Adabas Online System

Space Calculation

Version 7.4.4

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Adabas Online System

This document applies to Adabas Online System Version 7.4.4 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

Table of Contents

1 Space Calculation

Option "S" on the Basic Services Main Menu displays the Space Calculation menu:

```
08:14:37          *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
                                -  Space Calculation  -                  PSP0002


                                Code    Service
                                ----    --------------
                                 A      ASSO
                                 D      DATA
                                 F      DDFILEA
                                 S      SORT
                                 T      TEMP
                                 W      WORK
                                 ?      Help
                                 .      Exit
                                ----    --------------


                        Code .......... _
                        Database ID ... 105    (RD-MPM105)


  Command ==>
  PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
  Help               Exit                                         Menu
```

The space calculation function is a planning tool for adding new components or recalculating existing space requirements. Each calculation provides a block or cylinder estimate according to information you provide. In general, you must provide the

- maximum estimated record count;
- average number of MU or PE occurrences, when used as descriptors;

- average descriptor, compressed record, or normal record length;
- estimated padding factor;
- device type where the Adabas component being estimated resides.

In many cases, the results are "best guess" estimates; other than a device type, no defaults are assumed. Because no values are actually changed by the Space Calculation function, unrealistic estimates cause no harm.

Calculations are provided in both cylinders and blocks. In some cases, the block values are required by other Online System/Basic Services functions such as Define New File or Modify File Parameters. All values are lost when you exit from the estimating function, regardless of the cause of the exit. You may want to write down any values you wish to use later.

By changing individual estimated values one at a time, you can see the effect on the calculated result. For example, you can change the device type without re-entering the other values; the revised estimate for that device appears when you press ENTER.

There are equivalent direct commands for each Space Calculation function.

The Adabas Online System Space Calculation documentation is organized in the following topics:

Estimating Associator Space
Estimating Data Storage Space
Estimating Space for the DD/FILEA Sequential Dataset
Estimating the Sort Dataset
Estimating the Temp Dataset
Estimating the Work Dataset

2 Estimating Associator Space

Option "A" calculates one of two Associator component values: the address converter (AC) space, or the normal (NI) and upper (UI) index space.

```
08:22:50         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
                          -  ASSO Space Calculation  -                 PSPA002




                           Code    Service
                           ----    -------------------
                            A      Address Converter
                            I      Normal/Upper Index
                            ?      Help
                            .      Exit
                           ----    -------------------


              Code ..........
              Database ID ... 105    (RD-MPM105)




  Command ==>
  PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
  Help               Exit                                         Menu
```

The equivalent direct command is

```
CALCULATE ASSO
```

AC space is based on the device type and the estimated number of records in the related Data Storage file.

```
08:23:07         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
   DBID 105                   -  Address Converter  -                  PSPAA02

   Maximum number of records ... 0
   ASSO Device-Type ............ 8391
   Block Size .................. 4136

   Required number of blocks ...
   Required number of cyls. ....
```

NI/UI calculates index values for a *single* descriptor, requiring you to estimate such things as the average descriptor length, the number of multiple descriptors you expect to have, the total number of unique descriptor values for that field, an Associator padding factor, and a device type if other than the default.

```
08:33:30         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
   DBID 105                  -  Normal/Upper Index  -                  PSPAI02

   Computation for one Descriptor  -
      Maximum number of records for the file ........ 0
      Average number of DE-values per record ........ 1.0
      Average length of DE-value in bytes ........... 0
      Number of different DE-values in the file ..... 0
      Padding factor for ASSO ....................... 10 %
      ASSO Device Type .............................. 8391
      ASSO Block Size ............................... 4136

                                I Normal Index I Upper Index I
      I-----------------------------------------------------
      I Required number of blocks I            0 I           0 I
      I Required number of cyls.  I            0 I           0 I
      I-----------------------------------------------------

                                                          Use ? for Help
```

3 Estimating Data Storage Space

Option "D" calculates Data Storage based on values you provide for estimated maximum record count, the average length of a compressed record, a Data Storage padding factor, and device type. Results are specified in both blocks and cylinders.

```
08:36:55         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
   DBID 105                    -  Data Storage  -                     PSPD002

   Maximum number of records for the file .. 0_________
   Average compressed record length ........ 0
   Padding factor for DATA ................. 10 %
   DATA device-type / blk. size ............ 8391 /  10796

   Required number of blocks ............... 0
   Required number of cyls. ................ 0
```

The equivalent direct command is

```
CALCULATE DATA
```

4 Estimating Space for the DD/FILEA Sequential Dataset

Option "F" calculates the space required for the DD/FILEA sequential dataset when it is used with the ADAORD utility. (The dataset is also used with the ADALOD utility.)

```
08:37:35         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
                               - DDFILEA Storage -                     PSPF002

                    Code  Reorder                    Maximum Space Required
                    ----  -------------              ----------------------
  DB -Function   :   A    Asso
                     B    Data                       Bytes ......
                     C    DB                         Blocks .....
                     D    Restruct DB                Cylinder ...
  FILE -Function :   E    FAsso                      Blocksize ..
                     F    FData
                     G    File
                     H    Restruct File
                     .    Exit
                    ---- --------------

          Code ..... _
          File .....
          Device ... 8391
          DB-ID .... 105    (RD-MPM105)
```

The equivalent direct command is

```
CALCULATE DDFILEA
```

5 Estimating the Sort Dataset

Option "S" (Sort) displays the Sort Storage menu:

```
08:44:07         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
                              - SORT STORAGE -                        PSPS002

                            Code  Service
                            ----  -------------
                             I    ADAINV
                             L    ADALOD load
                             U    ADALOD update
                             ?    Help
                             .    Exit
                            ----  -------------

                Code ......... _
                File Number ..
                Database ID .. 105    (RD-MPM105)
```

The functions on this menu are used to estimate the storage needed on SORT for the utility function chosen.

This chapter covers the following topics:

ADAINV Sort

The storage needed on SORT for the ADAINV utility function is estimated using the following screen:

```
08:48:25         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
                       -  Sort Storage      - ADAINV -      -          PSPSS02

   File Number ................................... 16
   Number of records ( Default:  TOPISN ) ....... 25649     (reduce number if
   Name of the field to be processed ...........               field is NU)

   Average compressed descr. length (in Bytes)
   of the biggest descriptor ....................
   Occurences of periodic groups ................ 1
   Occurences of multiple fields ................ 1
   SORT device-type ............................. 8391
   LWP-parameter ................................ 1000000
   Database-ID .................................. 105
   Password (if required) .......................

  ------------------------------------------------------------------------

   Required number of blocks (minimum) ..........
```

```
  Required number of cyls.  (minimum) .........

 PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
 Help               Exit      Dis Field                          Menu
```

PF4 (Dis Field) invokes a Field Selection screen:

```
08:48:27         *****  A D A B A  +---------------------------------+ 05-03
                      -  Sort Storag |                                 | 02
                                     |  Please mark with 'X':          |
                                     |                                 |
  File Number ....................   |              Field              |
  Number of records ( Default:  TOPI |  Selection   Name      Length    | if
  Name of the field to be processed  |  ---------   ----      ------    |
  Average compressed descr. length ( |     _         LC         250    |
  of the biggest descriptor ........ |     _         LG         65_    |
  Occurences of periodic groups .... |     _         LK         90_    |
  Occurences of multiple fields .... |     _         LM         250    |
  SORT device-type ................. |     _         LQ         8__    |
  LWP-parameter .................... |     _         LR         8__    |
  Database-ID ...................... |     _         LS         8__    |
  Password (if required) ........... |     _         LT         8__    |
 ---------------------------------- |     _         LU         8__    | -
  Required number of blocks (minimum |     _         LV         96_    |
  Required number of cyls.  (minimum |     _         LI         32_    |
                                     |     _         L3         14_    |
                                     |                                 |
                                     |  Enter----PF3------PF7-----PF8-  |
 PF1----- PF2------ PF3------ PF4--- |           Back      <       >    | --
 Help               Exit      Dis Fi +---------------------------------+
```

ADALOD LOAD Sort

For the ADALOD LOAD calculation, the default number of records is MAXISN rather than TOPISN as it is for the ADAINV function:

```
08:49:51         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
                      -  Sort Storage  - ADALOD UPDATE -   -          PSPSS02

  File Number ................................. 16
  Number of records ( Default:  0      ) .......          (reduce number if
                                                             field is NU)
```

ADALOD UPDATE Sort

For the ADALOD UPDATE calculation, the default number of records is 0:

```
08:50:42         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
                                - TEMP STORAGE -                       PSPT002

                           Code  Service
                           ----  ------------------
                            I    ADAINV
                            L    ADALOD load/update
                            U    ADALOD delete
                            ?    Help
                            .    Exit
                           ----  ------------------

              Code ......... _
              File No. ....: 16
              Database ID .. 105    (RD-MPM105)
```

6 Estimating the Temp Dataset

Option "T" (Temp) displays the Temp Storage menu:

```
08:53:12         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
                               - TEMP STORAGE -                       PSPT002

                           Code  Service
                           ----  ------------------
                            I    ADAINV
                            L    ADALOD load/update
                            U    ADALOD delete
                            ?    Help
                            .    Exit
                           ----  ------------------

              Code ......... _
              File No. ....: 16
              Database ID .. 105    (RD-MPM105)
```

The functions on this menu are used to estimate the storage needed on TEMP for the utility function chosen.

```
08:55:02         *****  A D A B A S  BASIC   SERVICES  *****       2005-11-23
                           - TEMP Storage -  ADAINV -                   PSPTI02


  File Number ................. 16
  Field-Name to be inverted ..
  Average descriptor-length ..           ( Default = Field-length)
  Max. Number of records ..... 25649     ( Default = TOPISN      )
  Device Type ................. 8391
  No. of records to delete ...           ( ADALOD Delete only    )
  DBID ........................ 105       (RD-105)
  Password (if required) .....
```

```
 ---------------------------------------------------------------

 Required TEMP-Blocks ......
              Cylinder ....



 PF1----- PF2------ PF3------ PF4------ PF6----- PF7----- PF8----- PF12-----
 Help               Exit      Dis Field                          Menu
```

PF4 invokes a Field Selection screen.

The TEMP Storage - ADALOD DELETE screen is identical.

The TEMP Storage - ADALOAD LOAD screen differs in that a message is added reminding the user to multiply TOPISN by *all* occurrences of periodic groups and/or multiple value fields:

```
09:01:45         *****  A D A B A S  BASIC   SERVICES  *****       2005-11-23
                           - TEMP Storage -  ADALOD LOAD -           PSPTI02

 File Number ................ 16
 Field-Name to be inverted ..
 Average descriptor-length ..           ( Default = Field-length)
 Max. Number of records ..... 25649     ( Default = TOPISN      )
  Make sure to multiply TOPISN by ALL occurences of PE and/or MU
```

7 Estimating the Work Dataset

The Work dataset requires the most estimating. Although many initial values may be arbitrary, keep a record of them to ensure that subsequent tuning of the Work parameters has a realistic basis. Results comprise block estimates for the three parts of the Work area. A total of these values in blocks and cylinders is also provided.

```
09:02:44         *****  A D A B A S   BASIC  SERVICES  *****       2005-11-23
   DBID 105                     -  Work Storage  -                     PSPW002

   Average compr. record length of an updated record ... 0
   Average number of descr. updated per update cmd. .... 0
   Average length of an updated decsriptor value ....... 0
   Average number of update cmds. per second ........... 0
   Average duration of a transactions in seconds ....... 0
   TOPISN of the biggest file in the database .......... 0
   WORK device type / WORK blk. size ................... 8391 /  13682

   Required space (blocks) :   Protection Area (LP) ....        0
   -------------------------   Intermediate ISN lists           0
                               Resulting ISN lists ....>        0
                                                      ? ---------
                            Total (Blocks / Cyls.)....          0 /  0
```

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