

OK

Cancel

[Sun May 08 14:15:44 2011]Local/PerFTu/DenSpa/admin/Info(1005002)

Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [29.125].

Time to export all level 0 data of cube into text file.

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaL0.txt

Export options

All data

Level 0 data blocks

Input level data blocks

Export in column format

Execute in the background

Help

OK

Cancel

[Sun May 08 14:16:58 2011]Local/PerFTu/DenSpa/admin/Info(1005002)

Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [2.016].

Time to export all cube data with column format into text file.

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaCL.txt

Export options

All data

Level 0 data blocks

Input level data blocks

Export in column format

Execute in the background

Help

OK

Cancel

[Sun May 08 14:19:37 2011]Local/PerFTu/DenSpa/admin/Info(1005002)

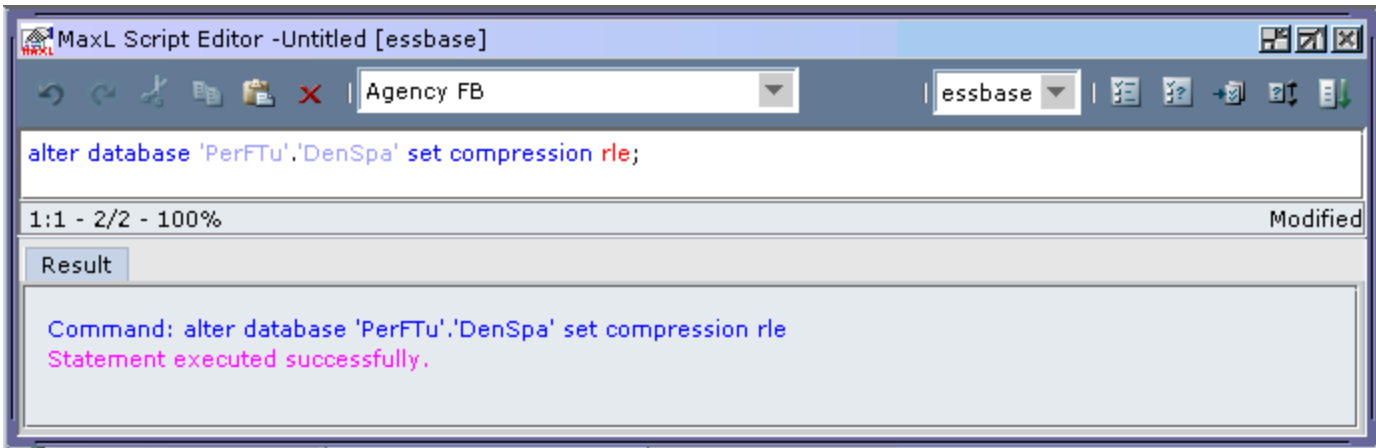
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [29.485].

Case 10:- A cube with 2dense and 9sparse dimension. Index cache, data cache and data retrieval buffer memory is 100time from default. Where input output mode is direct and database is compress.

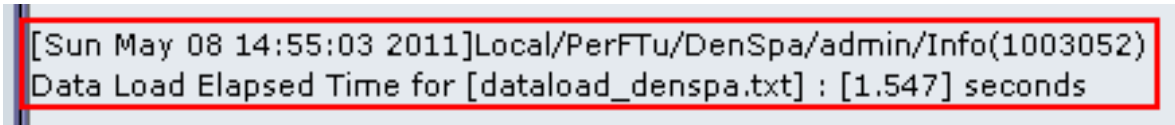
Case Statistic

| Performance Tuning | Dataload | Data Retrieval | | | Calculati on | Data Export | | | | Block Density | Block Size | INDX File Size | Data File Size | Data Retrieval Buffer | |
|--|----------|------------------|--------------|---------------------------------------|--------------|-------------|-----------|---------------|------------------|---------------|------------|----------------|----------------|-----------------------|------------------|
| | | Report with sort | Without Sort | Excel spreadsheet queries With 4 user | | All | Level0 | Column Format | | | | | | Buffer Size | Sort Buffer Size |
| Case 10:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct, 100times cache memory and buffer memory where data is compress | | | | | | | | | Before Data Load | 0% | 864 | Null | Null | 1000KB | 1000KB |
| | 1.547Sec | 108.172 Sec | 98.344 Sec | 0.063Sec | 0.61Sec | 1.953 Sec | 1.953 Sec | 1.953 Sec | After Data Load | 88.89% | 864 | 7.83MB | 93.70MB | 1000KB | 1000KB |

Compression Settings



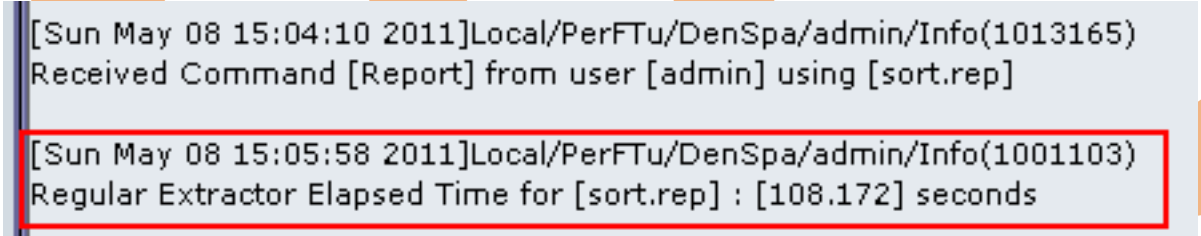
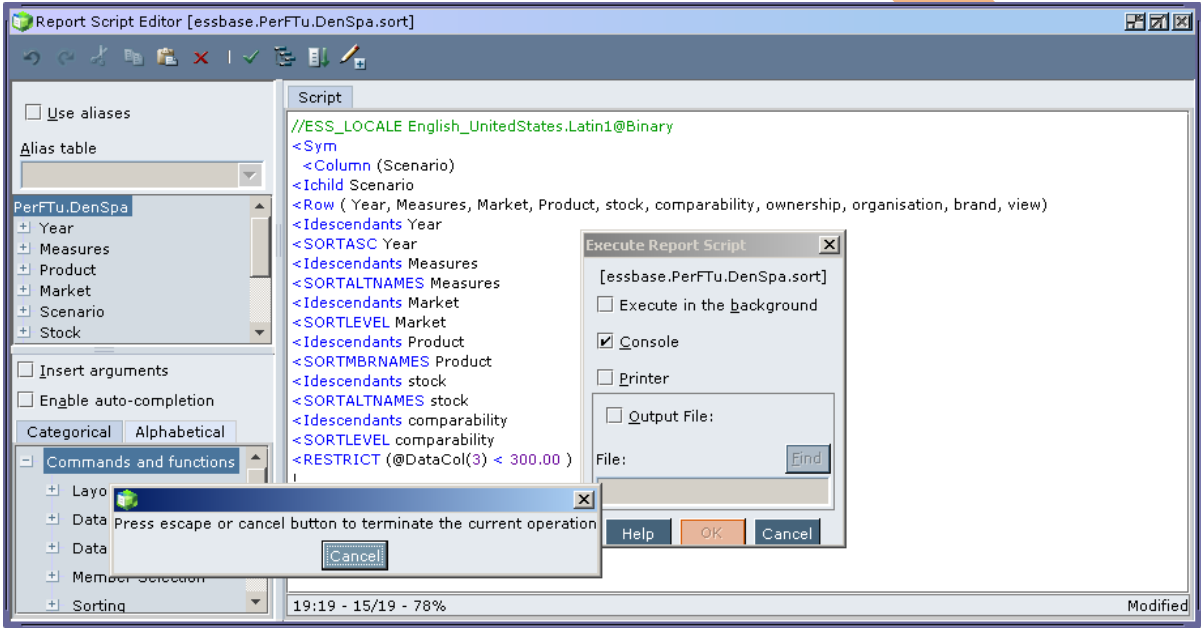
Time to load 20MB data file in to cube.



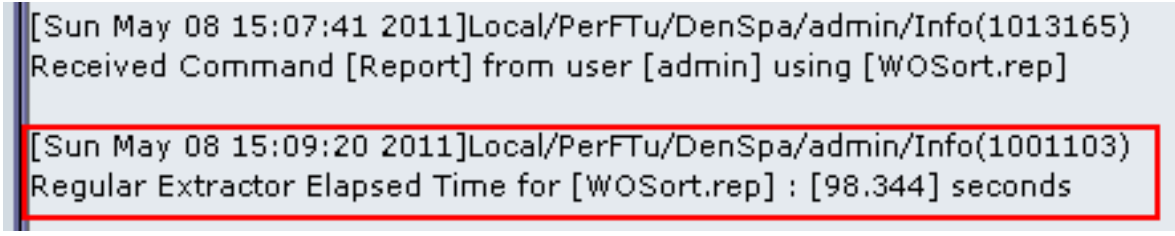
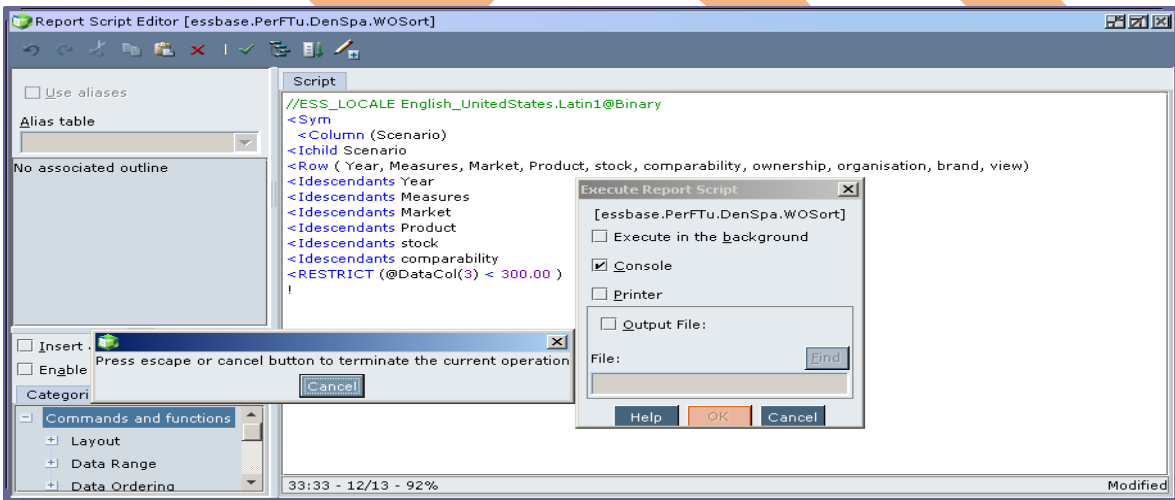
Time to execute "Calc All"



Time to execute report script with sort operation



Time to execute report script without sort operation



Time to retrieve data in to spread sheet, when four users are connected.

[Thu May 05 08:30:28 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

[Thu May 05 08:30:58 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020055)
Spreadsheet Extractor Elapsed Time : [0.063] seconds

[Thu May 05 08:30:58 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

Time to export all cube data into text file

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaAll.txt

Export options

☒ All data

☐ Level 0 data blocks

☐ Input level data blocks

☐ Export in column format

☐ Execute in the background

Help OK Cancel

[Sun May 08 15:10:37 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [1.953].

Time to export all level 0 data of cube into text file.

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaL0.txt

Export options

☐ All data

☒ Level 0 data blocks

☐ Input level data blocks

☐ Export in column format

☐ Execute in the background

Help OK Cancel

[Sun May 08 15:11:39 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [1.953].

Time to export all cube data with column format into text file.

Export Database

[essbase.PerFTu.DenSpa]

Export to file:
C:\DenSpaCL.txt

Export options

☒ All data

☐ Level 0 data blocks

☐ Input level data blocks

☒ Export in column format

☐ Execute in the background

Help OK Cancel

[Sun May 08 15:12:44 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [1.953].

Statistic after data load

| | Data load | Data Retrieval Report | Data Retrieval Without | Data Retrieval using excel spreadsheet queries With 4 user | Calc All | All Data Export | Level0 Data Export | Column Format Data |
|--|-----------|-----------------------|------------------------|--|----------|-----------------|--------------------|--------------------|
| Case 9:- All 2 dimensions are dense and 9 sparse , I/O mode is Buffer and 100 times cache memory and buffer memory | 2.547 | 95.484 | 95.672 | 0.063 | 12.5 | 29.125 | 2.016 | 29.485 |
| Case 10:- All 2 dimensions are dense and 9 sparse , I/O mode is Direct, 100times cache memory and buffer memory where data | 1.547 | 108.172 | 98.344 | 0.063 | 0.61 | 1.953 | 1.953 | 1.953 |
| various | 1 | -12.688 | -2.672 | 0 | 11.89 | 27.172 | 0.063 | 27.532 |

