Cluster Nucleus Session End Statistics

In addition to the end-of-session statistics printed by every Adabas nucleus, the statistics for a cluster nucleus also include global cache and lock statistics.

If you are running the selectable unit Adabas Online System (AOS), all of the statistics shown in the following sample output are displayed.

If you are running only the demo version of AOS delivered with Adabas, the statistics displayed are limited as follows:

Section	Displays statistics only for...
Global Cache Statistics	totals, DS, and NI
Global Lock Statistics	buffer flush, hold ISN, new data RABN, and global update command sync locks

This chapter covers the following topics:

- General Nucleus Information
- Input/Output Statistics
- Command Statistics
- User Statistics
- Efficiency Statistics
- Global Cache Statistics (Cluster Nucleus Only)
- Global Lock Statistics (Cluster Nucleus Only)
- Data Set Activity Statistics

General Nucleus Information

```
The   A d a b a s  nucleus session

Started  2001-02-13 22:58  and  ended  2001-02-13 23:05

Duration      00000:06:59   hours
Wait-time     00000:02:26   hours
Cpu-time      00000:00:53   hours
```

Input/Output Statistics

- I/O Counts (Including Initialization)

- Log Reads and Buffer Efficiency
- Distribution of ASSO/DATA I/Os by Volser Number (Excluding Initialization)

I/O Counts (Including Initialization)

	READS	WRITES
ASSO	4710	6913
DATA	1750	2853
WORK	3	7251
PLOG	0	0
CLOG	0	0
Total	6463	17017

Log Reads and Buffer Efficiency

Log. reads	173,393
Buffer eff.	26.8

Distribution of ASSO/DATA I/Os by Volser Number (Excluding Initialization)

Vol-ser	High RABN	Count
WRKMO1 (ASSO	8082)	11599
WRKMO1 (DATA	5990)	4603
TOTAL		16202

Command Statistics

- Count of Calls Executed and Threads Used
- Distribution of Commands by Source
- Distribution of Commands by Thread
- Distribution of Commands by File
- Distribution of Commands by Type

Count of Calls Executed and Threads Used

A d a b a s	executed	10,249 calls
	in	8 threads

Distribution of Commands by Source

Source	Number
Remote commands	0
Local commands	10,102
Internal commands	144
Operator commands	3

Distribution of Commands by Thread

Thread	Number
1	2,657
2	1,803
3	1,401
4	1,300
5	1,193
6	977
7	917
8	1
Total	10,249

Distribution of Commands by File

File	Number
0	4,281
30	5,968
Total	10,249

Distribution of Commands by Type

Cmd-type	Number
A1/4	1,968
CL	44
ET	4,040
N1/2	2,000
OP	43
UC	7
REST	2,147
Total	10,249

User Statistics

```
There were        43  users    participating

Most calls (       303)    initiated by user   USADFMB2

Most I/O-s (       331)    initiated by user   USADFMB2

Most thr.-time (00:00:08) was  used  by user   USADFMB1
```

Efficiency Statistics

```
46 Formats had to be translated

           0 Formats had to be overwritten

           0 Autorestarts were done

           0 Throw-backs due to  ISN  problem
```

```
          0 Throw-backs due to space problem

        143 Bufferflushes   were done
```

- Buffer Flush Information
- Actual High-water Marks for Major Pools (Except the Bufferpool)

Buffer Flush Information

```
Flush phases                            212
Blocks flushed                       28,503
Flush I/Os

Flush requests:
 Return immediately                  52,658
 Return after logical flush               0
 Return after entire  flush              15
```

Actual High-water Marks for Major Pools (Except the Bufferpool)

```
AREA          ADARUN PARM      HIGH-WATER-MARK
-----------------------------------------------
AB  -POOL    NAB=    2000        51712 (  0 %)
CQ  -POOL    NC =   96000         3840 (  4 %)
DUQ -POOL    LDE=    5000            0 (  0 %)
FI  -POOL    LFP=   20000         6560 ( 32 %)
HQ  -POOL    NH =   16856          588 (  3 %)
SC  -POOL    LCP=   10000            0 (  0 %)
TBI -POOL    LI =   10000            0 (  0 %)
TBS -POOL    LQ =  100000            0 (  0 %)
UQ  -POOL    NU =     500         8844 (  6 %)
UQF -POOL    NU =     500         1512 (  3 %)
WORK-POOL    LWP=  800000       114296 ( 14 %)
XID -POOL    XID=
```

Global Cache Statistics (Cluster Nucleus Only)

```
Cast-out dir   :             188
 Synchronous   :             188
 Asynchronous  :               0

Unlock cast-out:             212
 Synchronous   :             132
 Asynchronous  :              80

Directory reads:               3
 Synchronous   :               0
 Asynchronous  :               3
```

- Totals
- Address Converter (AC)
- Data Storage (DS)

- Data Storage Space Table (DSST)
- File Control Block (FCB)
- Normal Index (NI)
- Upper Index (UI)
- File Statistics for Files with More than 25% of the Total Cache Statistics

Totals

```
Reads          :          15,006
 Synchronous   :          15,006
 Asynchronous  :               0

 In cache      :           6,245
 Not in cache  :           8,761
 Area full     :               0

Writes         :          66,726
 Synchronous   :          66,726
 Asynchronous  :               0

 Written       :          66,726
 Not written   :               0
 Area full     :               0

Validates      :         327,623
 Block invalid :               0

Cast-out reads :          28,503
 Synchronous   :          28,503
 Asynchronous  :               0

Deletes        :               0
 Timeouts      :               0
```

Address Converter (AC)

```
Reads          :               8
 Synchronous   :               8
 Asynchronous  :               0

 In cache      :               0
 Not in cache  :               8
 Area full     :               0

Writes         :           2,004
 Synchronous   :           2,004
 Asynchronous  :               0

 Written       :           2,004
 Not written   :               0
 Area full     :               0

Validates      :           5,983
 Block invalid :               0

Cast-out reads :              72
```

```
 Synchronous   :              72
 Asynchronous  :               0

Deletes        :               0
 Timeouts      :               0
```

Data Storage (DS)

```
Reads          :           2,775
 Synchronous   :           2,775
 Asynchronous  :               0

 In cache      :              26
 Not in cache  :           2,749
 Area full     :               0

Writes         :           4,972
 Synchronous   :           4,972
 Asynchronous  :               0

 Written       :           4,972
 Not written   :               0
 Area full     :               0

Validates      :           9,965
 Block invalid :               0

Cast-out reads :           2,921
 Synchronous   :           2,921
 Asynchronous  :               0

Deletes        :               0
 Timeouts      :               0
```

Data Storage Space Table (DSST)

```
Reads          :               2
 Synchronous   :               2
 Asynchronous  :               0

 In cache      :               0
 Not in cache  :               2
 Area full     :               0

Writes         :           2,004
 Synchronous   :           2,004
 Asynchronous  :               0

 Written       :           2,004
 Not written   :               0
 Area full     :               0

Validates      :           4,490
 Block invalid :               0

Cast-out reads :              69
 Synchronous   :              69
 Asynchronous  :               0

Deletes        :               0
 Timeouts      :               0
```

File Control Block (FCB)

```
Reads          :               5
 Synchronous   :               5
 Asynchronous  :               0

 In cache      :               0
 Not in cache  :               5
 Area full     :               0

Writes         :           4,970
 Synchronous   :           4,970
 Asynchronous  :               0

 Written       :           4,970
 Not written   :               0
 Area full     :               0

Validates      :          56,029
 Block invalid :               0

Cast-out reads :             119
 Synchronous   :             119
 Asynchronous  :               0

Deletes        :               0
 Timeouts      :               0
```

Normal Index (NI)

```
Reads          :          12,057
 Synchronous   :          12,057
 Asynchronous  :               0

 In cache      :           6,219
 Not in cache  :           5,838
 Area full     :               0

Writes         :          44,096
 Synchronous   :          44,096
 Asynchronous  :               0

 Written       :          44,096
 Not written   :               0
 Area full     :               0

Validates      :          25,685
 Block invalid :               0

Cast-out reads :          22,973
 Synchronous   :          22,973
 Asynchronous  :               0

Deletes        :               0
 Timeouts      :               0
```

Upper Index (UI)

```
Reads          :             159
 Synchronous   :             159
 Asynchronous  :               0

 In cache      :               0
 Not in cache  :             159
 Area full     :               0

Writes         :           8,680
 Synchronous   :           8,680
 Asynchronous  :               0

 Written       :           8,680
 Not written   :               0
 Area full     :               0

Validates      :         225,471
 Block invalid :               0

Cast-out reads :           2,349
 Synchronous   :           2,349
 Asynchronous  :               0

Deletes        :               0
 Timeouts      :               0
```

File Statistics for Files with More than 25% of the Total Cache Statistics

```
File    30:

Reads          :          14,998
Writes         :          64,710
Validates      :         323,105
```

Global Lock Statistics (Cluster Nucleus Only)

- General Control Block (GCB) Lock
- Security Lock
- File Space Table (FST) Lock
- File Lock Table Lock
- Online Save Lock
- Buffer Flush Lock
- Global ET Sync Lock
- Recovery Lock
- Hold ISN Locks

- Unique Descriptor Locks
- ETID Locks
- New Data RABN Locks
- Checkpoint Lock
- ET Data Lock
- Global Update Command Sync Lock
- Parameter Lock

General Control Block (GCB) Lock

```
Obtains - Conditional        :           0
            Granted          :           0
            Rejected         :           0
          Unconditional      :           0
          Synchronous        :           0
          Asynchronous       :           0

Releases - Issued            :           0
          Synchronous        :           0
          Asynchronous       :           0
```

Security Lock

```
Obtains - Conditional        :           0
            Granted          :           0
            Rejected         :           0
          Unconditional      :           0
          Synchronous        :           0
          Asynchronous       :           0

Releases - Issued            :           0
          Synchronous        :           0
          Asynchronous       :           0
```

File Space Table (FST) Lock

```
Obtains - Conditional        :           1
            Granted          :           1
            Rejected         :           0
          Unconditional      :           1
          Synchronous        :           2
          Asynchronous       :           0

Releases - Issued            :           2
          Synchronous        :           2
          Asynchronous       :           0
```

File Lock Table Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :            5
          Synchronous        :            5
          Asynchronous       :            0

Releases - Issued            :            5
          Synchronous        :            5
          Asynchronous       :            0
```

Online Save Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :            0
          Synchronous        :            0
          Asynchronous       :            0

Releases - Issued            :            0
          Synchronous        :            0
          Asynchronous       :            0
```

Buffer Flush Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :          152
          Synchronous        :          152
          Asynchronous       :            0

Releases - Issued            :          152
          Synchronous        :          152
          Asynchronous       :            0
```

Global ET Sync Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :            0
          Synchronous        :            0
          Asynchronous       :            0

Releases - Issued            :            0
          Synchronous        :            0
          Asynchronous       :            0
```

Recovery Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :            0
          Synchronous        :            0
          Asynchronous       :            0
```

```
Releases - Issued           :            0
           Synchronous      :            0
           Asynchronous     :            0
```

Hold ISN Locks

```
Obtains - Conditional       :         3972
            Granted         :         3972
            Rejected        :            0
          Unconditional     :            0
          Synchronous       :         3972
          Asynchronous      :            0

Releases - Issued           :         3972
           Synchronous      :         3972
           Asynchronous     :            0
```

Unique Descriptor Locks

```
Obtains - Conditional       :            0
            Granted         :            0
            Rejected        :            0
          Unconditional     :            0
          Synchronous       :            0
          Asynchronous      :            0

Releases - Issued           :            0
           Synchronous      :            0
           Asynchronous     :            0
```

ETID Locks

```
Obtains - Conditional       :            0
            Granted         :            0
            Rejected        :            0
          Unconditional     :            0
          Synchronous       :            0
          Asynchronous      :            0

Releases - Issued           :            0
           Synchronous      :            0
           Asynchronous     :            0
```

New Data RABN Locks

```
Obtains - Conditional       :            0
            Granted         :            0
            Rejected        :            0
          Unconditional     :         1000
          Synchronous       :         1000
          Asynchronous      :            0

Releases - Issued           :         1000
           Synchronous      :         1000
           Asynchronous     :            0
```

Checkpoint Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :            4
          Synchronous        :            4
          Asynchronous       :            0

Releases - Issued            :            4
          Synchronous        :            4
          Asynchronous       :            0
```

ET Data Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :            0
          Synchronous        :            0
          Asynchronous       :            0

Releases - Issued            :            0
          Synchronous        :            0
          Asynchronous       :            0
```

Global Update Command Sync Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :          143
          Synchronous        :          143
          Asynchronous       :            0

Releases - Issued            :          143
          Synchronous        :          143
          Asynchronous       :            0
```

Parameter Lock

```
Obtains - Conditional        :            0
            Granted          :            0
            Rejected         :            0
          Unconditional      :            0
          Synchronous        :            0
          Asynchronous       :            0

Releases - Issued            :            0
          Synchronous        :            0
          Asynchronous       :            0
```

Data Set Activity Statistics

```
.............................................
 ADAI03 DDWORKR1         3 READS      7251 WRITES
 ADAI03 DDDATAR1      1750 READS      2853 WRITES
 ADAI03 DDASSOR1      4710 READS      6913 WRITES
```