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 1st	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.

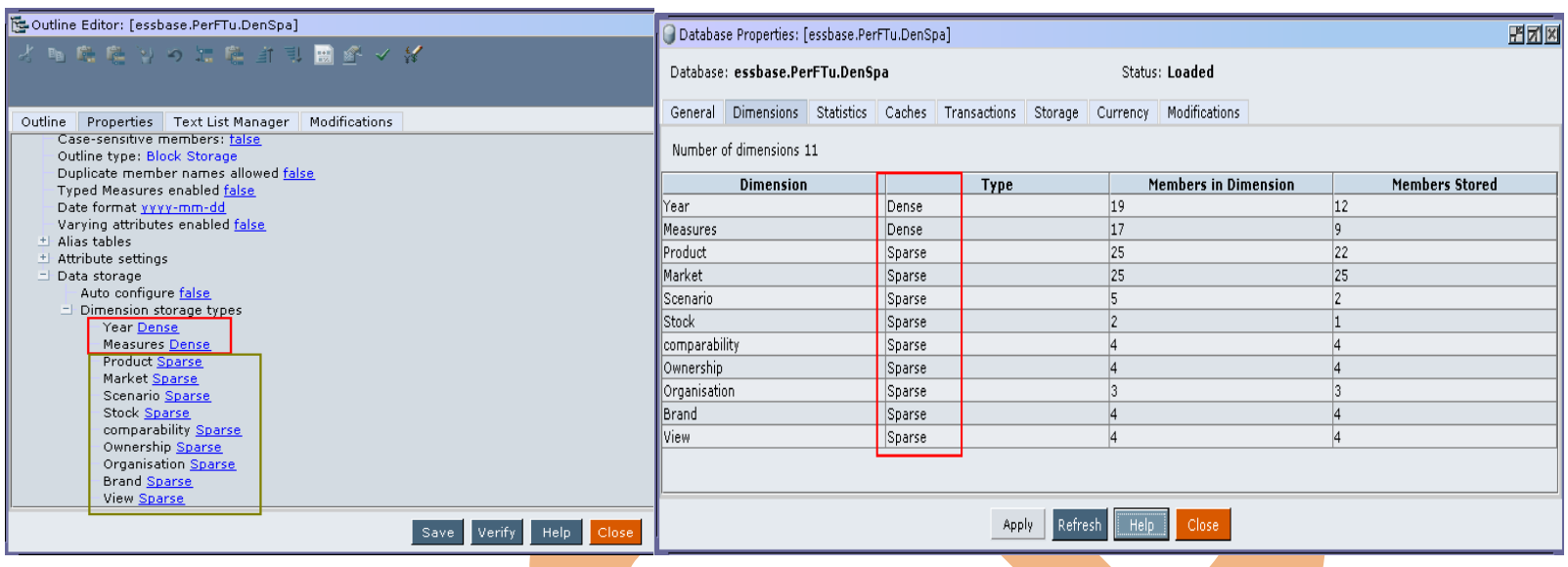
Performance Tuning	**Data load**	**Data Retrieval**			**Calculation**	**Data Export**				**Block Density**	**Block Size**	**Index File Size**	**Data File Size**	**Data Retrieval Buffer**	
		with sort	Without Sort	Using excel spreadsheet queries With 4 user	Calc All	All	Level0	Column Format						Buffer 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	13.188 Sec	32.734 Sec	3.453 Sec	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 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	129.515Sec	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	146.14 Sec	126.765Sec	0.172Sec	0.516Sec	29.344 Sec	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	96.281 Sec	0.016Sec	0718Sec	29.047 Sec	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	87.938 Sec	90.563 Sec	0.032Sec	0.906Sec	35.328 Sec	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	95.078 Sec	91.578 Sec	0.031Sec	0.844Sec	35.484 Sec	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	93.484 Sec	89.296 Sec	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.

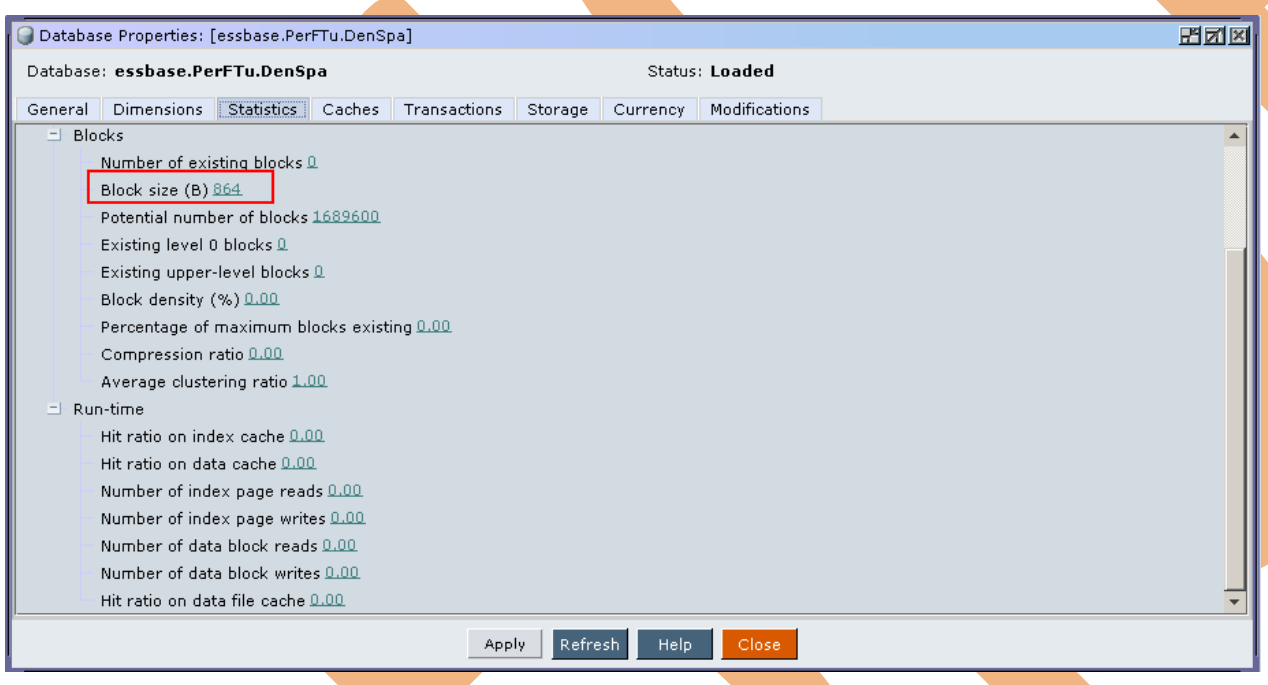
Case statistic

Performance Tuning	Data load	Data Retrieval			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	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	124.422 Sec	0.046Sec	13.188 Sec	32.734 Sec	3.453 Sec	33.171 Sec	Before Data Load	0%	864	Null	Null	10KB	10KB
									After Data Load	88.86%	864	7.83MB	92.10MB	10KB	10KB

Cube dimension storage type



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



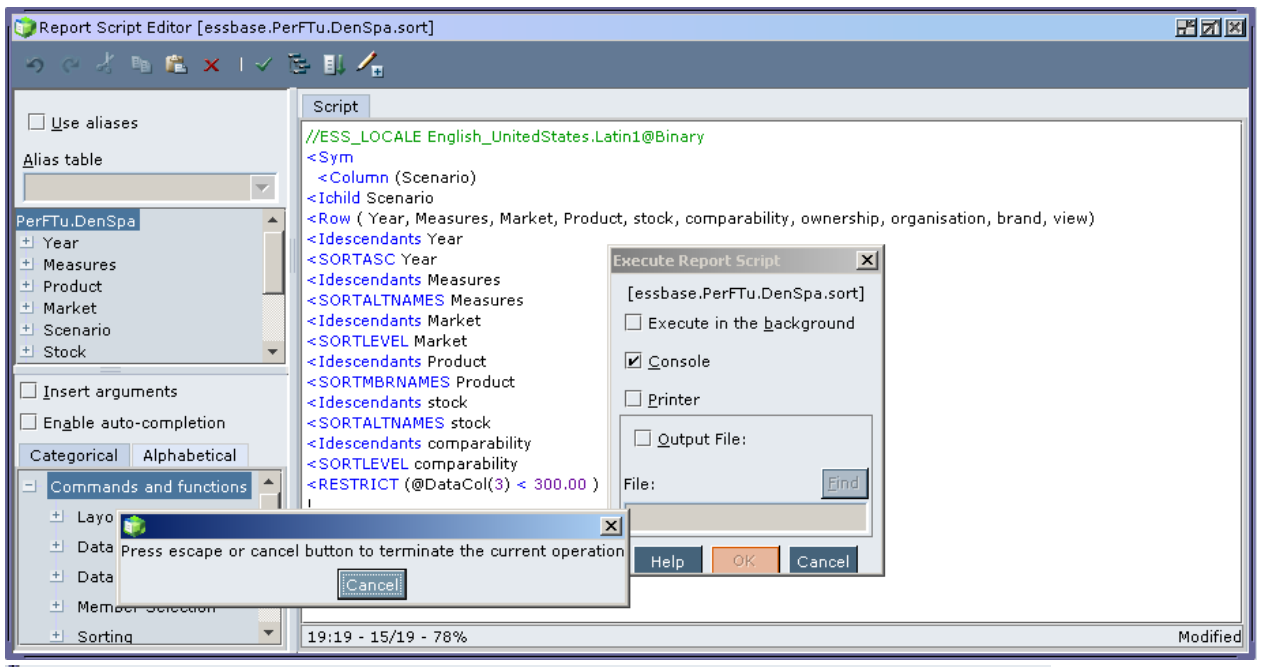
Case when: Loading 20MB data file in to cube.

```
[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”

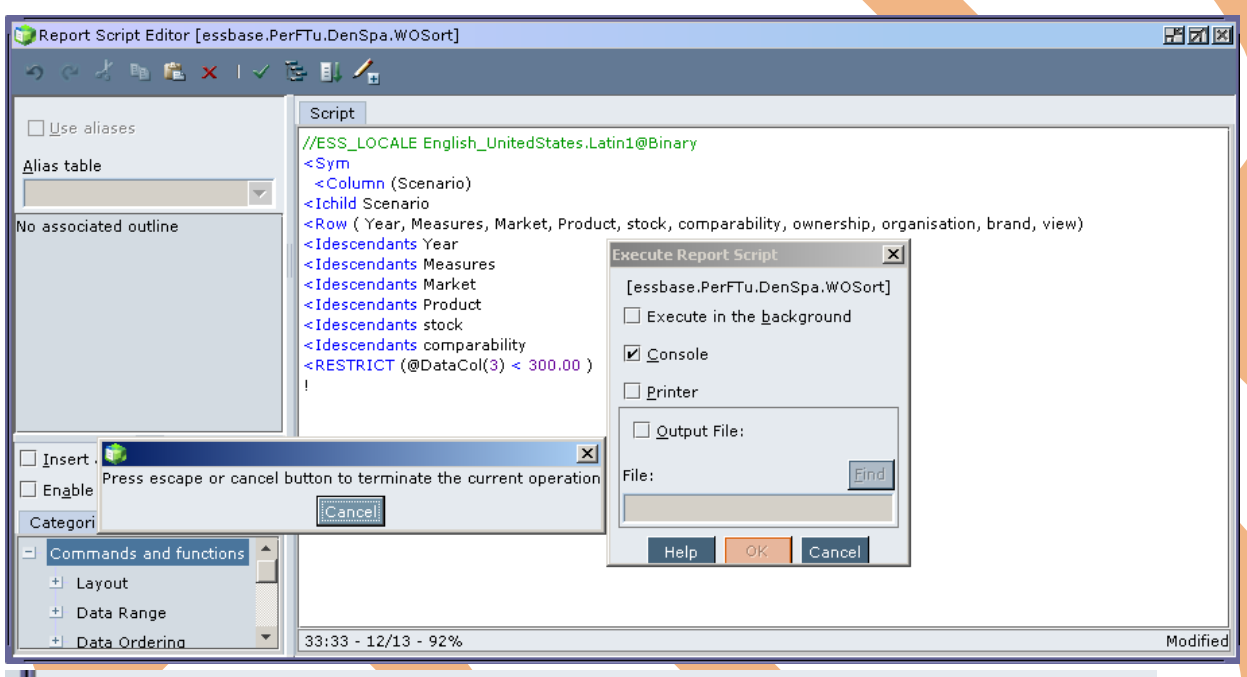
```
[Tue May 03 17:28:13 2011]Local/PerFTu/DenSpa/admin/Info(1012677)
Calculating in serial

[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

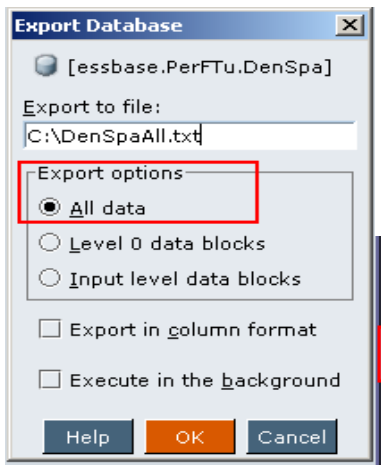



```
[Sun May 08 13:11:53 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [92.859] seconds
```

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

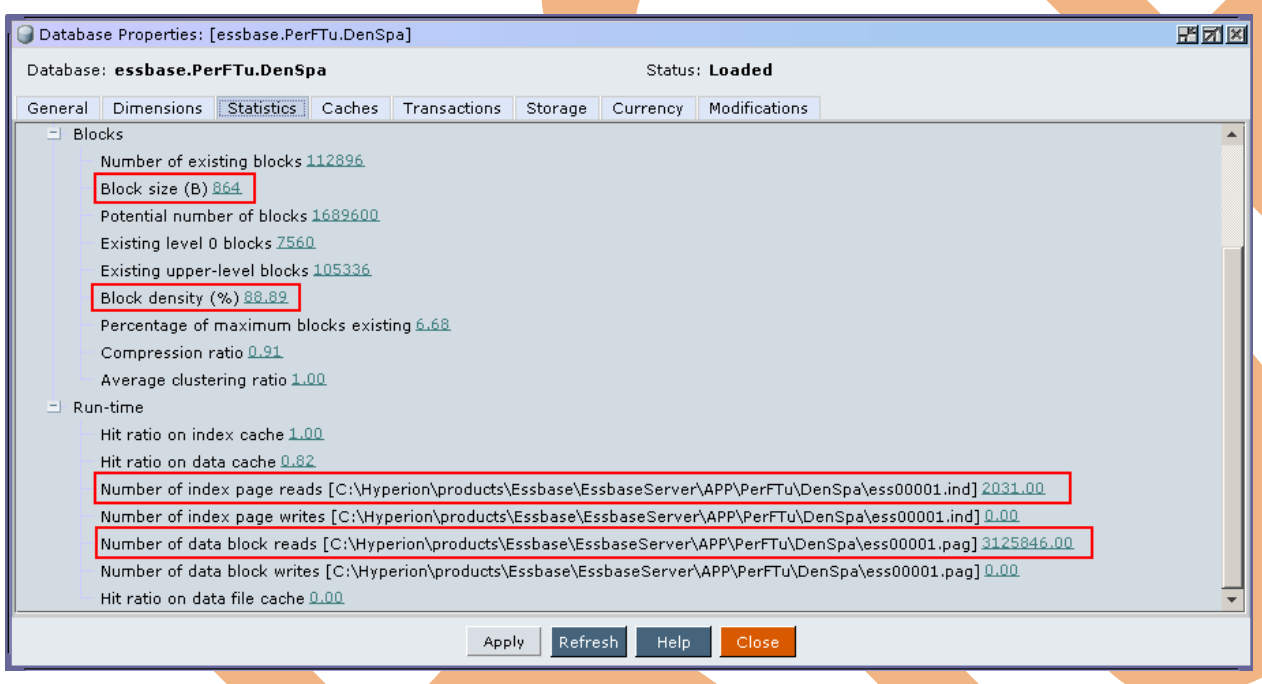



```
[Wed May 04 10:13:48 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [32.703].

[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']
```

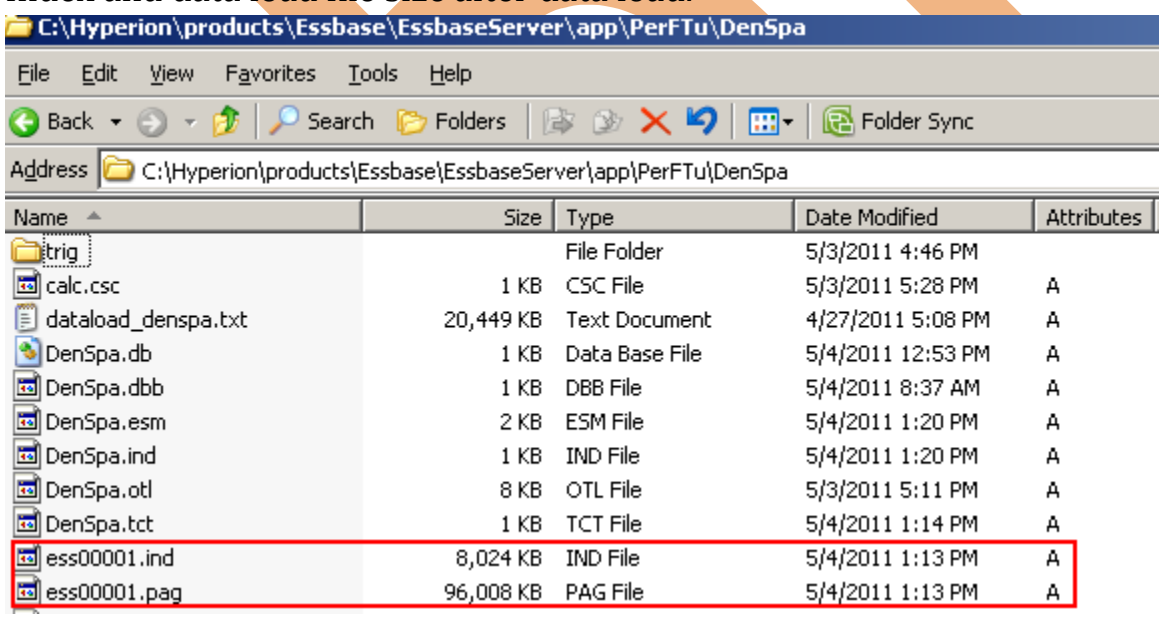
Case when: Exporting all level 0 data of cube into text file.

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

Statistics after data load.



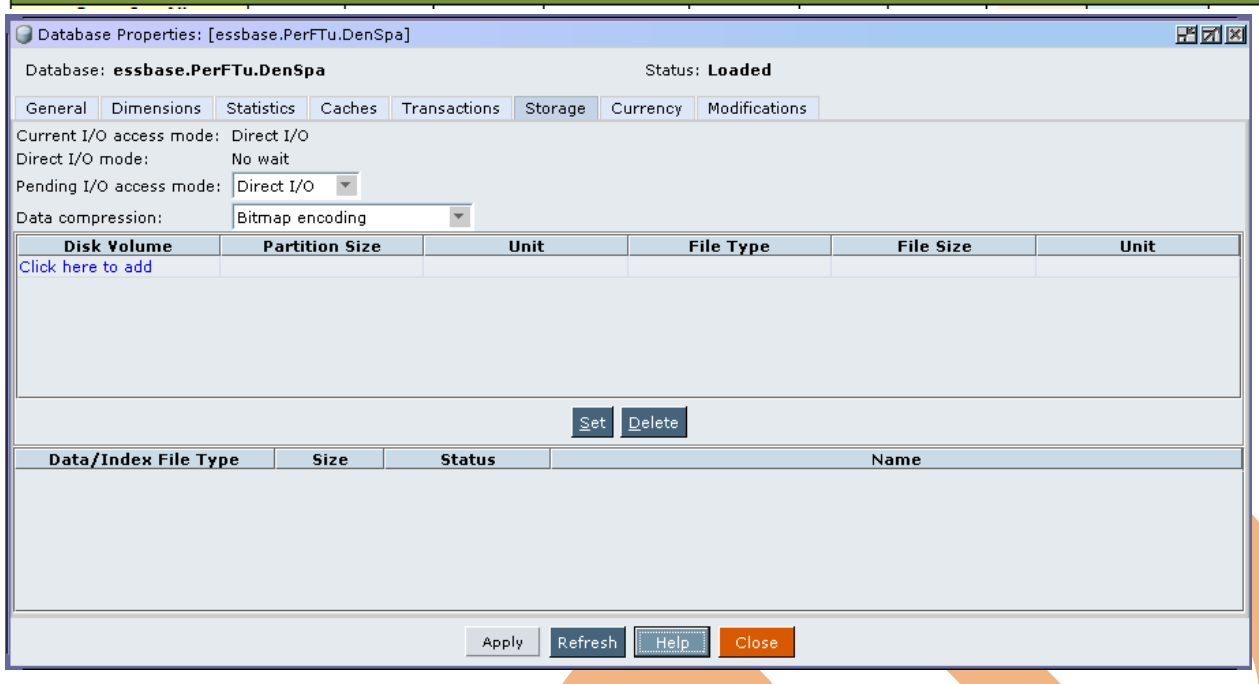
Index and data load file size after data load.



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	Calc All	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	124.765 Sec	0.031Sec	0.813Sec	35.11 Sec	3.219Sec	35.359 Sec	Before Data Load	0%	864	Null	Null	10KB	10KB
									After Data Load	88.89%	864	7.83MB	93.70MB	10KB	10KB



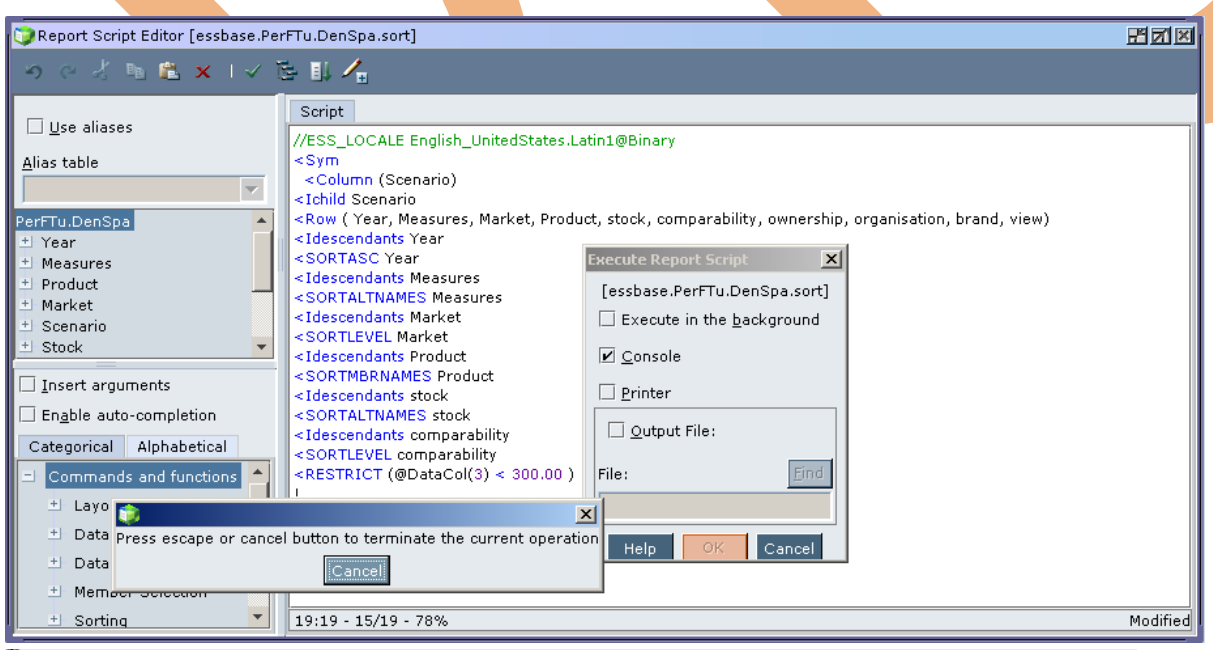
Case when: Loading 20MB data file in to cube.

```
[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”

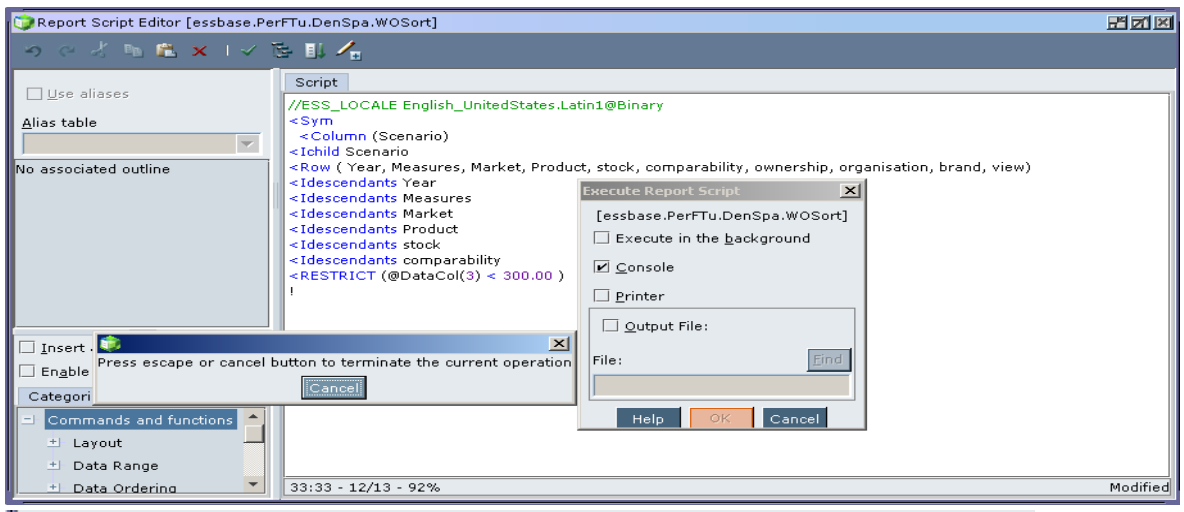
```
[Wed May 04 11:23:40 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.813] seconds

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

Case when : Executing report script with sort operation




```
[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

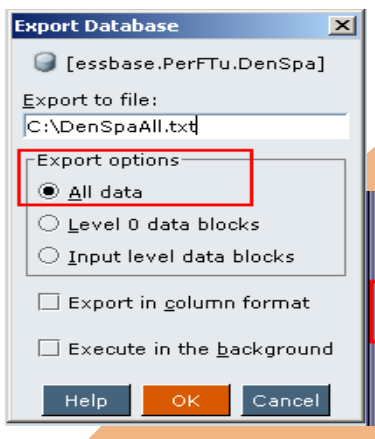



```
[Wed May 04 10:54:01 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[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.

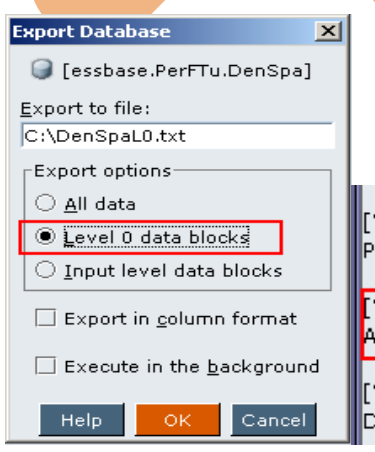
```
[Thu May 05 09:07:03 2011]Local/PerFTu///Info(1013205)
Received Command [Get Database File Information]

[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



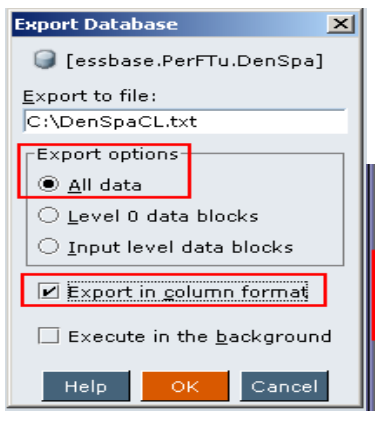

```
[Wed May 04 11:11:45 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [35.11].

[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.



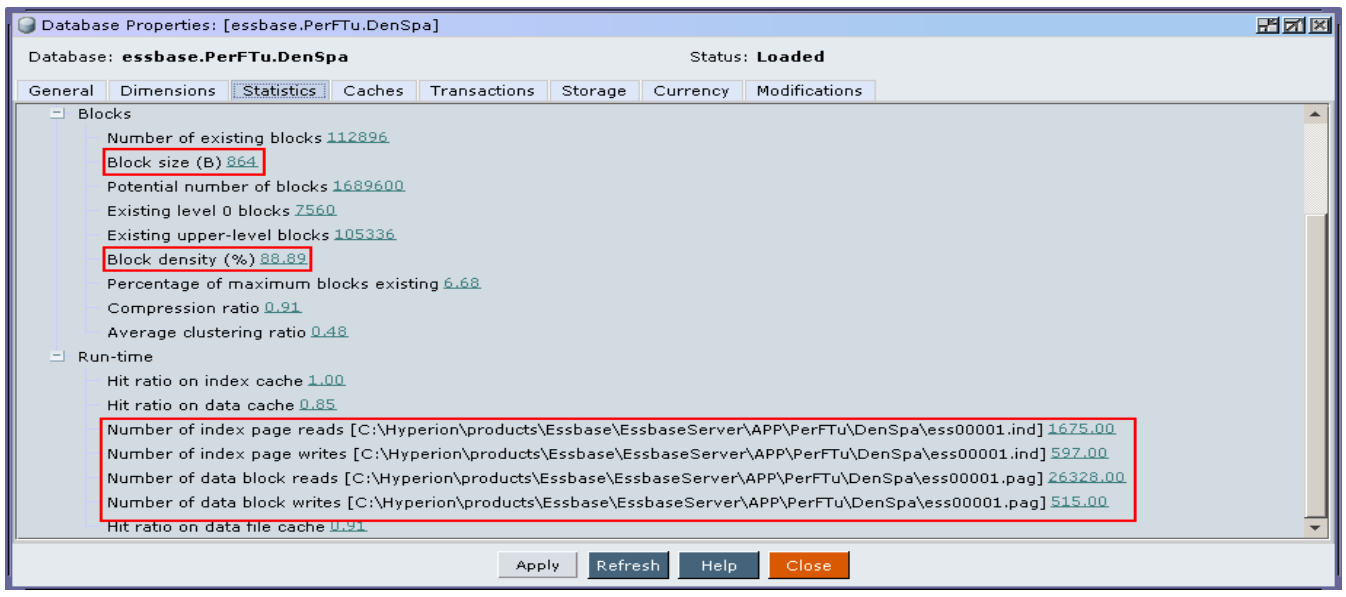

```
[Wed May 04 11:13:31 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [7560]. Elapsed time: [3.219].

[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.



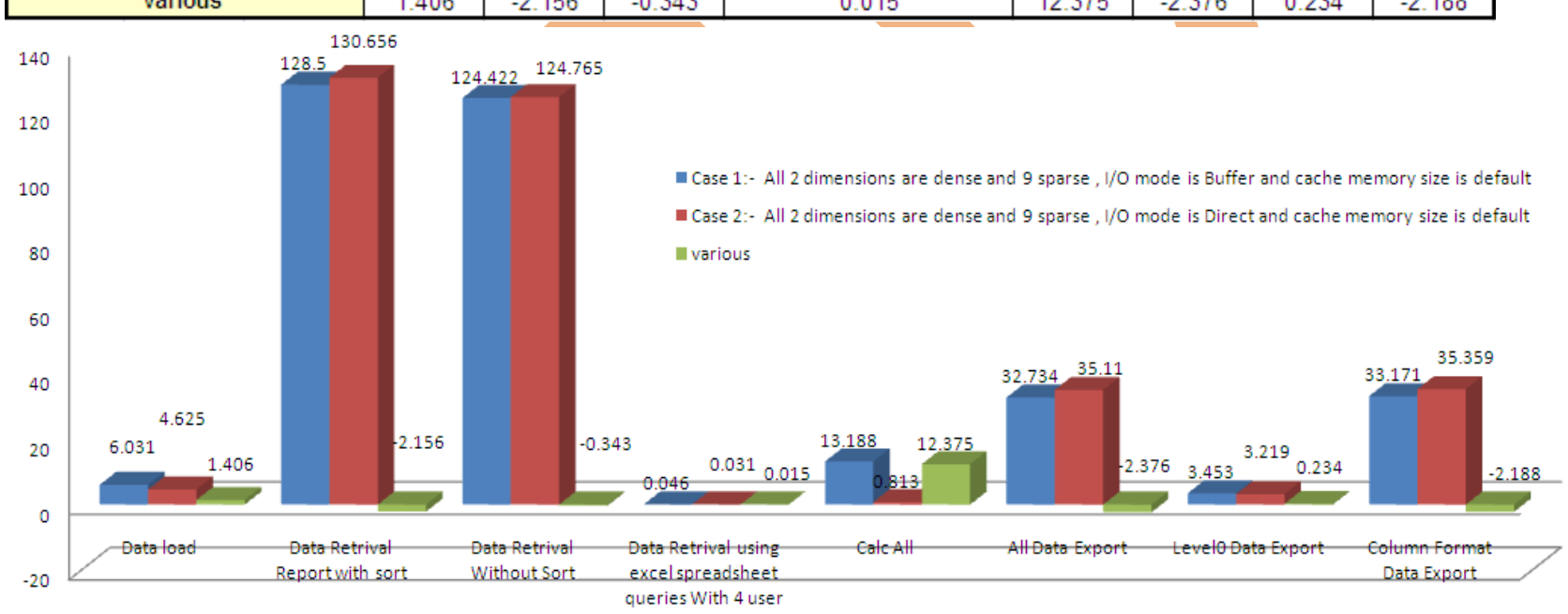

```
[Wed May 04 11:15:10 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [35.359].

[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 Retrival Report	Data Retrival Without	Data Retrival 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

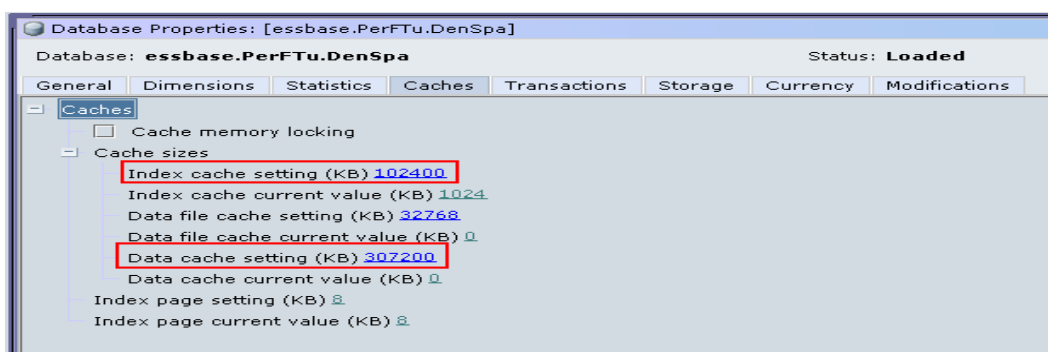


Case 3:- A cube with 2 dense and 1 sparse dimensions. Index cache, data cache memory size is 100 time from default. Input output mode is buffer.

Case statistic

Performance Tuning	Data load	Data Retrieval			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	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



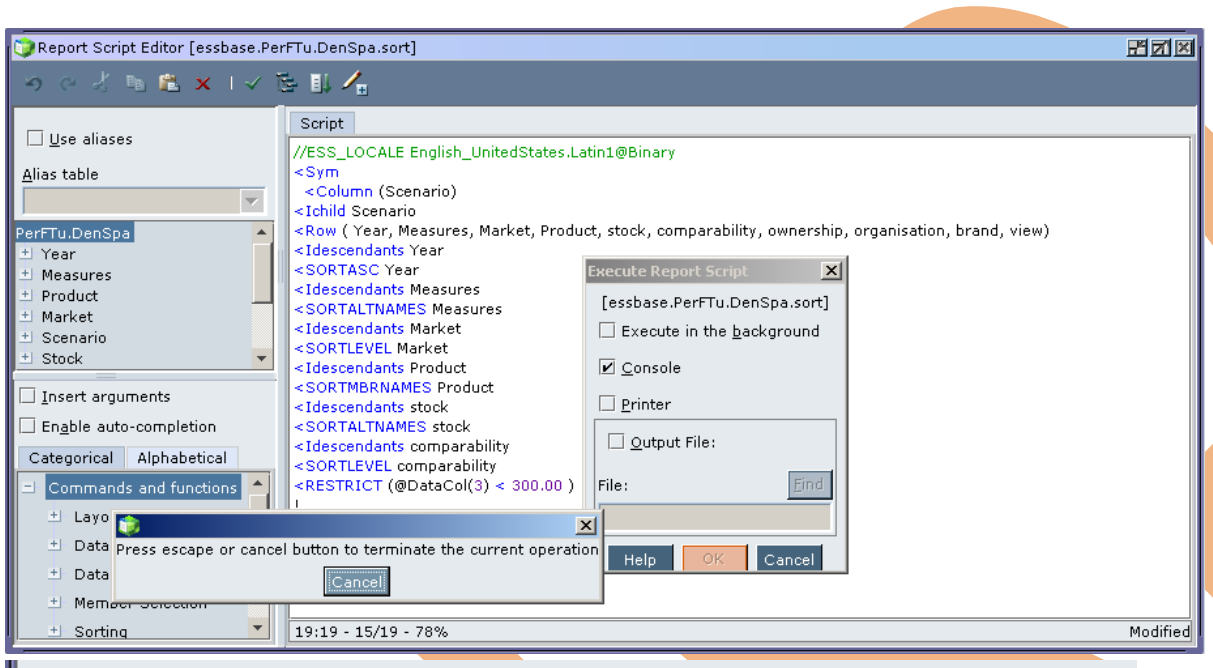
Time to load 20MB data file in to cube.

```
[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”

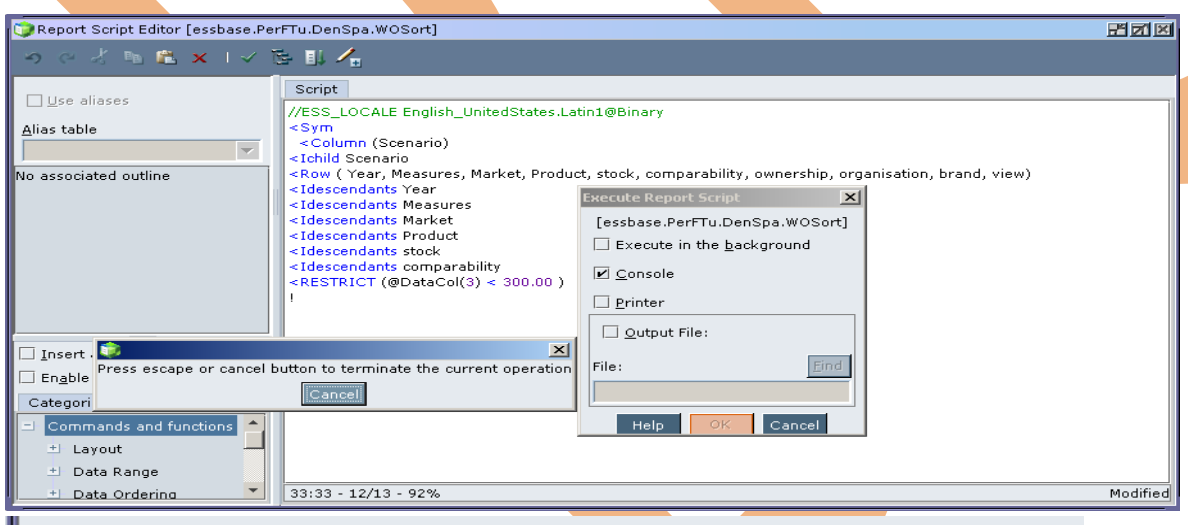
```
[Wed May 04 11:38:58 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.594] seconds

[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



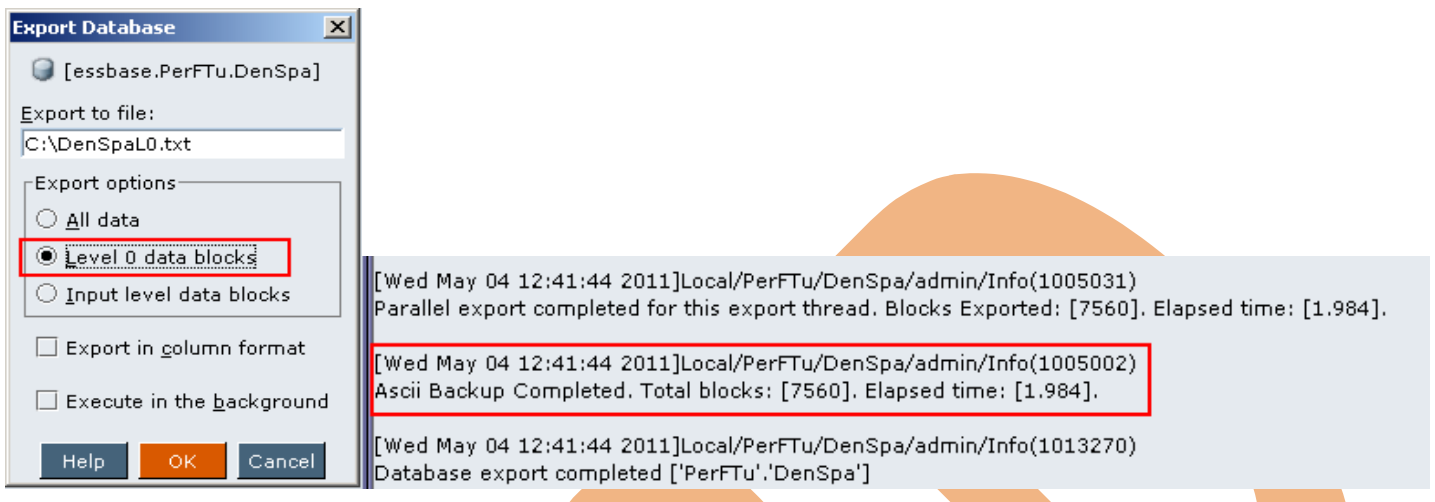

```
[Wed May 04 12:05:38 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[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.

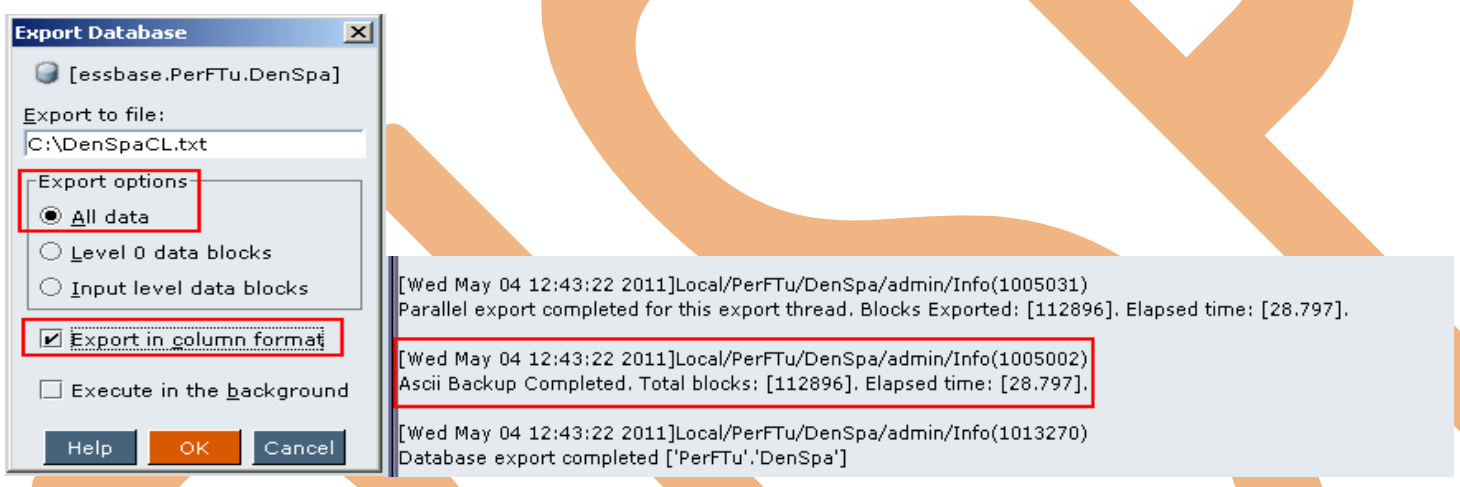
```
[Thu May 05 09:04:24 2011]Local/PerFTu///Info(1013210)
User [Mack] set active on database [DenSpa]

[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

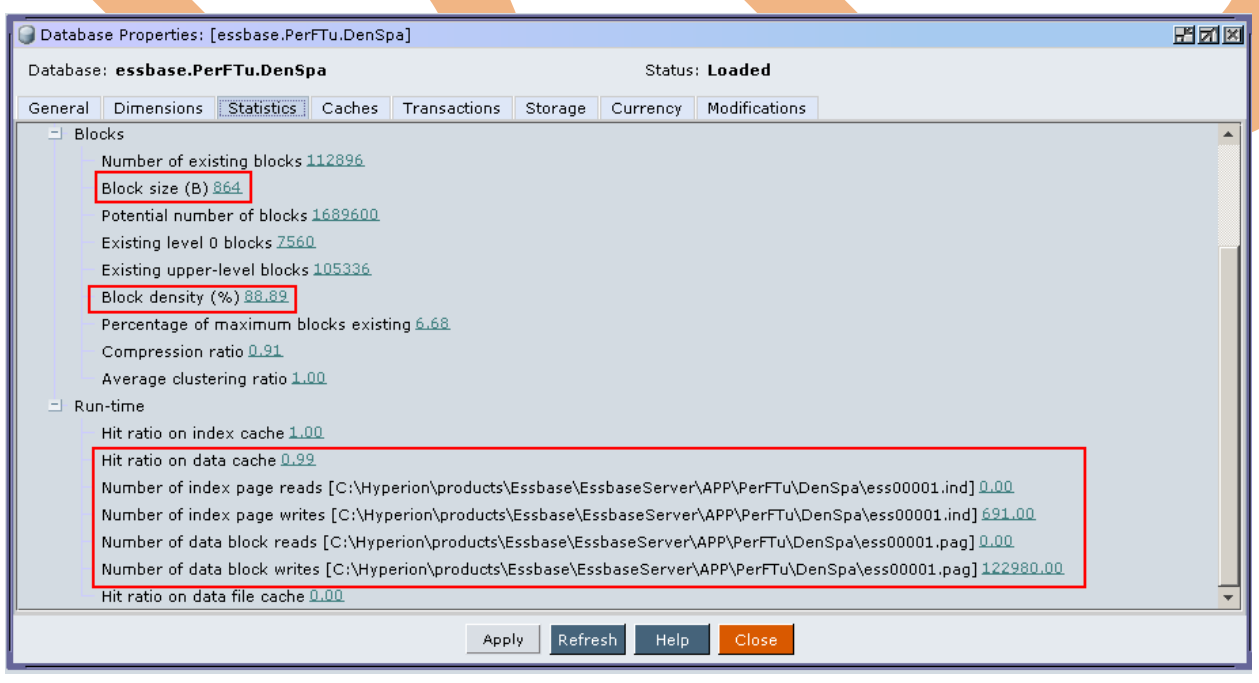
Time to export all level 0 data of cube into text file.



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



Statistic after data load

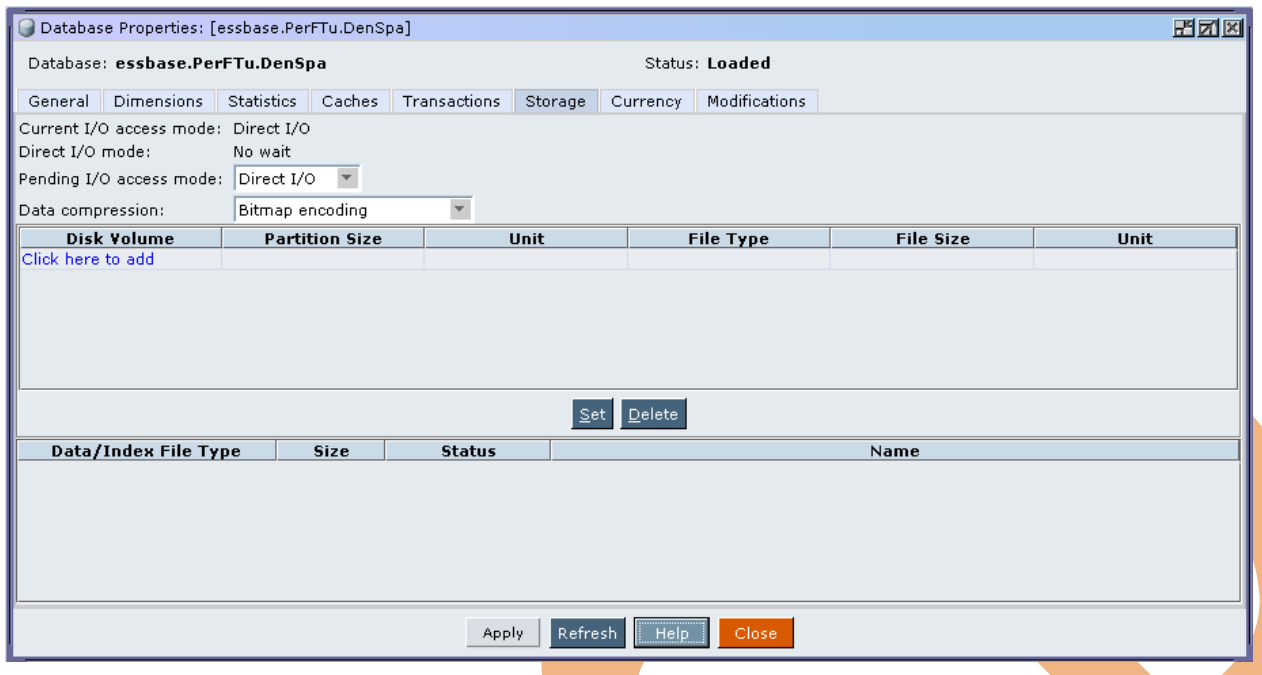


Case 4:- A cube with 2 dense and 1 sparse dimensions. Index and data cache memory size is 100 times from default. Where input output mode is direct.

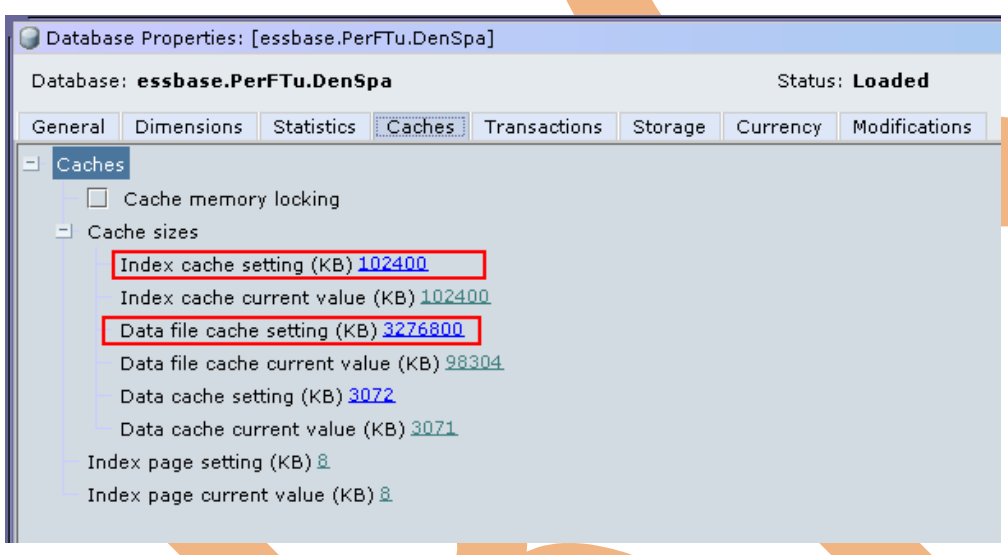
Case statistic

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	Calc All	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	146.14 Sec	126.765 Sec	0.172Sec	0.516Sec	29.344 Sec	2.046Sec	29.469 Sec	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.



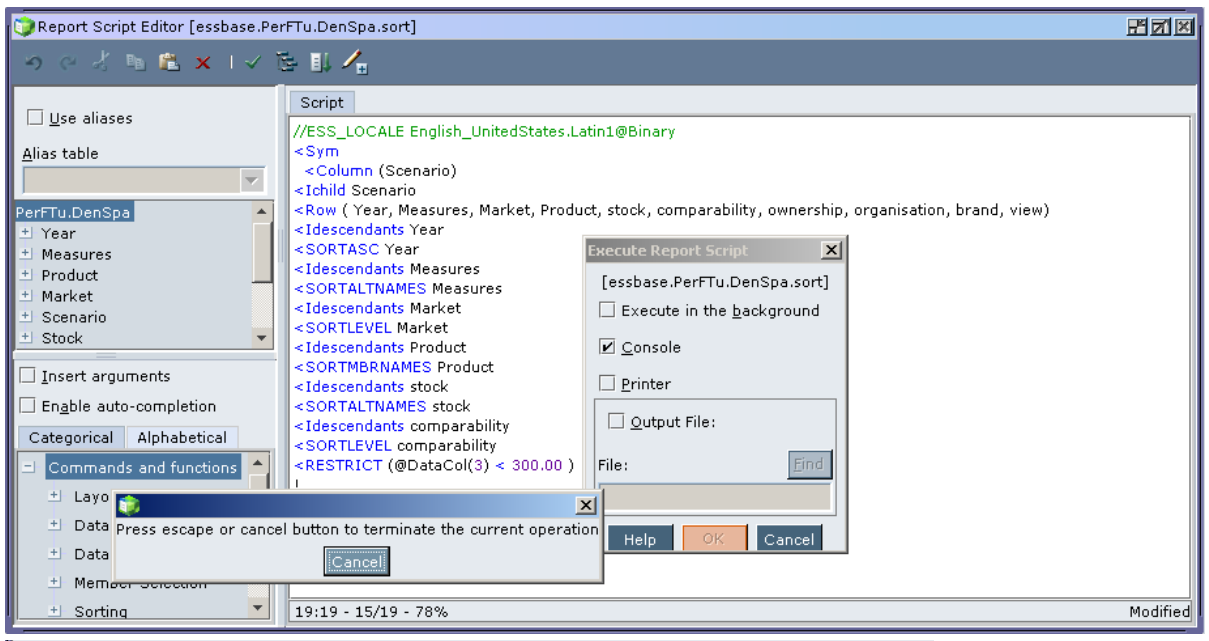
Time to load 20MB data file in to cube.

```
[Wed May 04 13:28:08 2011]Local/PerFTu/DenSpa/admin/Info(1003037)
Data Load Updated [1.45152e+006] cells

[Wed May 04 13:28:08 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [1.844] seconds

[Wed May 04 13:28:08 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]
```

Time to execute “Calc All”

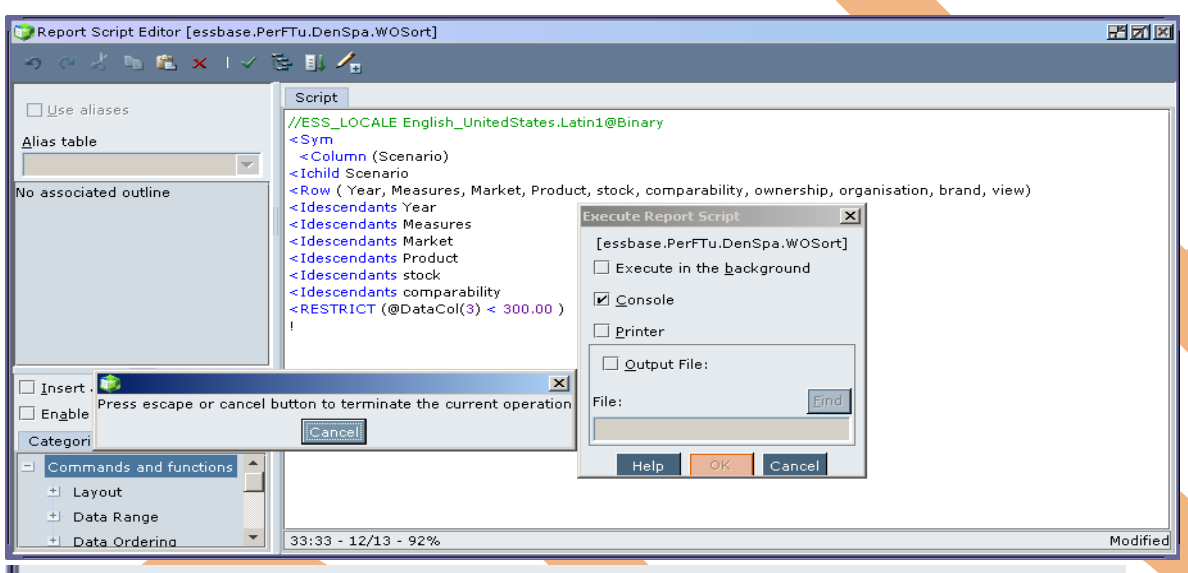
```
[Wed May 04 13:29:34 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.656] seconds

[Wed May 04 13:29:34 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed
```

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

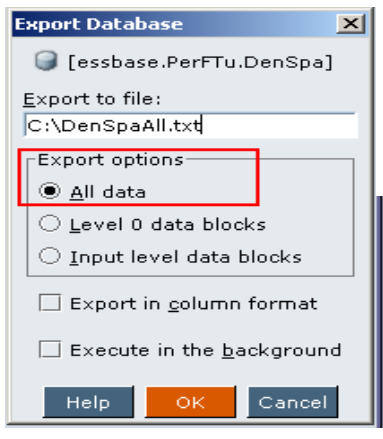



```
[Wed May 04 13:33:26 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[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.

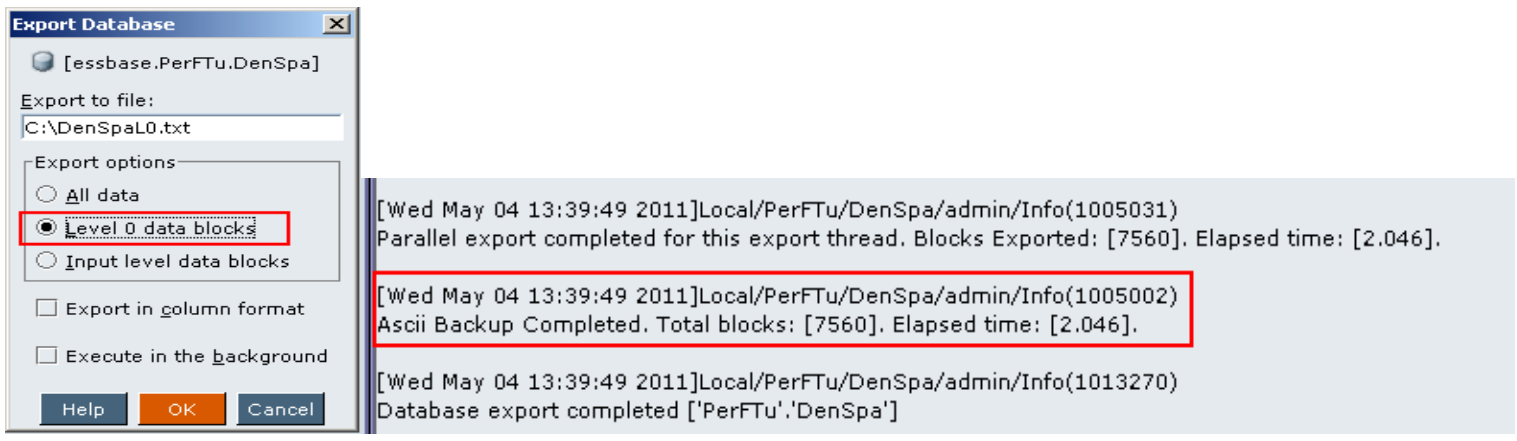
```
[Thu May 05 08:45:10 2011]Local/PerFTu/DenSpa/Mack/Info(1013091)
Received Command [GetDimInfo] from user [Mack]

[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

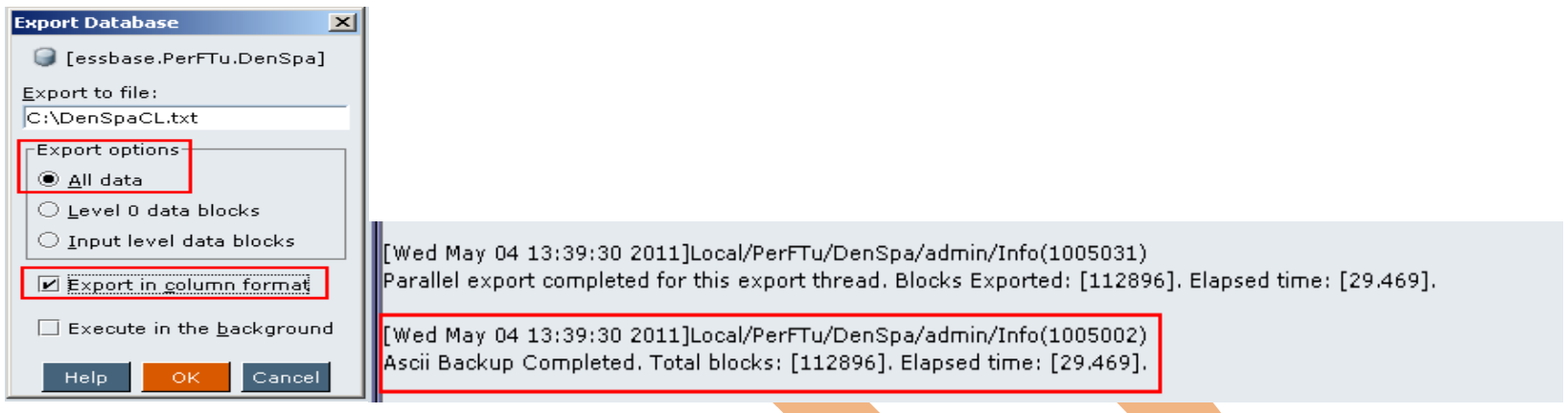



```
[Wed May 04 13:38:14 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [29.344].

[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']
```

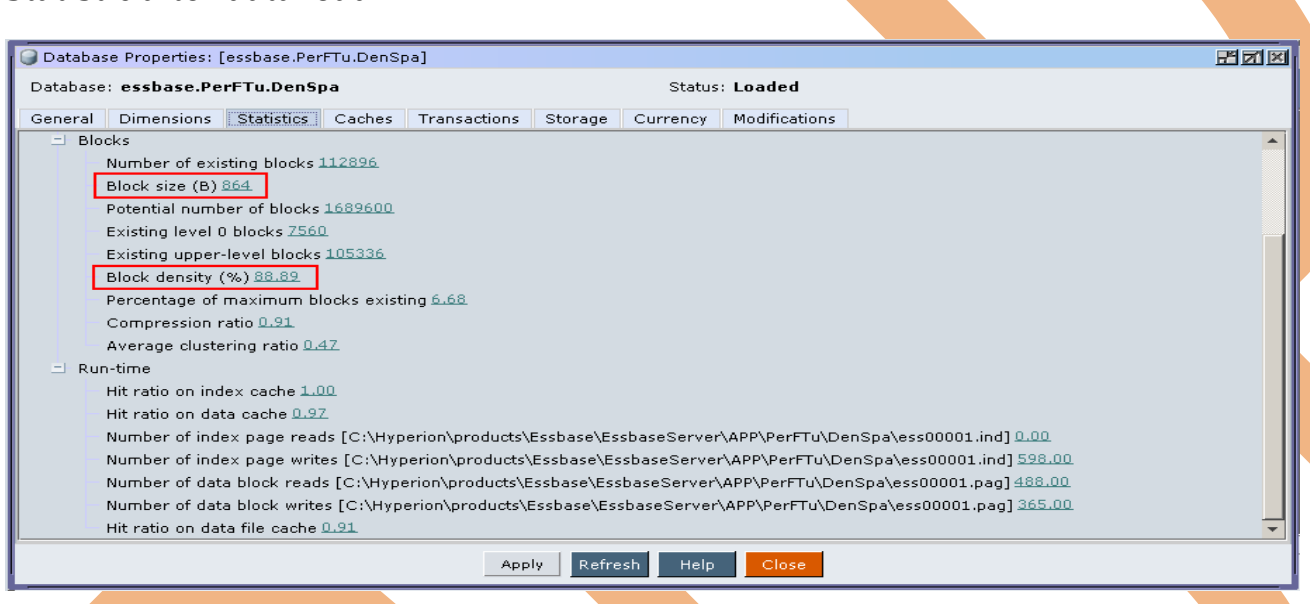
Time to export all level 0 data of cube into text file.



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

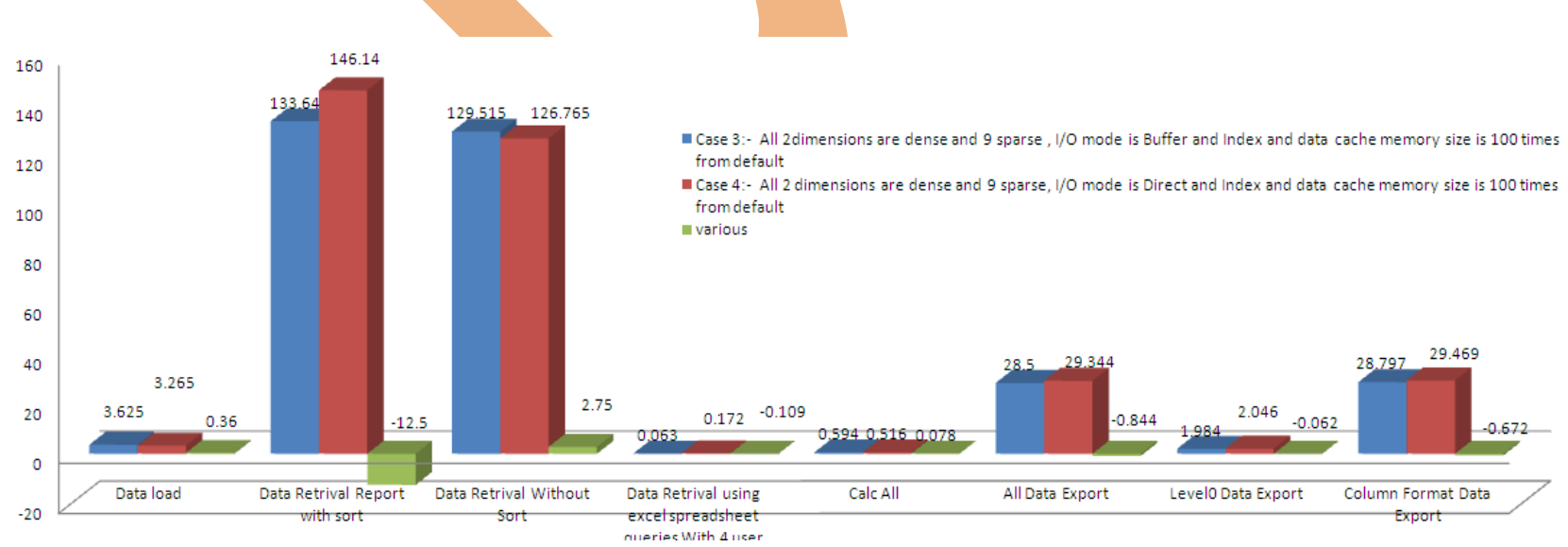


Statistic after data load



Comparison

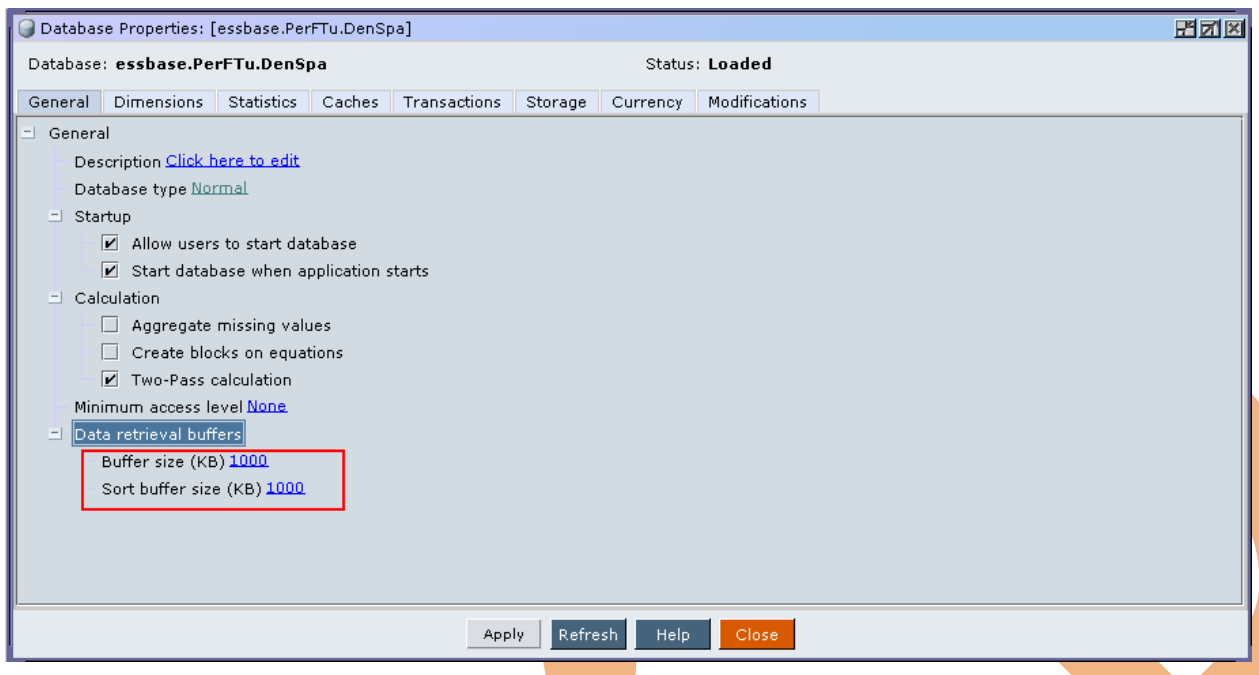
	Data load	Data Retrival Report	Data Retrival Without	Data Retrival using excel spreadsheet queries With 4 user	Calc All	All Data Export	Level0 Data Export	Column Format Data
Case 3:- All 2dimensions are dense and 9 sparse , I/O mode is Buffer and Index and data cache memory size is 100 times from	3.625	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	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			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	Calc All	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	123.187Sec	96.281Sec	0.016Sec	0718Sec	29.047 Sec	2.047Sec	29.516 Sec	Before Data Load	0%	864	Null	Null	1000KB	1000KB
									After Data Load	88.89%	864	7.83MB	93.70MB	1000KB	1000KB

Change data retrieval buffer size and click on apply.



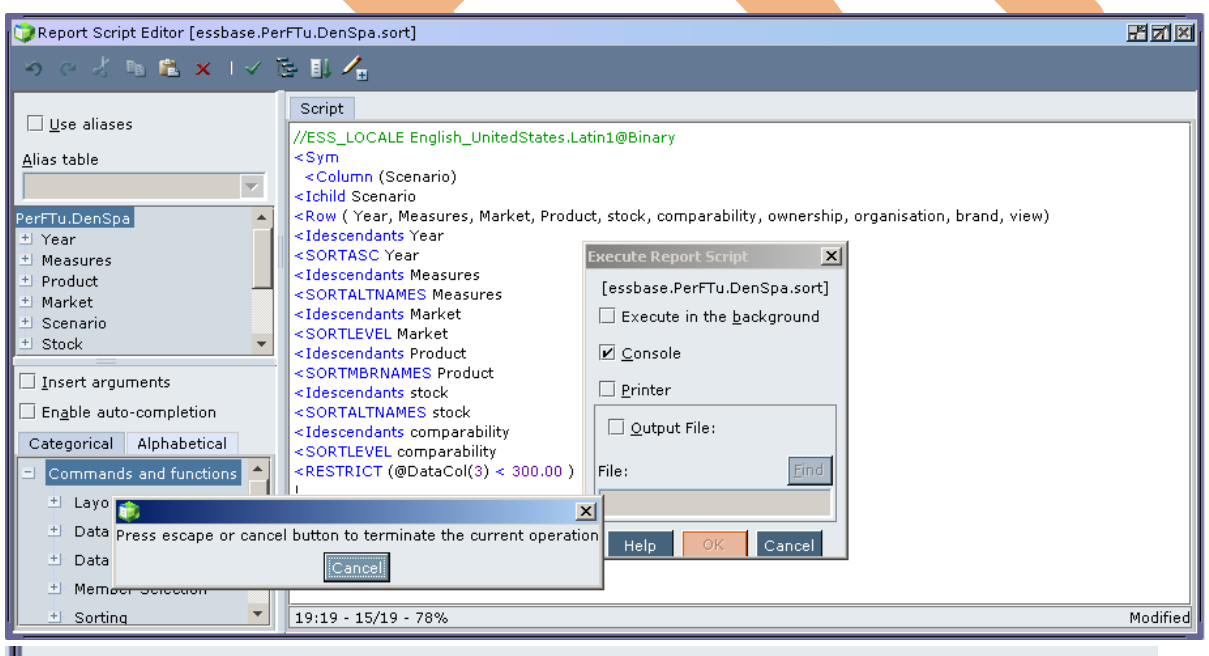
Time to load 20MB data file in to cube.

```
[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”

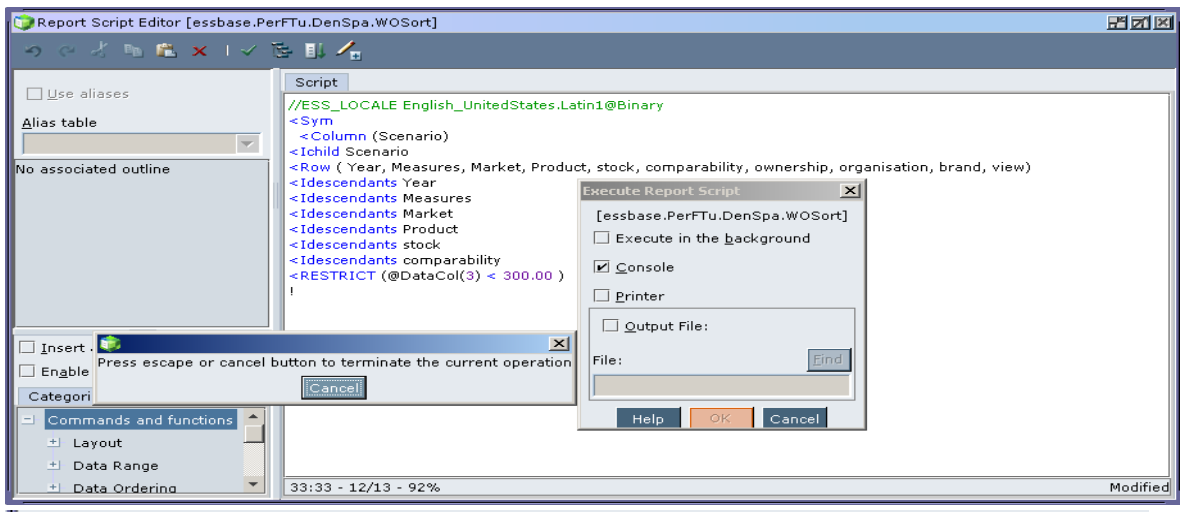
```
[Wed May 04 14:07:58 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.718] seconds

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

Time to execute report script with sort operation




```
[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

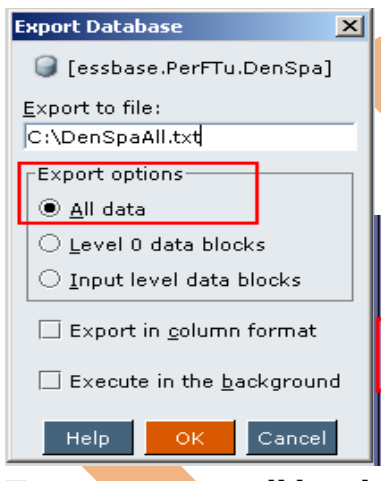



```
[Wed May 04 14:12:58 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[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.

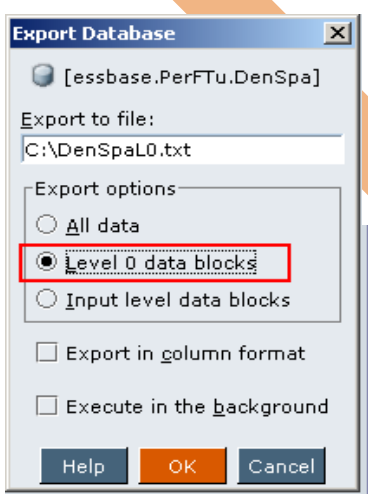
```
[Thu May 05 08:40:44 2011]Local/PerFTu///Info(1013205)
Received Command [Get Database File Information]

[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



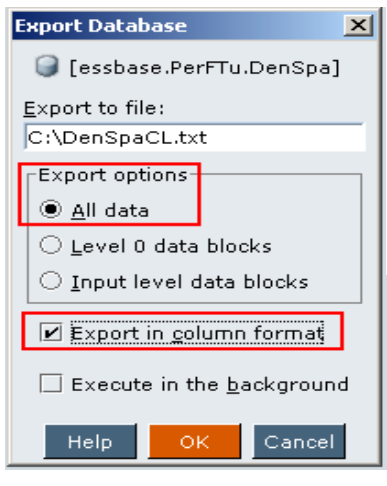

```
[Wed May 04 14:21:33 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [29.047].

[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.



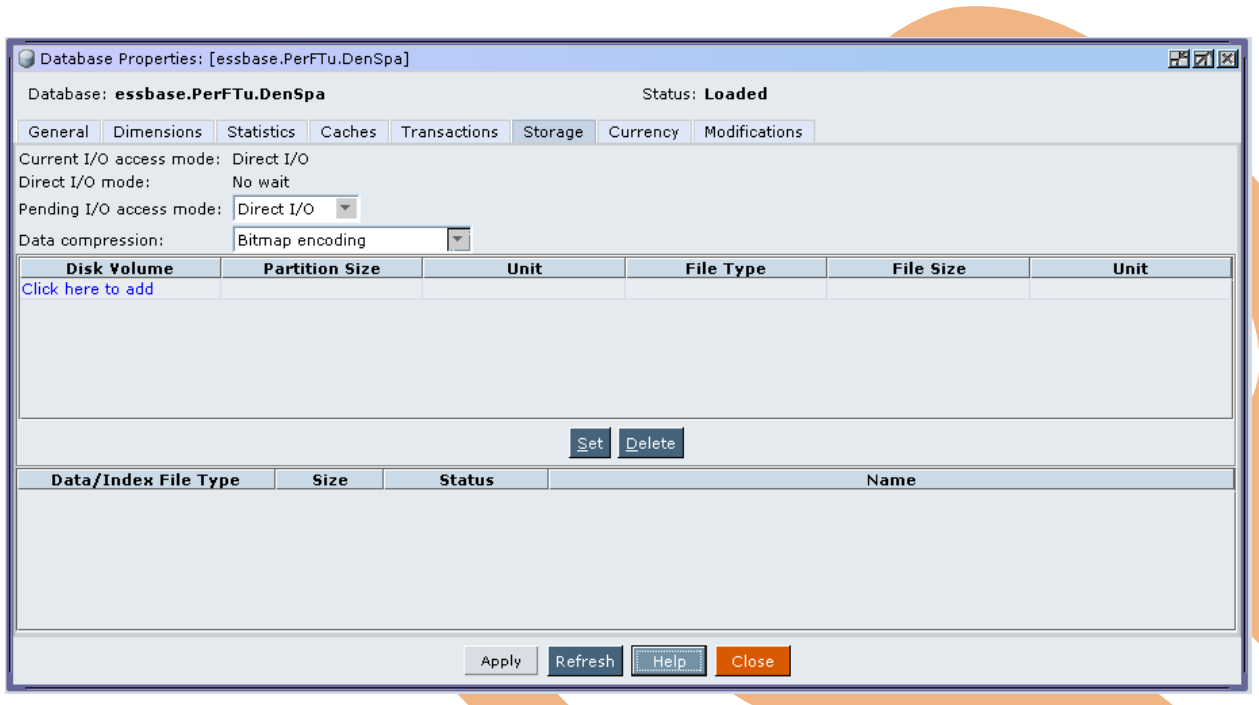

```
[Wed May 04 14:22:44 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [29.516].

[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			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	Calc All	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	2.234Sec 20MB Data File	87.938 Sec	90.563Sec	0.032Sec	0.906Sec	35.328 Sec	3Sec	35.39Sec	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



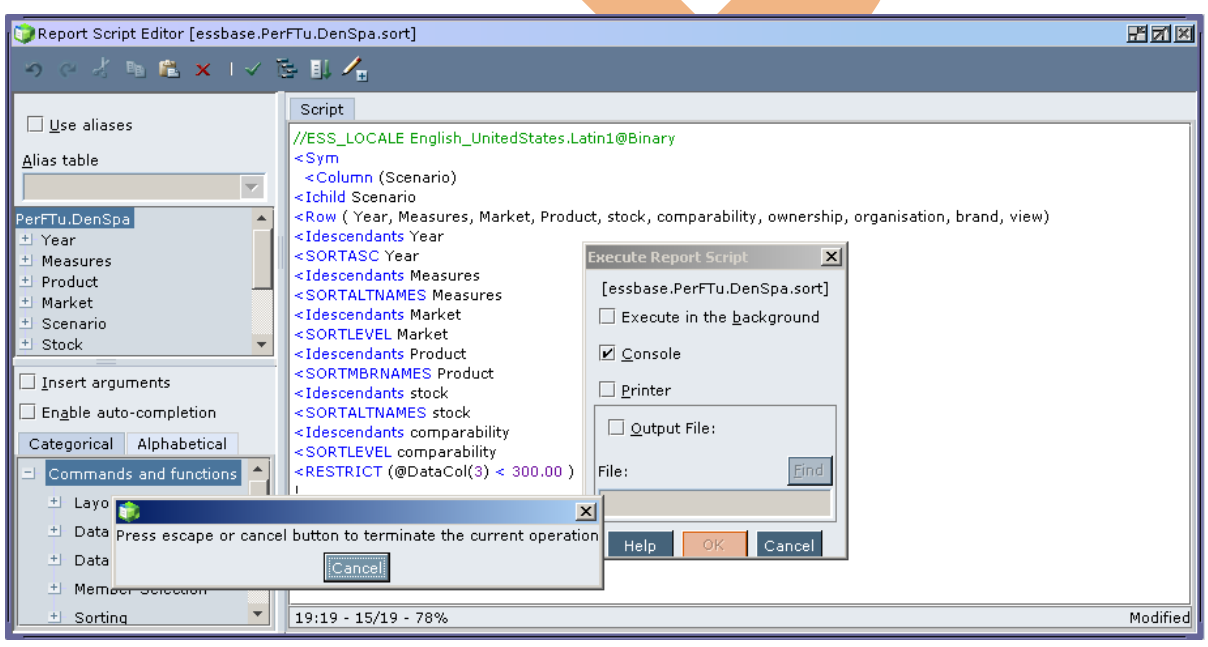
Time to load 20MB data file in to cube.

```
[Wed May 04 14:44:45 2011]Local/PerFTu/DenSpa/admin/Info(1003037)
Data Load Updated [1.45152e+006] cells

[Wed May 04 14:44:45 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [2.234] seconds

[Wed May 04 14:44:45 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]
```

Time to execute “Calc All”

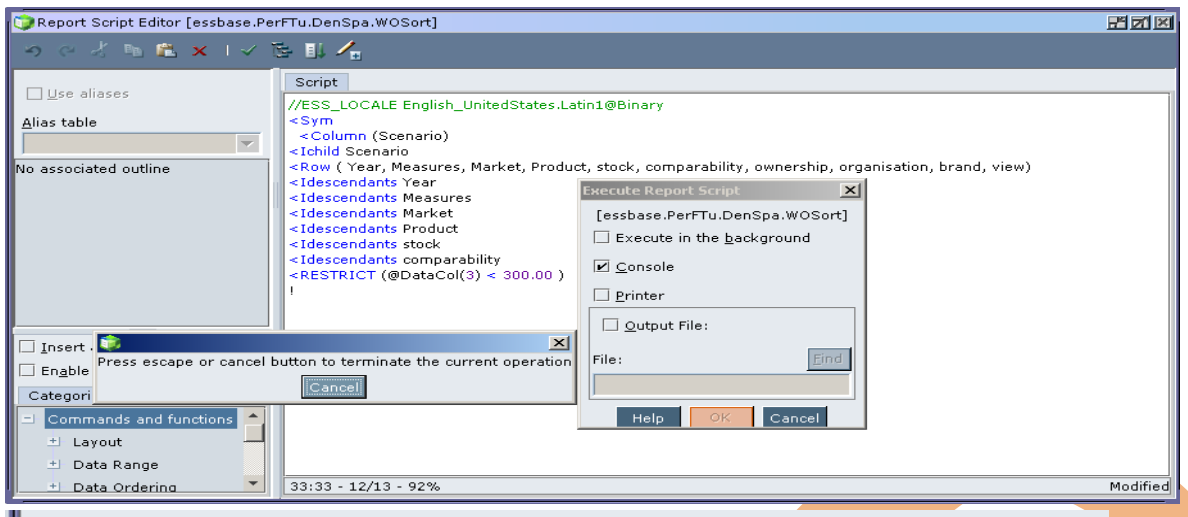
```
[Wed May 04 14:46:06 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.906] seconds

[Wed May 04 14:46:06 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed
```

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

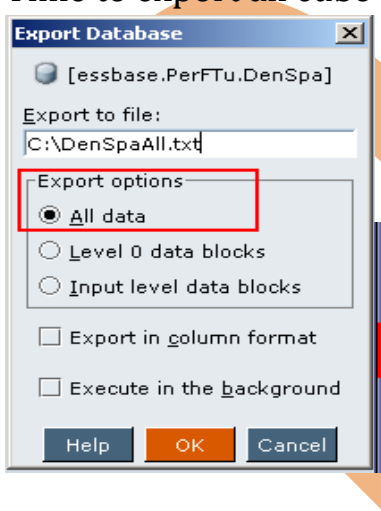



```
[Wed May 04 14:50:30 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[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.

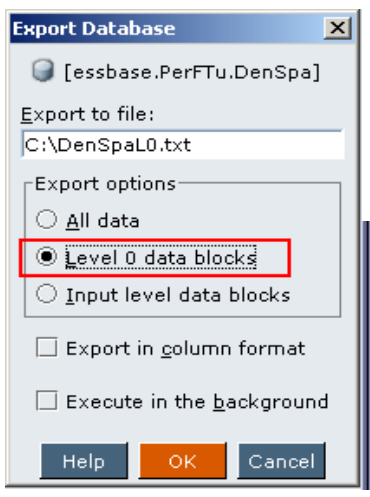
```
[Thu May 05 08:36:59 2011]Local/PerFTu///Info(1013210)
User [Mack] set active on database [DenSpa]

[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



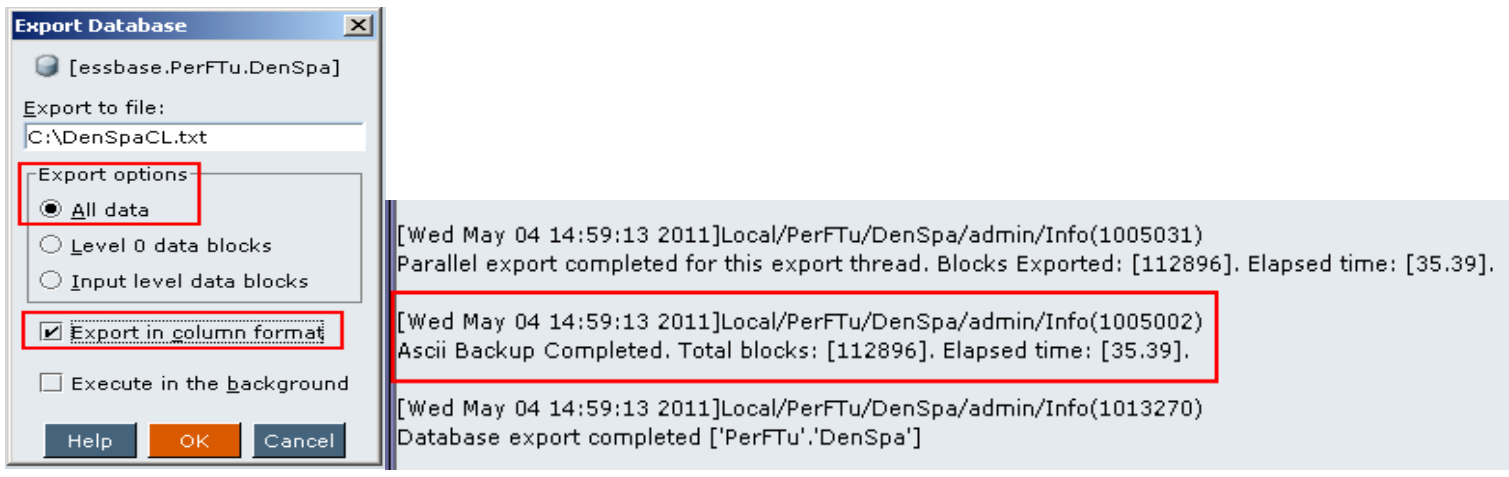

```
[Wed May 04 14:55:20 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [35.328].

[Wed May 04 14:55:20 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [35.328].

[Wed May 04 14:55:20 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu'.'DenSpa']
```

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

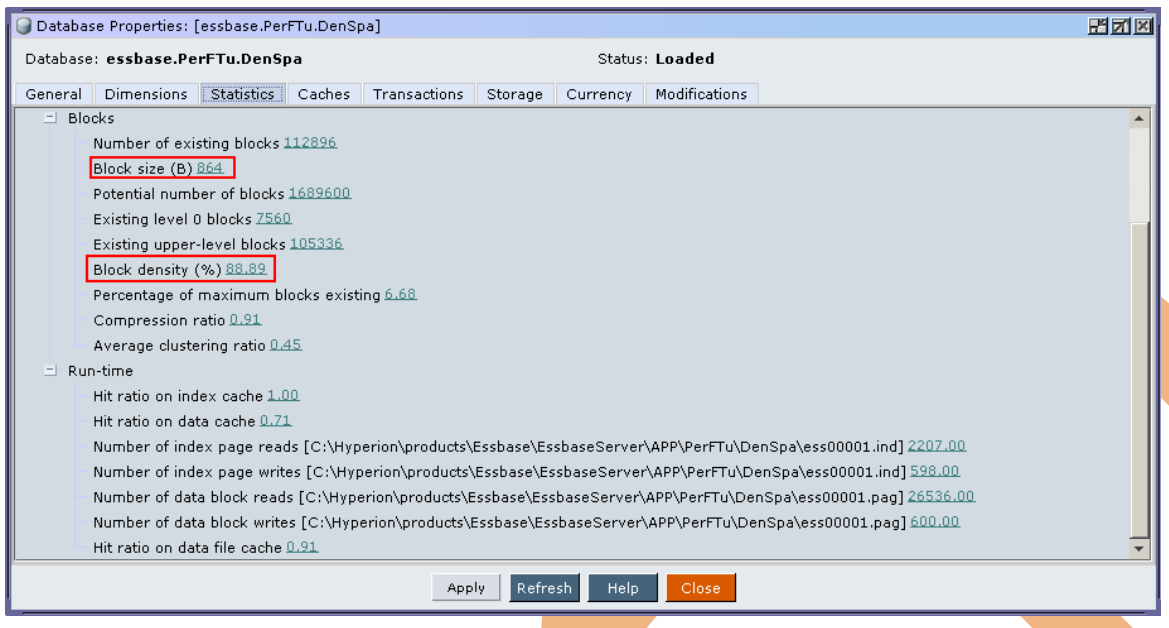



```
[Wed May 04 14:57:36 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [7560]. Elapsed time: [3].

[Wed May 04 14:57:36 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [3].

[Wed May 04 14:57:36 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu'.'DenSpa']
```

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

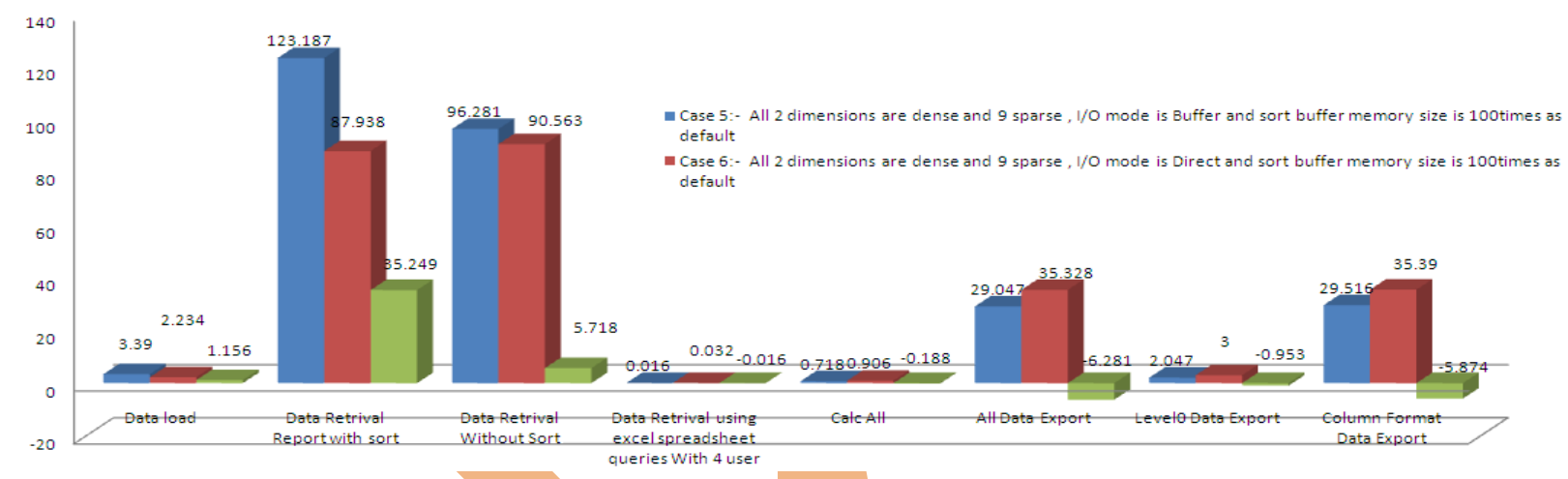


Statistic after data load



Comparison

	Data load	Data Retrival Report	Data Retrival Without	Data Retrival 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

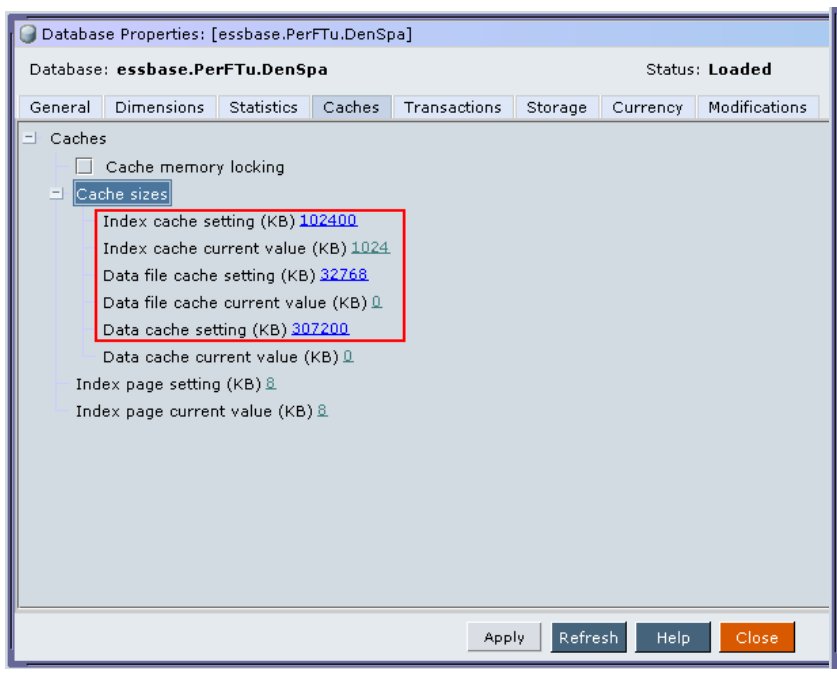


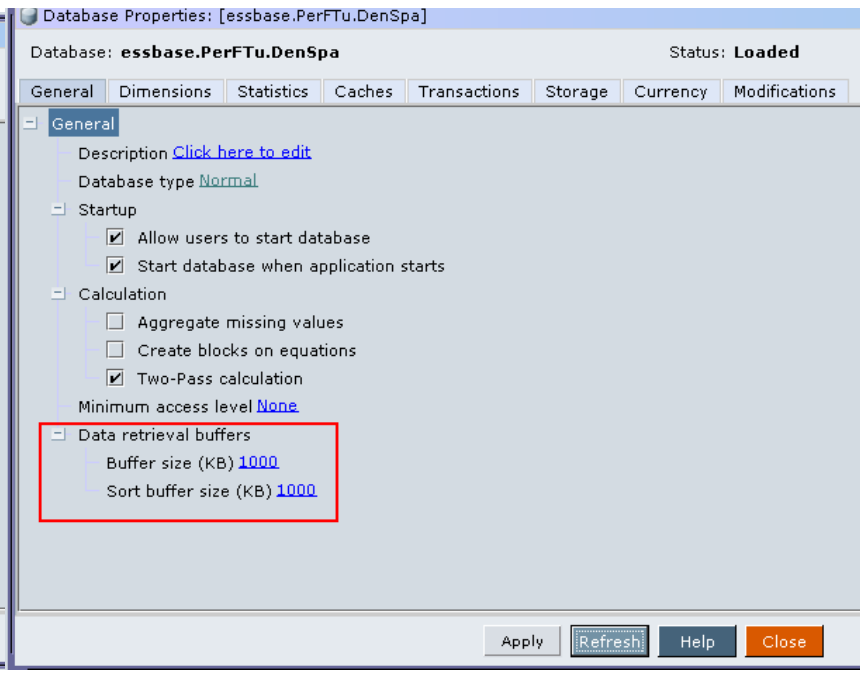
Case 7:- A cube with 2 dense and 9 sparse dimension. Index cache, data cache and data retrieval buffer size is 100times from default. Where input output mode is buffer.

Case statistic

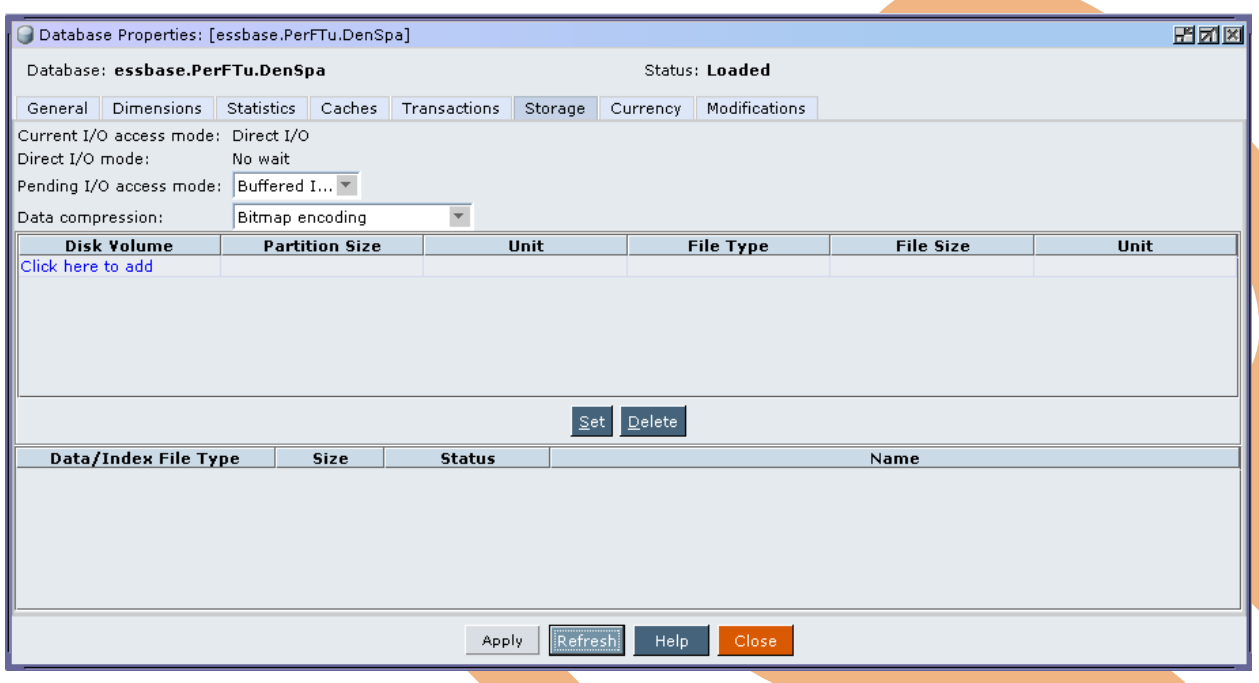
Performance Tuning	Data load	Data Retrieval			Calculation	Data Export				Block Density	Block Size	Index File Size	Data File Size	Data Retrieval Buffer	
		with sort	Without Sort	Using excel spreadsheet queries With 4 user	Calc All	All	Level0	Column Format						Buffer Size	Sort Buffer Size
Case 7:- All 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.





Input output memory is buffer.



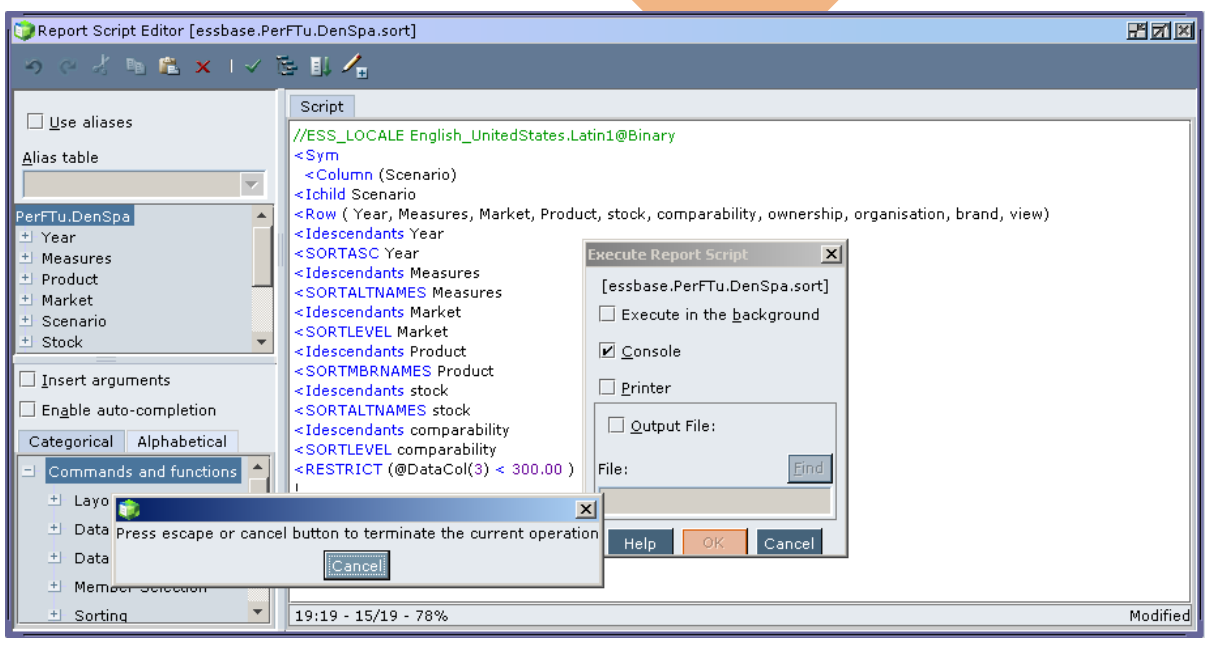
Time to load 20MB data file in to cube.

```
[Wed May 04 15:23:45 2011]Local/PerFTu/DenSpa/admin/Info(1003037)
Data Load Updated [1.45152e+006] cells

[Wed May 04 15:23:45 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [1.844] seconds

[Wed May 04 15:23:45 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]
```

Time to execute “Calc All”

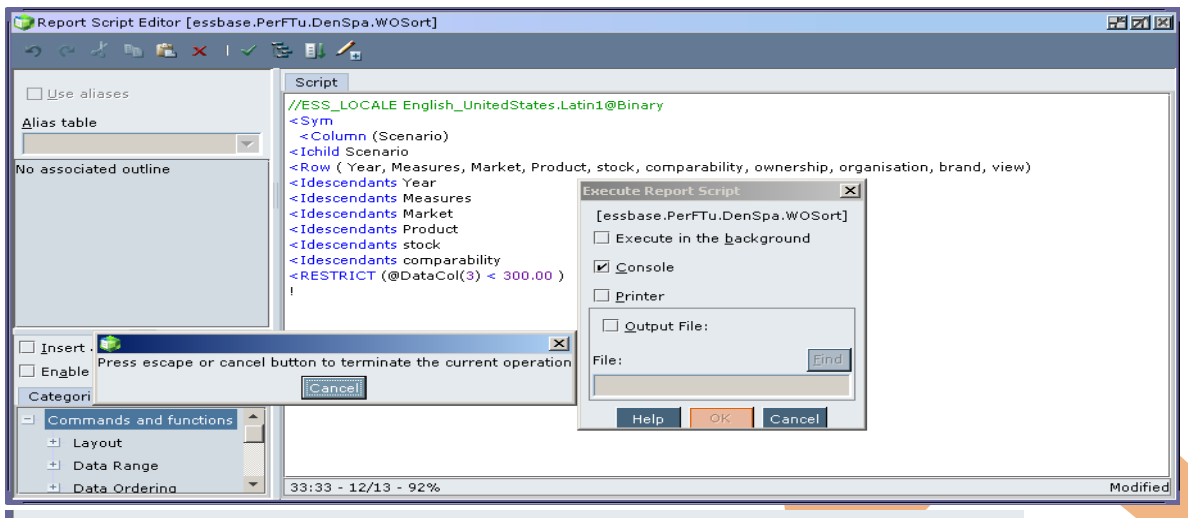
```
[Wed May 04 15:26:52 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.844] seconds

[Wed May 04 15:26:52 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed
```

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

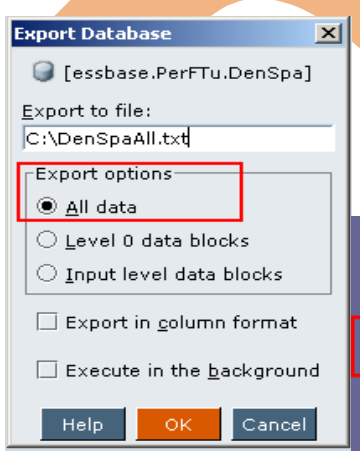



```
[Wed May 04 15:35:24 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[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.

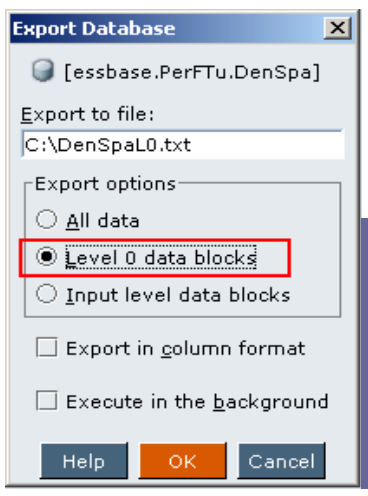
```
[Thu May 05 08:34:15 2011]Local/PerFTu///Info(1013205)
Received Command [Get Database File Information]

[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



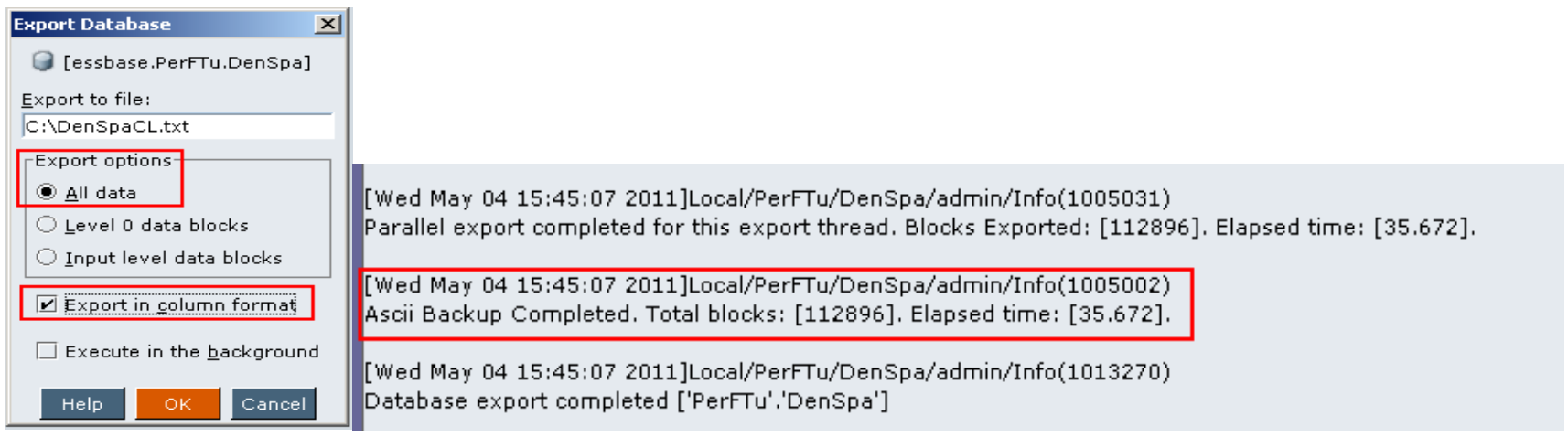

```
[Wed May 04 15:43:27 2011]Local/PerFTu/DenSpa/admin/Info(1005031)
Parallel export completed for this export thread. Blocks Exported: [112896]. Elapsed time: [35.484].

[Wed May 04 15:43:27 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [35.484].

[Wed May 04 15:43:27 2011]Local/PerFTu/DenSpa/admin/Info(1013270)
Database export completed ['PerFTu'.'DenSpa']
```

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

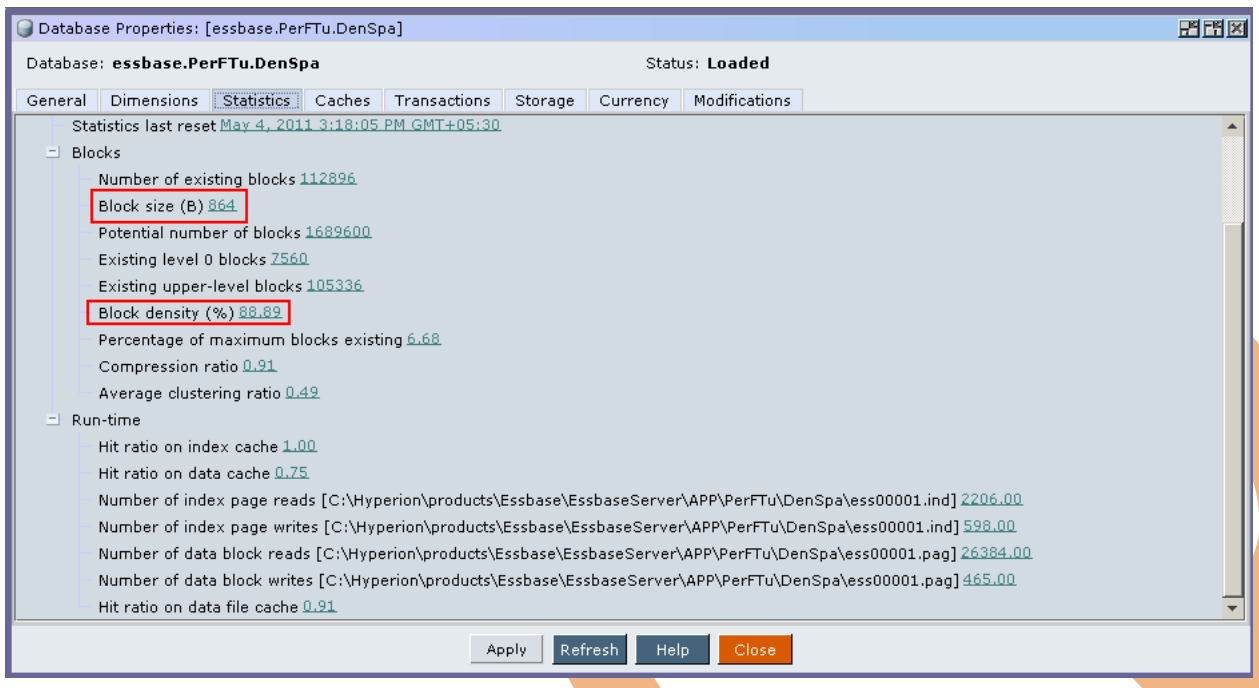



```
[Wed May 04 15:44:17 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [3].

[Wed May 04 15:44:17 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

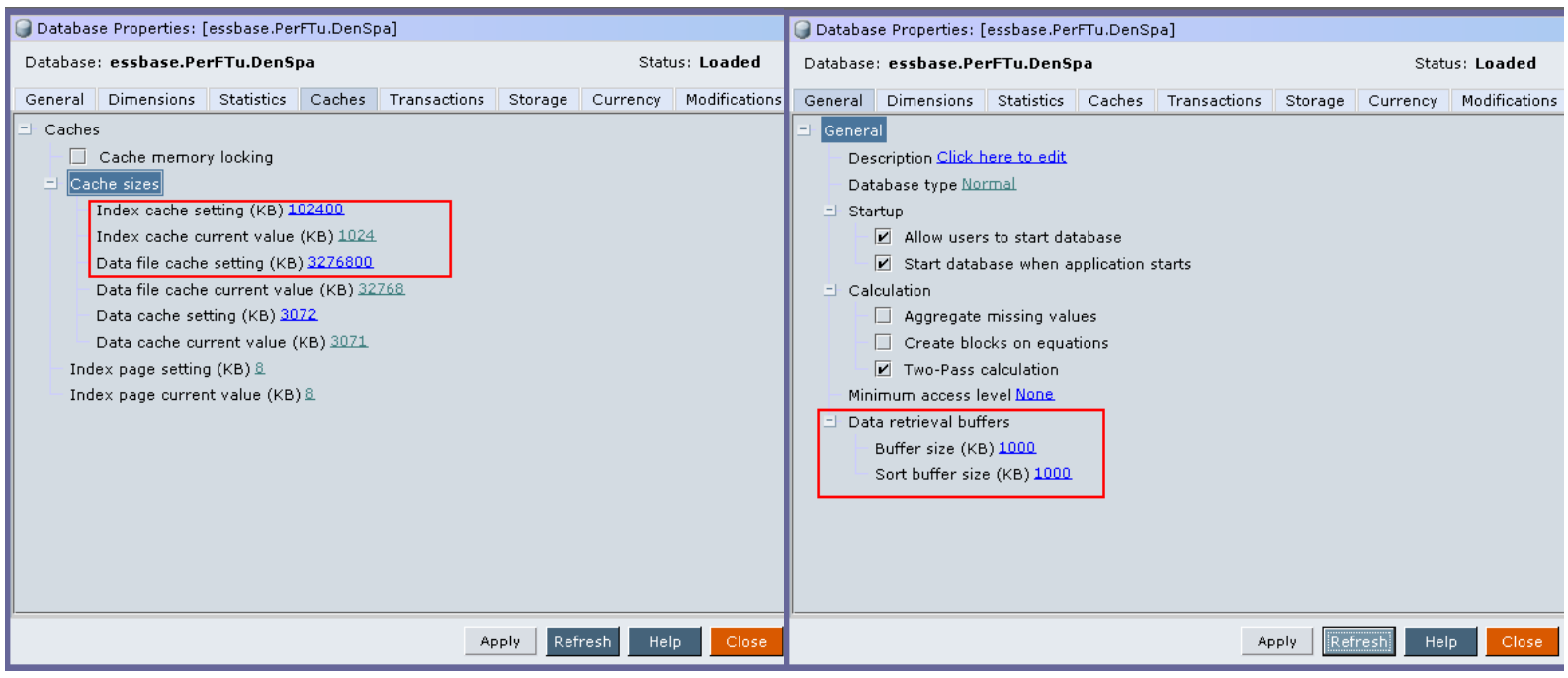


Case 8:- A cube with 2dense and 1 sparse dimension. Index cache, data cache and data retrieval buffer size is 100times from default. Where input output mode is direct.

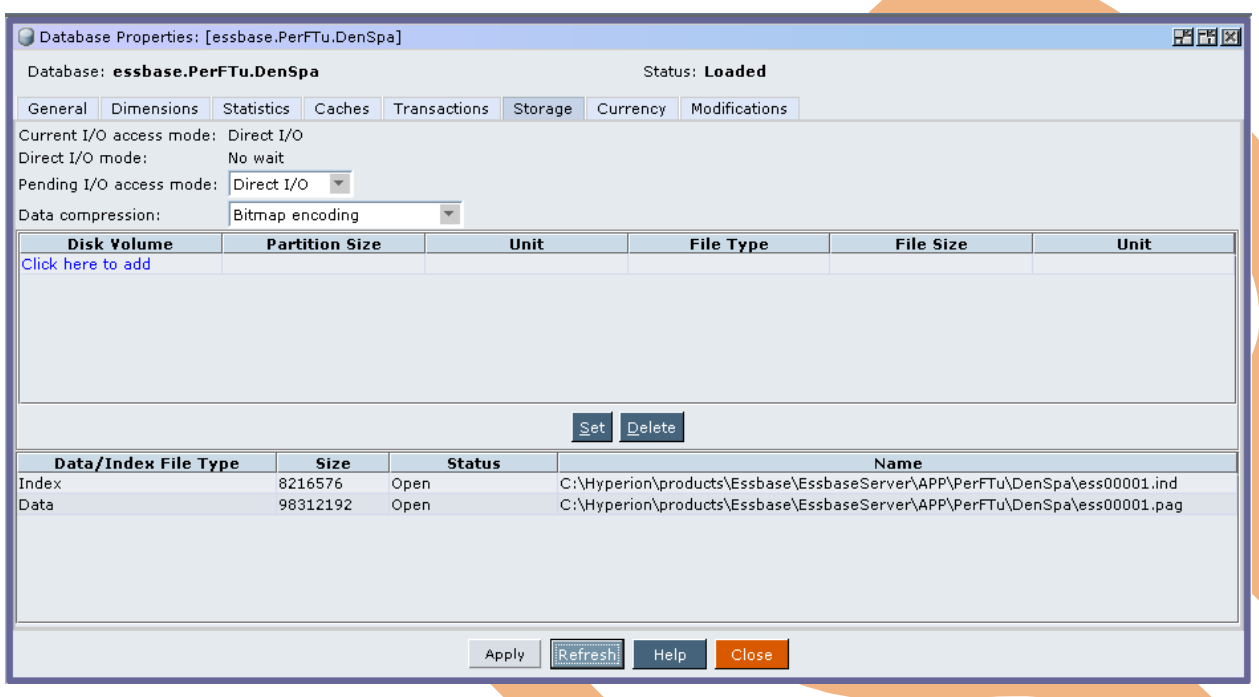
Case statistic

Performance Tuning	Data load	Data Retrieval			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	Calc All	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.



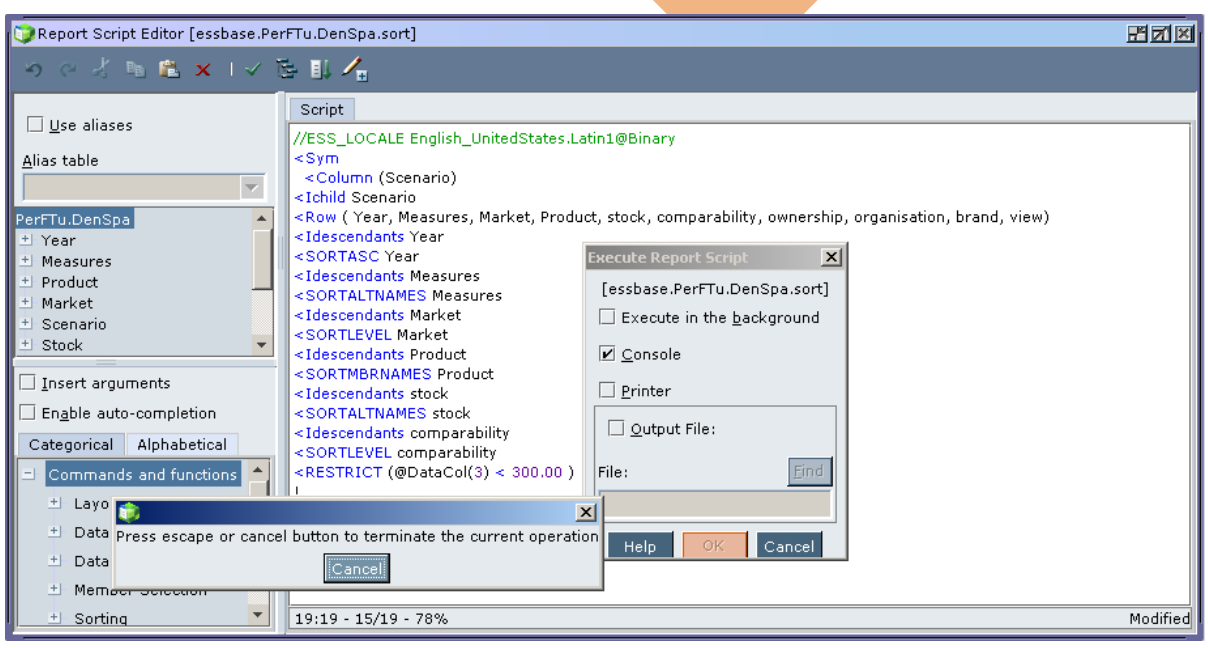
Time to load 20MB data file in to cube.

```
[Wed May 04 15:57:08 2011]Local/PerFTu/DenSpa/admin/Info(1003037)
Data Load Updated [1.45152e+006] cells

[Wed May 04 15:57:08 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [2.281] seconds

[Wed May 04 15:57:08 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]
```

Time to execute “Calc All”

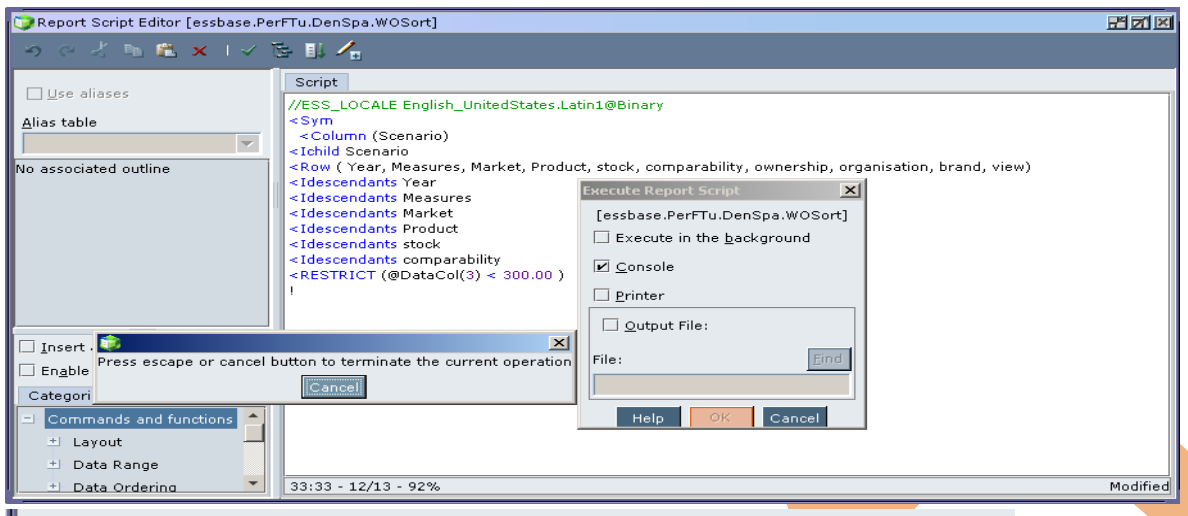
```
[Wed May 04 16:02:58 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.656] seconds

[Wed May 04 16:02:58 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed
```

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

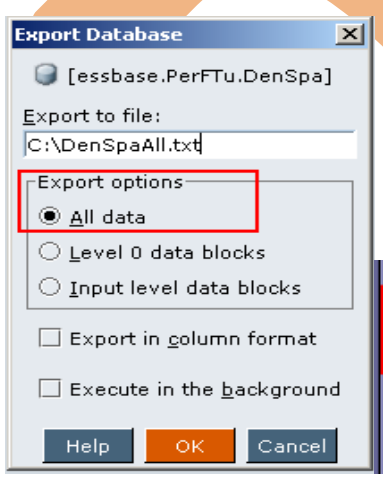



```
[Wed May 04 16:08:39 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[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.

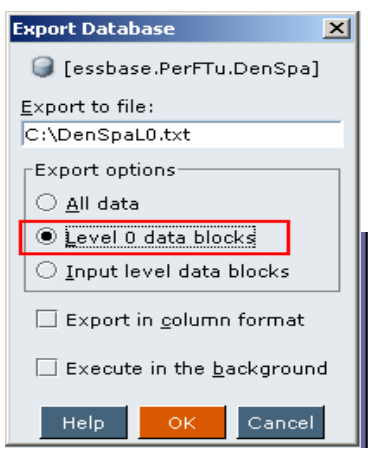
```
[Thu May 05 08:30:28 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

[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



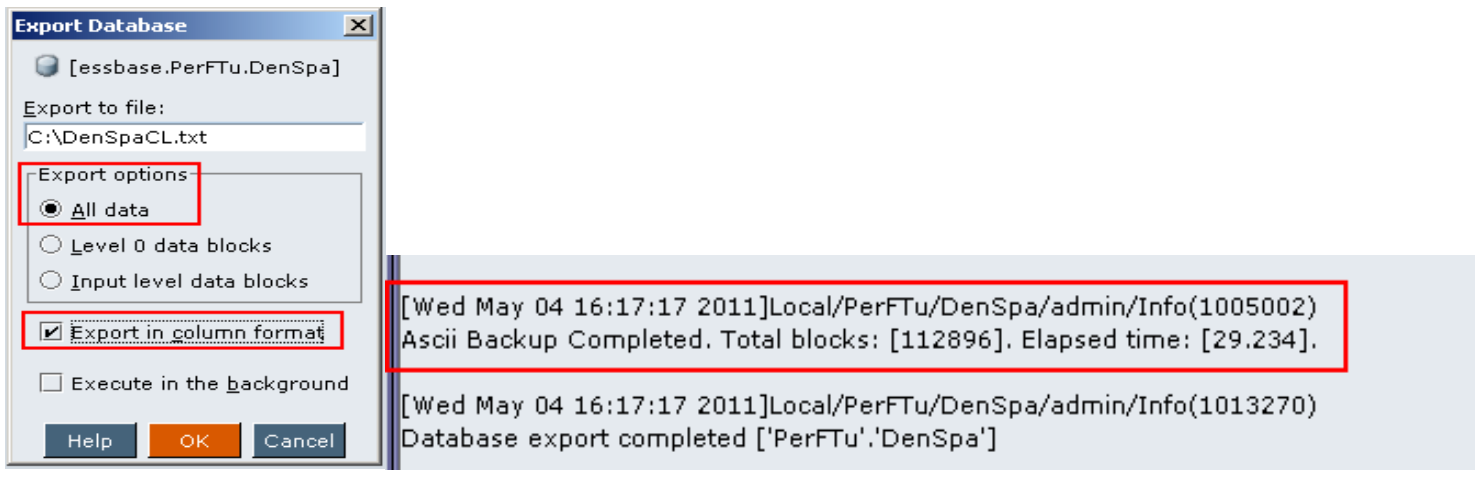

```
[Wed May 04 16:16:14 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [28.89].

[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.

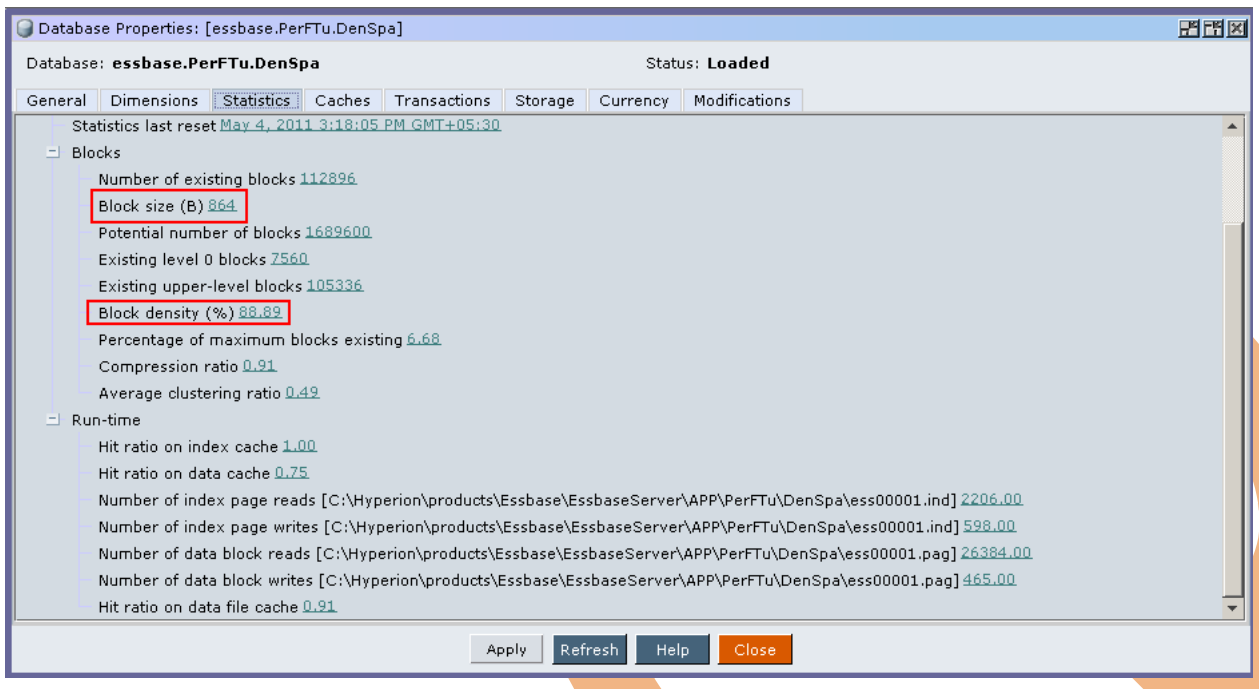



```
[Wed May 04 16:16:33 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [2.062].

[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.

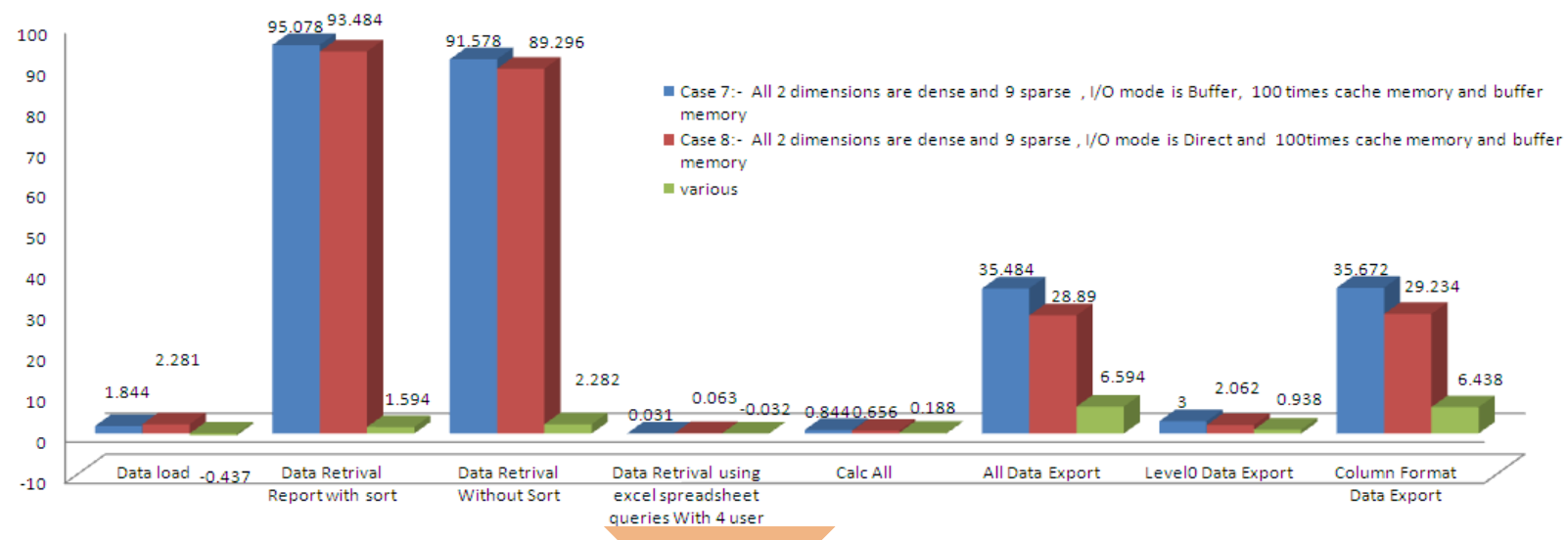


Statistic after data load



Comparison

	Data load	Data Retrival Report	Data Retrival Without	Data Retrival 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

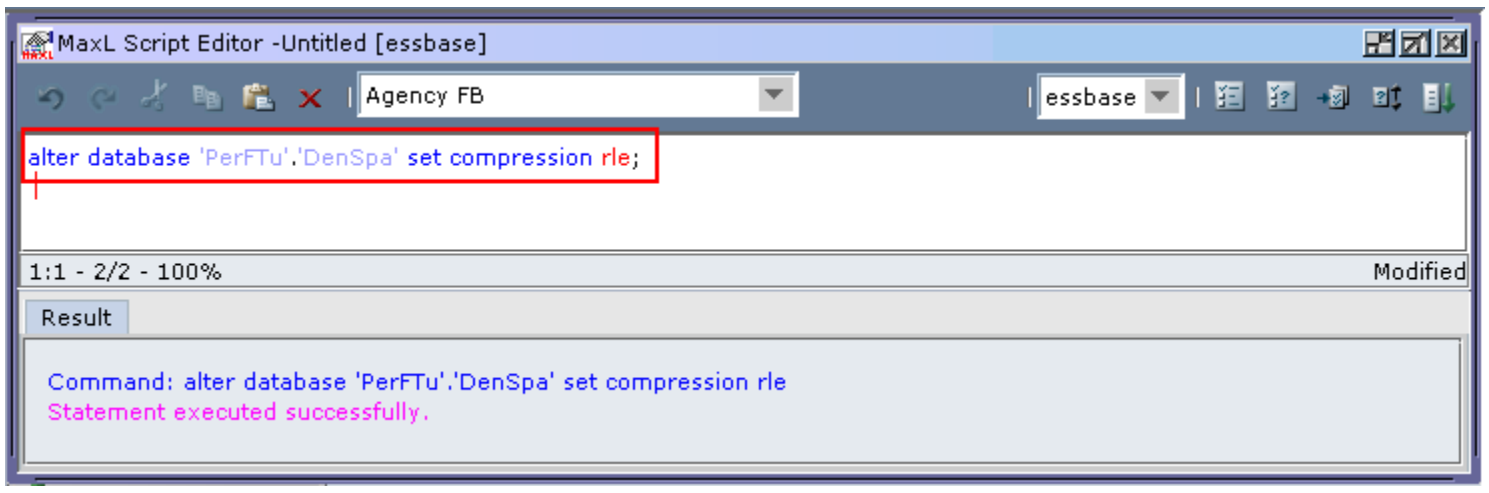


Case 9:- A cube with 2dense and 9sparse dimension. Index cache, data cache and data retrieval buffer memory is 100time from default. Where input output mode is buffer and database is compress.

Case Statistic

Performance Tuning	Dataload	Data Retrival			Calculation	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	Column Format						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	Null	1000KB	1000KB
									After Data Load	88.89%	864	7.83MB	93.70MB	1000KB	1000KB

Changing settings of data base



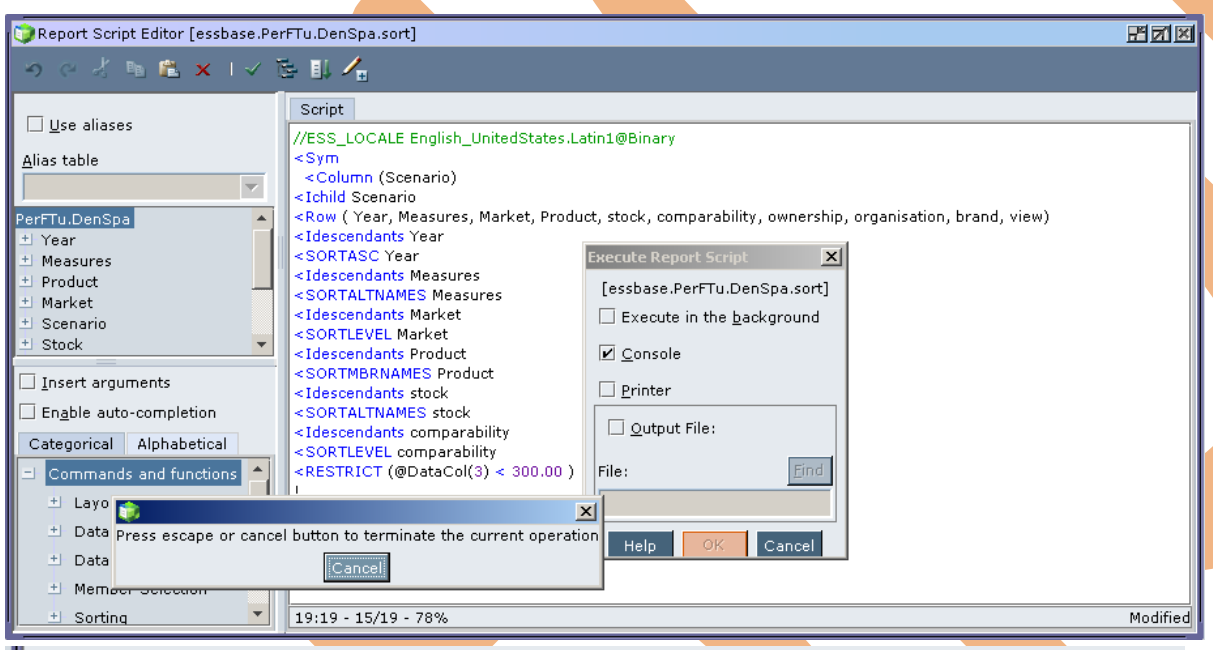
Time to load 20MB data file in to cube.

```
[Sun May 08 12:10:29 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [2.547] seconds

[Sun May 08 12:10:29 2011]Local/PerFTu/DenSpa/admin/Info(1019018)
Writing Parameters For Database [DenSpa]
```

Time to execute “Calc All”

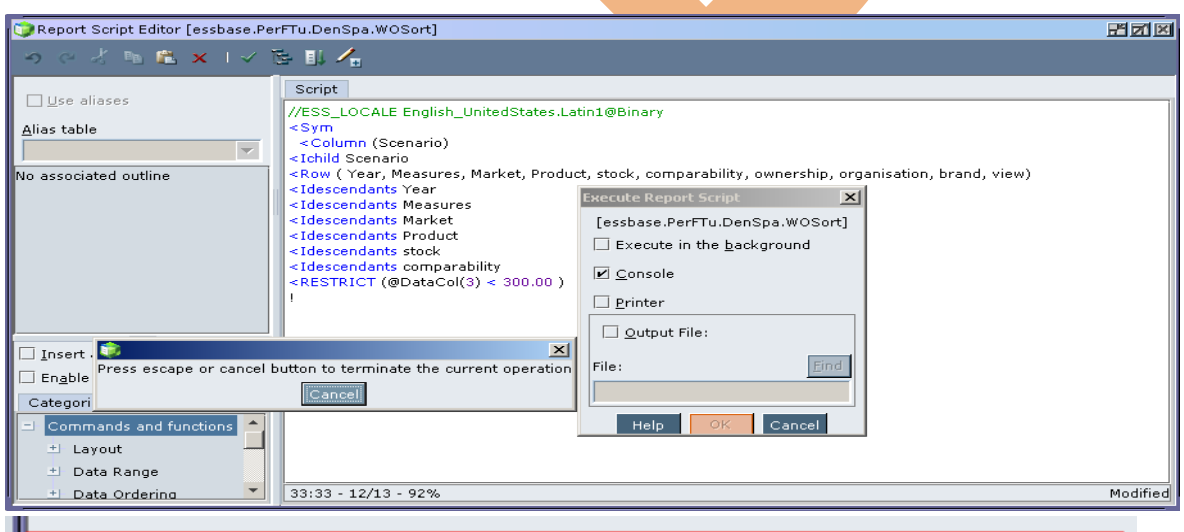
```
[Sun May 08 12:44:52 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [12.5] seconds

[Sun May 08 12:44:52 2011]Local/PerFTu/DenSpa/admin/Info(1013274)
Calculation executed
```

Time to execute report script with sort operation




```
[Sun May 08 13:02:50 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [95.484] seconds

[Sun May 08 13:02:50 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

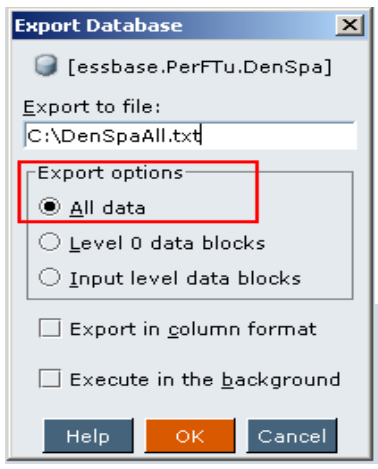



```
[Sun May 08 13:04:05 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[Sun May 08 13:05:41 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [95.672] seconds
```

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

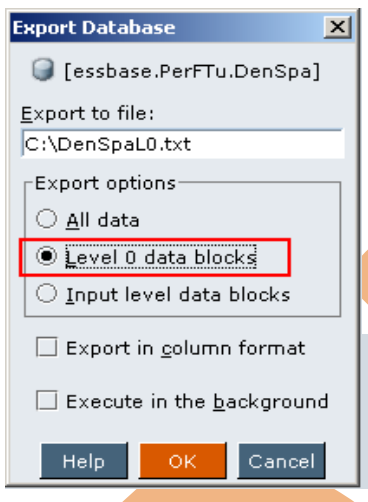
```
[Thu May 05 08:30:28 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

[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



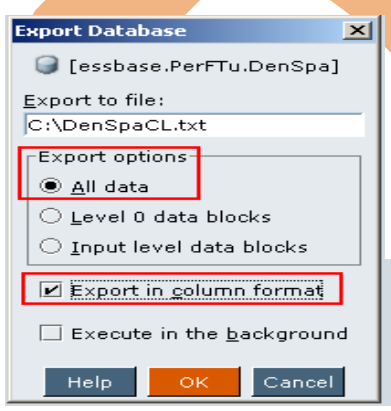

```
[Sun May 08 14:15:44 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [112896]. Elapsed time: [29.125].
```

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




```
[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.




```
[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 Retrival			Calculation	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	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	1.547Sec	108.172 Sec	98.344 Sec	0.063Sec	0.61Sec	1.953 Sec	1.953 Sec	1.953 Sec	Before Data Load	0%	864	Null	Null	1000KB	1000KB
									After Data Load	88.89%	864	7.83MB	93.70MB	1000KB	1000KB

Compression Settings

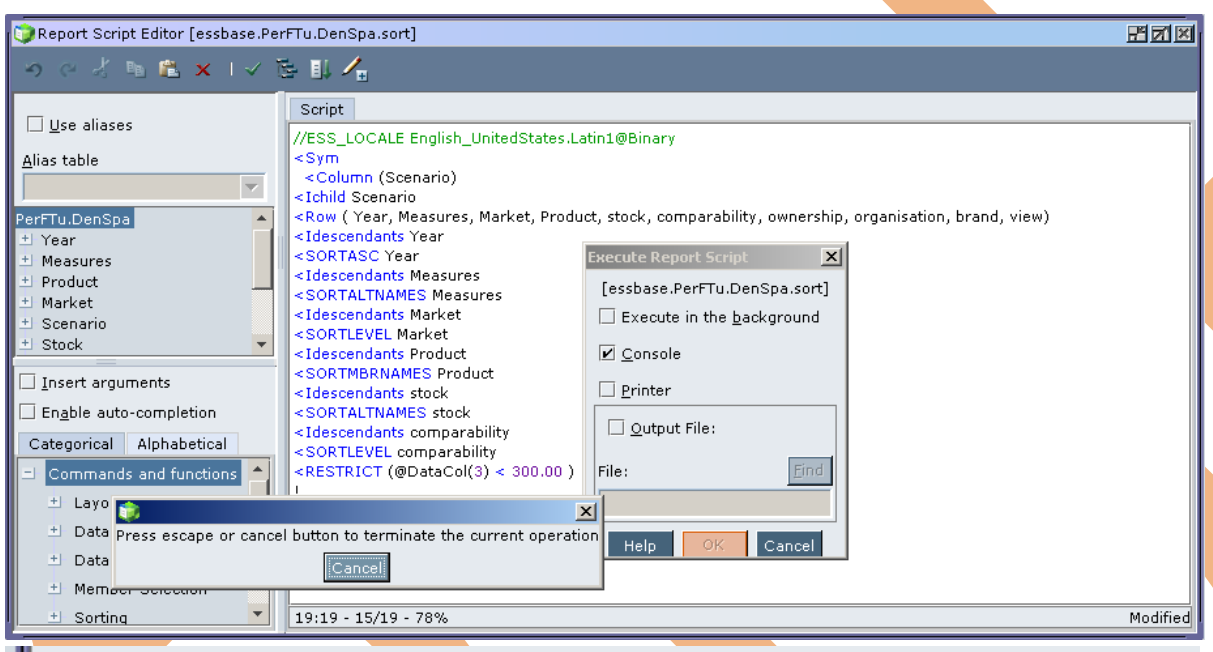
Time to load 20MB data file in to cube.

```
[Sun May 08 14:55:03 2011]Local/PerFTu/DenSpa/admin/Info(1003052)
Data Load Elapsed Time for [dataload_denspa.txt] : [1.547] seconds
```

Time to execute “Calc All”

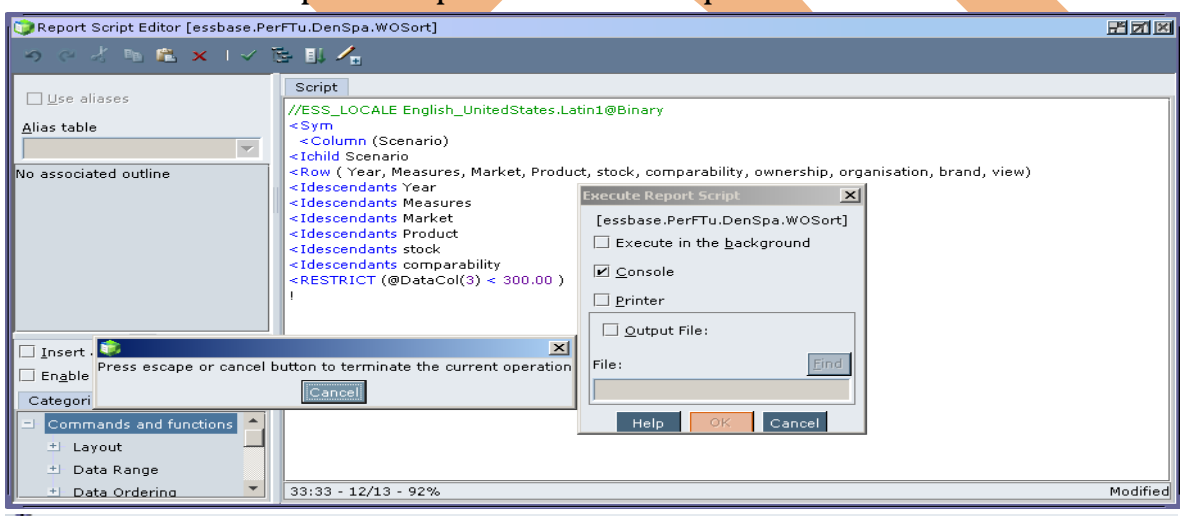
```
[Sun May 08 14:52:38 2011]Local/PerFTu/DenSpa/admin/Info(1012579)
Total Calc Elapsed Time for [calc.csc] : [0.61] seconds
```

Time to execute report script with sort operation




```
[Sun May 08 15:04:10 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [sort.rep]

[Sun May 08 15:05:58 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [sort.rep] : [108.172] seconds
```

Time to execute report script without sort operation

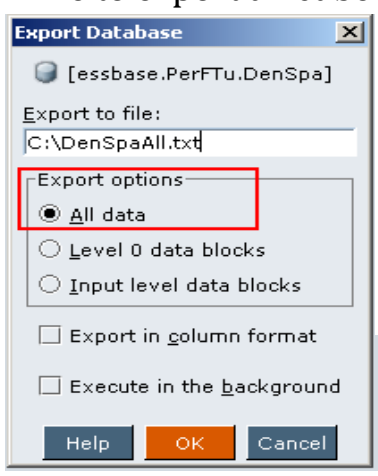



```
[Sun May 08 15:07:41 2011]Local/PerFTu/DenSpa/admin/Info(1013165)
Received Command [Report] from user [admin] using [WOSort.rep]

[Sun May 08 15:09:20 2011]Local/PerFTu/DenSpa/admin/Info(1001103)
Regular Extractor Elapsed Time for [WOSort.rep] : [98.344] seconds
```

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

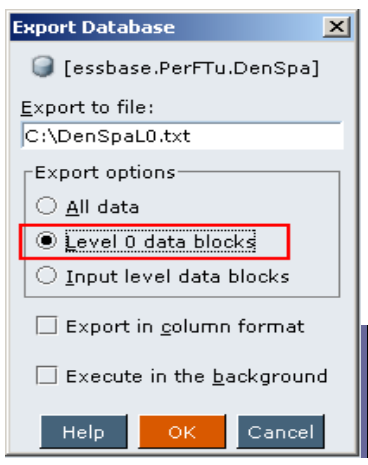
```
[Thu May 05 08:30:28 2011]Local/PerFTu/DenSpa/Gaurav/Info(1020082)
Spreadsheet Extractor Big Block Allocs -- Dyn.Calc.Cache : [1] non-Dyn.Calc.Cache : [0]

[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



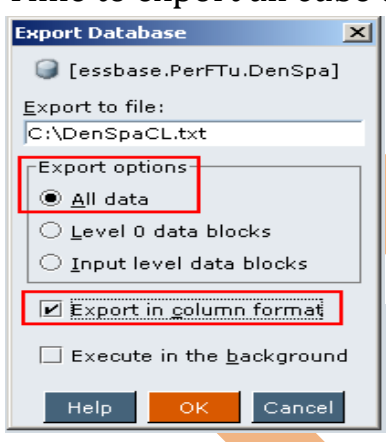

```
[Sun May 08 15:10:37 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [1.953].
```

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

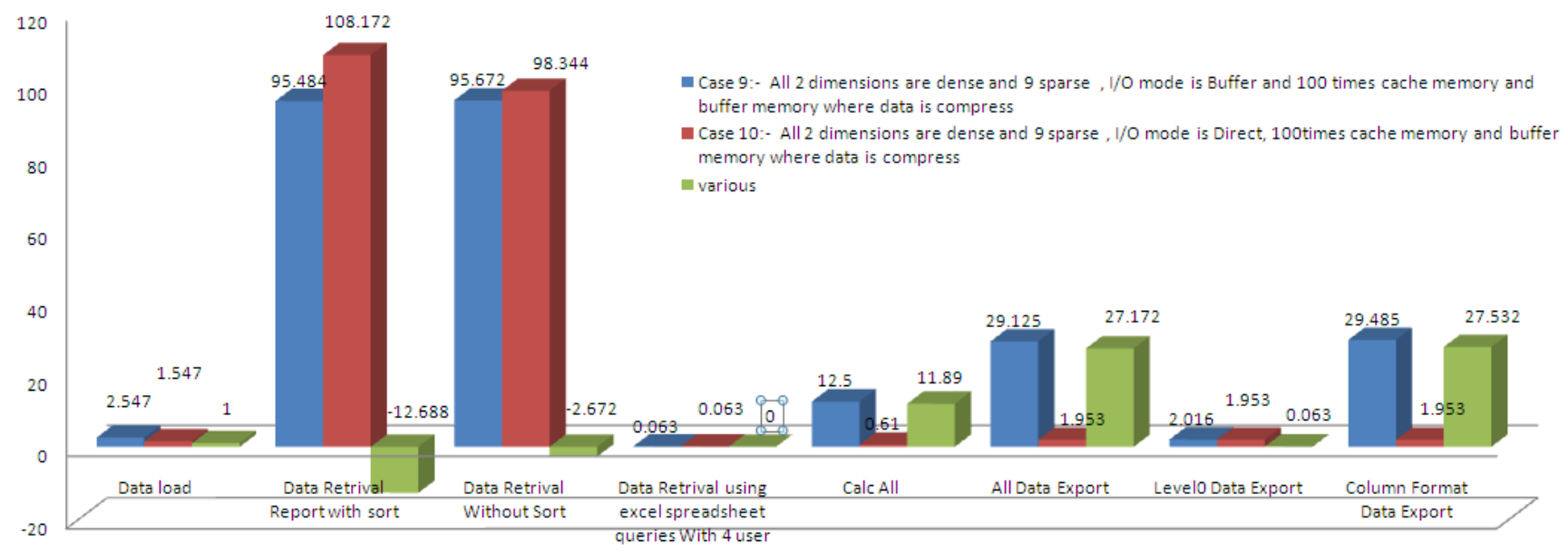



```
[Sun May 08 15:11:39 2011]Local/PerFTu/DenSpa/admin/Info(1005002)
Ascii Backup Completed. Total blocks: [7560]. Elapsed time: [1.953].
```

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




```
[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 Retrival Report	Data Retrival Without	Data Retrival 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