

# **Adabas Caching Facility**

## **Adabas Caching Online Services**

Version 8.5.3

April 2020

This document applies to Adabas Caching Facility Version 8.5.3 and all subsequent releases.

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

Copyright © 2020 Software AG, Darmstadt, Germany and/or Software AG USA, Inc., Reston, VA, USA, and/or its subsidiaries and/or its affiliates and/or their licensors.

The name Software AG and all Software AG product names are either trademarks or registered trademarks of Software AG and/or Software AG USA, Inc. and/or its subsidiaries and/or its affiliates and/or their licensors. Other company and product names mentioned herein may be trademarks of their respective owners.

Detailed information on trademarks and patents owned by Software AG and/or its subsidiaries is located at <http://softwareag.com/licenses>.

Use of this software is subject to adherence to Software AG's licensing conditions and terms. These terms are part of the product documentation, located at <http://softwareag.com/licenses/> and/or in the root installation directory of the licensed product(s).

This software may include portions of third-party products. For third-party copyright notices, license terms, additional rights or restrictions, please refer to "License Texts, Copyright Notices and Disclaimers of Third-Party Products". For certain specific third-party license restrictions, please refer to section E of the Legal Notices available under "License Terms and Conditions for Use of Software AG Products / Copyright and Trademark Notices of Software AG Products". These documents are part of the product documentation, located at <http://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

Use, reproduction, transfer, publication or disclosure is prohibited except as specifically provided for in your License Agreement with Software AG.

**Document ID: ACF-ONLINE-SERVICES-853-20210409**

## Table of Contents

1 About this Documentation .....	1
Document Conventions .....	2
Online Information and Support .....	2
Data Protection .....	3
2 Adabas Caching Online Services .....	5
3 Using Adabas Caching Online Services .....	7
Starting Adabas Caching Online Services .....	8
Using PF Keys .....	9
4 Global Caching .....	11
Global Caching Main Menu .....	12
Define RABNs to be Cached .....	13
Global Cache Maintenance .....	14
Maintain Cache Spaces .....	16
Maintain Cache Parameters .....	18
Global Cache Session Summary .....	19
5 File Level Caching .....	21
File-Level Caching Main Menu .....	22
Define File Cache .....	23
Files With Caching .....	24
Maintain File Cache .....	25
Maintain Cache Spaces .....	26
Maintain Cache Parameters .....	29
Cache Session Summary .....	29



# 1 About this Documentation

---

▪ Document Conventions .....	2
▪ Online Information and Support .....	2
▪ Data Protection .....	3

## Document Conventions

---

Convention	Description
<b>Bold</b>	Identifies elements on a screen.
Monospace font	Identifies service names and locations in the format <i>folder.subfolder.service</i> , APIs, Java classes, methods, properties.
<i>Italic</i>	Identifies:  Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
Monospace font	Identifies:  Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the   symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

## Online Information and Support

---

### Software AG Documentation Website

You can find documentation on the Software AG Documentation website at <https://documentation.softwareag.com>.

### Software AG Empower Product Support Website

If you do not yet have an account for Empower, send an email to [empower@softwareag.com](mailto:empower@softwareag.com) with your name, company, and company email address and request an account.

Once you have an account, you can open Support Incidents online via the eService section of Empower at <https://empower.softwareag.com/>.

You can find product information on the Software AG Empower Product Support website at <https://empower.softwareag.com>.

To submit feature/enhancement requests, get information about product availability, and download products, go to [Products](#).

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, go to the [Knowledge Center](#).

If you have any questions, you can find a local or toll-free number for your country in our Global Support Contact Directory at [https://empower.softwareag.com/public\\_directory.aspx](https://empower.softwareag.com/public_directory.aspx) and give us a call.

### **Software AG TECHcommunity**

You can find documentation and other technical information on the Software AG TECHcommunity website at <http://techcommunity.softwareag.com>. You can:

- Access product documentation, if you have TECHcommunity credentials. If you do not, you will need to register and specify "Documentation" as an area of interest.
- Access articles, code samples, demos, and tutorials.
- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.
- Link to external websites that discuss open standards and web technology.

## **Data Protection**

---

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

---

# 2 Adabas Caching Online Services

---

Adabas Caching Online Services is used to define caching parameter settings and also to monitor caching operations. It can also be used to issue ADACSH operator commands.

- Using ACF Online Services** Online Services general use and navigation
- Global Level Caching** Display/Maintain Global Level Caching Settings
- File Level Caching** Display/Maintain File Level Caching Settings

---

# 3 Using Adabas Caching Online Services

---

- Starting Adabas Caching Online Services ..... 8
- Using PF Keys ..... 9

## Starting Adabas Caching Online Services

The interactive component that supports Adabas Caching is accessed through the Adabas Online System main menu.

The following screen is displayed when Adabas Caching is not present:

```

13:24:45          ***** A D A B A S C A C H I N G   F A C I L I T Y   *****          2004-05-11
                  - Global Cache Main Menu -                                     PCH0002
                                                                                               No Cache

                Code      Function
                ----      -
                D          Define RABNs to be Cached
                M          Global Cache Maintenance
                O          Maintain Cache Spaces
                P          Maintain Cache Parameters
                S          Cache Session Summary
                ?          Help
                .          Exit
                ----      -

Code ..... _
Cache Space No .. _____
DataBase ..... 54      (ADANAT-DB)

MENU001: 05- Nucleus running without adacsh
Command ==>
PF1----- PF2----- PF3----- PF4----- PF6----- PF7----- PF8----- PF12-----
Help                Exit                                Menu
    
```

Note the MENU001 message in the lower left quadrant and "No Cache" in the upper right hand quadrant of the screen. "No Cache" will be replaced by "Global Cache" or "File Level" once Adabas Caching has been activated.

To start Adabas Caching Online Services, select Caching Facility from either the demo or full version Adabas Online System main menu.

One of two menus will appear, depending on whether the ADARUN parameter CFILE has been specified:

- If CFILE has *not* been specified, the **Global Cache Main Menu** appears.
- If CFILE has been specified, the **File Level Main Menu** appears.

The memory type depends on the operating system under which Adabas is running. For more information on cache memory types, see section Caching Configuration.

## Using PF Keys

---

PF1 (Help) provides information about the current function, PF3 is Exit and PF12 returns to the main menu.

Other PF keys are used depending on the options activated.



# 4 Global Caching

---

- Global Caching Main Menu ..... 12
- Define RABNs to be Cached ..... 13
- Global Cache Maintenance ..... 14
- Maintain Cache Spaces ..... 16
- Maintain Cache Parameters ..... 18
- Global Cache Session Summary ..... 19

## Global Caching Main Menu

The Global Cache Main Menu is used to select the global caching function to be executed.

```

14:43:15          ***** A D A B A S  CACHING FACILITY *****      2004-05-11
                   - Global Cache Main Menu -                          PCH0002
                                                                                   Global Cache

                Code      Function
                -----
                D          Define RABNs to be Cached
                M          Global Cache Maintenance
                O          Maintain Cache Spaces
                P          Maintain Cache Parameters
                S          Cache Session Summary
                ?          Help
                .          Exit
                -----

Code ..... _
Cache Space No .. _____
DataBase ..... 1955   (WIS1955)

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

The following function codes are available:

Code	Description
<b>D</b>	Define a new cache space for one or more RABNs
<b>M</b>	Perform global operations on all cache spaces defined for the database
<b>O</b>	Display and modify individual cache spaces defined for the database
<b>P</b>	Display and modify current settings of ADARUN parameters
<b>S</b>	Display summary cache session statistics

## Define RABNs to be Cached

Selecting option D from the Global Cache Main Menu displays a menu of functions for defining one or more RABNs to be cached:

```

14:57:55          ***** A D A B A S CACHING FACILITY *****          2004-05-11
                  - Define RABNs to be Cached -                          PCHD002
                                                                              Global Cache

                  Code      Function
                  ----      -
                  A        Define Asso Cache
                  D        Define Data Cache
                  ?        Help
                  .        Exit
                  ----      -

Code ..... _
Memory Type ..... _
RABN Number From .. _____
RABN Number To .... _____
Cache Space No .... _____
Database ..... 1955 (WIS1955)

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

```

Field	Description
Code	RABNs may be cached in Associator (option A) and/or Data Storage (option D) space. A separate operation is required for each type of caching.
Memory Type	The memory type can be extended memory (E), data space (D), hiperspace (H), virtual 64 backed by large pages (L), or virtual 64 (V). The choices available depend on the operating system configuration under which Adabas is running. Virtual 64 is only available for systems running z/OS version 1.2 or above on the appropriate hardware. Virtual 64 backed by large pages is only available for systems running z/OS Version 1.9 or above on the appropriate hardware.
RABN Number From...To	Specifying the start RABN (RABN Number From...) and the end RABN (RABN Number To...) defines a RABN range to be cached in the defined cache space. If only one RABN is to be cached, it is not necessary to specify an ending RABN number.
Cache Space No	A cache space number (CSN) is a unique number called the RABN Range ID that will be assigned to the new RABN range. Valid values are 0 through 65535. If the number specified is already in use, the new RABN range definition is ignored and an error message is displayed on both DDPRINT and the operator console. If no number is provided or zero is specified, a CSN allocated by the nucleus will be returned.

Field	Description
	<p><b>Note:</b> Cache Space Number (CSN) is a term retained for compatibility with earlier versions of Adabas Caching. However, the CSN now identifies the RABN Range ID to be used as there is no longer a direct correlation between cache spaces and RABN ranges.</p> <p>The settings for the cache spaces being defined correspond to those specified by the ADARUN parameters CASSODSP, CASSOEXT, CASSOHSP, CASSOV64; CDATADSP, CDATAEXT, CDATAHSP, and CDATAV64. If a cache space size greater than CASSOMAXS or CDATAMAXS is calculated based on the RABN range specified, you have the opportunity to change the relevant parameter value before the cache space is defined.</p> <p>The corresponding direct commands are</p> <div data-bbox="326 617 699 722" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><b><u>DEFINE</u> <u>CACHE</u></b></p> </div> <p>and</p> <div data-bbox="326 800 647 905" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><b><u>ADD</u> <u>CACHE</u></b></p> </div>

## Global Cache Maintenance

---

Selecting option M from the Global Cache Main Menu displays a menu of functions for maintaining cache spaces:

```

15:13:08          ***** A D A B A S CACHING FACILITY ***** 2004-05-11
                  - Global Cache Maintenance -                    PCHM002
                                                                Global Cache

                  Code      Function
                  ----      -
                  D        Delete Cache
                  M        Modify Cache
                  E        Enable Cache
                  S        Disable Cache
                  ?        Help
                  .        Exit
                  ----      -

Code .....
Cache Space No .. ALL
Database ..... 1955 (WIS1955)

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

```

From this screen, global operations can be performed on *all* cache spaces defined for the database. The allowed functions are

D	Delete all cache spaces. Once deleted, spaces must be redefined using Main Menu function D or by restarting the Adabas nucleus with the relevant ADARUN parameters.
M	Move all cache spaces to the memory type (E for extended; D for data space; H for hiperspace; L for virtual 64 backed by large pages; V for virtual 64) you specify on the Memory Type window that appears.
S	Disable all cache spaces.
E	Start cache operation for all cache spaces.

The corresponding direct command is



These same functions can be performed on individual cache spaces using the Maintain Cache Spaces function (menu option O).

## Maintain Cache Spaces

Selecting option O from the Global Cache Main Menu displays a list of cache spaces currently allocated for the database:

```

15:16:05          ***** A D A B A S CACHING FACILITY ***** 2004-05-11
DBID 1955          - Maintain Cache Spaces -                      PCHS002
                                                           Global Cache
Sel No   Mem. Cach RABN Range          Last Activity   Stat Error Status
         Type Type From           To
-----
         1 EXT  ASSO 281           801           2001-09-13 10:43 ALLO
         2 EXT  DATA 1             630           2001-09-13 10:42 ALLO

Select DI(Display) EN(Enable) DS(Disable) DE>Delete) MO(Modify)

PF1----- PF2----- PF3----- PF4----- PF6----- PF7----- PF8----- PF12-----
Help                Exit       Refresh                Menu

```



**Note:** If you specify the cache space number (CSN) on the Global Cache Main Menu along with function code O, the Cache Statistics screen for that CSN is displayed (DI) directly.

For each RABN range listed on the Maintain Cache Spaces screen, you can display and modify caching parameters by entering one of the following commands in the Select column:

Cmd	Action
MO	Move the selected cache space to the memory type (E for extended; D for data space; H for hiperspace; L for virtual 64 backed by large pages; V for virtual 64) you specify on the Memory Type window that appears.
DE	Delete the selected cache space. Once deleted, the space must be redefined using the Main Menu function D or the relevant ADARUN parameters.
DI	Display the detailed cache space statistics. The information provided is the same as that resulting from the CSTAT operator command.
DS	Disable the selected cache space.
EN	Start caching operation for the selected cache space.

The other columns on the Maintain Cache Spaces display contain the following information:

Column	Description
No.	Cache space number (CSN). This is actually a unique RABN Range ID as there is no longer a direct correlation between cache spaces and RABN ranges.
Memory Type	Caching type for each cache space: extended storage (EXT), data spaces (DS), hiperspaces (HS), virtual 64 backed by large pages (L64) or virtual 64 storage (V64).
Cache Type	Database component being cached in the cache space: Associator (ASSO), Data Storage (DATA), Work part 2 (WRK2), or Work part 3 (WRK3).
RABN Range	The starting (From...) and ending (To...) RABNs of the RABN range being cached in the cache space.
Last Activity	The date and time the cache space was last accessed.
Status	The current status of the cache space: disabled (DISA); unallocated (UNAL); or ALLC (allocated).
Error Status	If an error condition has occurred, the cause of the error will be displayed in this field.

### Cache Statistics

Entering **DI** in the Select column on the Maintain Cache Spaces screen or selecting option **O** and specifying a cache number on the Global Cache Main Menu displays the Cache Statistics screen for an individual cache space:

```

15:23:54          ***** A D A B A S C A C H I N G   F A C I L I T Y   *****      2004-05-11
DBID 1955          - Cache Statistics -                                     PCHS002
                                                                Global Cache

Cache Space No .....      2
Memory Type .....      EXT
Cache Component ...      DATA
RABN-range .....      1 - 630
Last Activity .....      2001-09-13   10:42:51
Cache Status .....      ALLOCATED
Cache Writes .....          6322
Max. Cache used ...          236180
Cache Size .....          1515520
Cache Efficiency ..          99.0 %
Cache Reads .....          6273
Read EXCPS .....           62
Total Reads .....          6335
RABN's in Cache ...           49
RABN's/Cache Space.          314
RABN Index Size ...          2536 (bytes)

                               Elapsed Time per Cache Read Request
                               Max. ...      0.013168
                               Min. ...      0.000002
                               Avg. ...      0.000013

                               EXCP Time <in microseconds>
                               Max. ...      0.007237
                               Min. ...      0.003476
                               Avg. ...      0.003923

Press ENTER to continue

```

The information displayed on this screen is the same as that displayed by the CSTAT operator command.



**Note:** Values for Max. Cache used, Cache Size, RABNs in Cache, and RABNs/Cache Space represent bytes, but may be marked with a K (1 kilobyte=1024 bytes), M (1 megabyte=1,048,576 bytes), or G (1 gigabyte=1,073,741,824 bytes) indicator when the size of the value requires it.

## Maintain Cache Parameters

Selecting option P from the Global Cache Main Menu displays the current Adabas Caching (ADARUN) parameter values and allows you to change them:

```

15:28:46          ***** A D A B A S C A C H I N G   F A C I L I T Y          *****          2004-05-11
DBID 1955          - Maintain Cache Parameters -                               PCHS002

Display Cache Space Stats. YES_                                           (CDISPSTAT)
Minimum Buff. Efficiency . _____0                                     (CDEMAND)
Elapsed Time (GETMAIN) .. _____900 sec                               (CRETRY)
Time of Inactivity ..... _____7200 sec                               (CCTIMEOUT)
Max. No. Permitted ..... _____5                                     (CMAXCSPS)

Max. ASSO Cache Size ..... _____303104 _                             (CASSOMAXS)
Max. DATA Cache Size ..... _____303104 _                             (CDATAMAXS)
WORK Memory Type ..... EXT                                               (CWORKSTORAGE)
Percent WORK2 RABNs ..... 0 %                                           (CWORK2FAC)
Percent WORK3 RABNS ..... 0 %                                           (CWORK3FAC)

Read-ahead Caching
  Number of Buffers ..... 0                                             (CBUFNO)
  Command Types Excluded . _____                                     (CEXCLUDE)
                        Included . P/L/H/F   PHYS/LOGI/HIST/FIND

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



**Note:** Values for Max. ASSO Cache Size and Max. DATA Cache Size represent bytes, but may be marked with a K (1 kilobyte=1024 bytes), M (1 megabyte=1,048,576 bytes), or G (1 gigabyte=1,073,741,824 bytes) indicator when the size of the value requires it.

For more information about these parameters, see the section *Adabas Caching Parameters*.

## Global Cache Session Summary

Selecting option S from the Global Cache Main Menu displays a summary of information for the Adabas Caching session including cache statistics, read-ahead statistics, and allocation statistics for active and inactive cache spaces. This information is the same as that displayed when the CSUM command is issued.

```

15:31:08          ***** A D A B A S C A C H I N G   F A C I L I T Y   *****          2011-02-04
DBID 1955                      Cache Session Summary                                PCHS002
                                                                              Global Cache
                                                                              Page 1

Cache Allocation Summary
Current Adabas Buffer Efficiency .....          278.7
Projected NON-CACHE Buffer Efficiency ..          11.3
Number of Active RABN ranges .....              0
Number of RABN ranges defined .....            2

          --- ASSO ---          --- DATA ---          --- WORK ---
Cache Statistics
Cache writes .....          127          6322          0
Read EXCPS .....           17           62          0
Cache reads .....          118          6273          0
Total reads .....          135          6335          0
Efficiency .....           87.4          99.0          0.0

Read Ahead Statistics
RABN's read .....           0           0
EXCPS .....                 0           0
Ave. blks/EXCP .....        0.0          0.0          next page

```

Page 2

### Cache Size Summary

```

          --- ASSO ---          --- DATA ---          --- WORK ---
Max Cache Size .....        1,480 K          1,480 K          0 K
EXT Allocated .....         296 K          296 K          0 K
EXT Highest .....           296 K          296 K
DSP Allocated .....          0 K           0 K           0 K
DSP Highest .....           0 K           0 K
HSP Allocated .....          0 K           0 K           0 K
HSP Highest .....           0 K           0 K
V64 Allocated .....          0           0           0 K
V64 Highest .....           0           0
L64 Allocated .....          0           0           0 K
L64 Highest .....           0           0

```

Allocation Statistics marked as K, M, or G.

Help screens are available by pressing PF1 from each page of the Cache Session Summary report.

# 5 File Level Caching

---

- File-Level Caching Main Menu ..... 22
- Define File Cache ..... 23
- Files With Caching ..... 24
- Maintain File Cache ..... 25
- Maintain Cache Spaces ..... 26
- Maintain Cache Parameters ..... 29
- Cache Session Summary ..... 29

## File-Level Caching Main Menu

If the ADARUN CF<sub>FILE</sub> parameter has been specified, the File Level Main Menu appears when you select Caching Facility from the main menu:

```

13:59:12          ***** A D A B A S CACHING FACILITY *****          2004-05-11
                  - File Level Main Menu -                               PCF0002
                                                                                   File Level

                Code      Function
                ----      -
                D      Define File Cache
                F      Files with Caching
                M      Maintain File Cache
                O      Maintain Cache Spaces
                P      Maintain Cache Parameters
                S      Cache Session Summary
                ?      Help
                .      Exit
                ----      -

Code ..... _
DataBase ..... 1955   (WIS1955)

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

The following functions are available:

Code	Description
<b>D</b>	Define a new cache space for one or more files
<b>F</b>	Display detailed cache space statistics for a file
<b>M</b>	Enable, disable, or delete caching for one or more files
<b>O</b>	Enable, disable, or delete caching for the Work dataset
<b>P</b>	Display and modify current settings of ADARUN parameters
<b>S</b>	Display summary cache session statistics



**Notes:**

1. Although it is possible to define different cache spaces for the Associator and Data Storage of a single file using a separate ADARUN CF<sub>FILE</sub> parameter for each, it is not possible to do so using Adabas Online System functions or operator commands. To define both Associator and

Data Storage caching for a file using Adabas Online System functions or operator commands, you must use the BOTH option that uses the same caching parameters for both.

- Once file level caching has been defined for a file using the ADARUN<sub>CFILE</sub> parameter, Adabas Online System functions, or operator commands, it is not possible to change the caching parameters without first deleting the defined cache space and then adding a new cache space with the different parameters. For example, if you have Data Storage caching defined for a file and you want to add Associator caching, you must first delete the Data Storage cache space and redefine caching for the file using the BOTH option.

## Define File Cache

Selecting option D from the File Level Main Menu displays a menu of functions used to define a new cache space for one or more files:

```

13:32:45          ***** A D A B A S C A C H I N G   F A C I L I T Y   *****      2004-05-11
                   - Define File Cache -                                           PCFD002
                                                                                                         File Level

                Code      Function
                ----      -
                A         Define Asso Cache
                B         Define Asso and Data Cache
                D         Define Data Cache
                ?         Help
                .         Exit
                ----      -

Code ..... _
Memory Type ..... _
File Number ..... 0_____ - _____
Class of Service .. _
Database ..... 1955   (WIS1955)

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

```

Field	Description
Code	One or more files may be defined for Associator (option A), Data Storage (option D), or both (option B). No RABN ranges need to be specified: RABNs are added automatically. The file number may be any file within the database maximum files value.
Memory Type	The memory type may be extended (E), data space (D), hiperspace (H), virtual 64 backed by large pages (L), or virtual 64 (V), depending on the operating system environment.
File Number	The file or file range for which caching is to be defined.

Field	Description
Class of Service	<p>The class of service. Possible values are:</p> <ul style="list-style-type: none"> <li>■ 1: cache up to 100% of the file</li> <li>■ 2: cache up to 75% of the file</li> <li>■ 3: cache up to 50% of the file</li> <li>■ 4: cache up to 25% of the file</li> <li>■ 5: cache up to 10% of the file</li> </ul>

## Files With Caching

Selecting option F from the File Level Main Menu displays a list of files that use caching:

```

13:37:48          ***** A D A B A S  CACHING FACILITY  *****          2004-05-11
DBID 1955          - Files with Caching -                               PCFF002
                                                                File Level

Sel   File   File Name                               Cache Type   State
-----
      0   Unassigned RABNs                       Asso/Data   Not accessed
      1   EMPLOYEES                             Asso/Data   Active
      2   VEHICLES                               Asso/Data   Active
      3 - 5 not loaded
      6   EXPANDED                             Asso/Data   Not accessed
      7   EXPANDED                             Asso/Data   Not accessed
      8 - 9 not loaded
     10   TRIGGER-FILE                         Asso/Data   Not accessed
     11 - 18 not loaded
     19   CHECKPOINT                           Asso/Data   Active
     20 - 25 not loaded

Specify 'DI' (Display), EN (Enable) DE (Delete) or DS (Disable) for a file

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

Entering DI in the Sel column for a file displays detailed cache space statistics for that file.

The information displayed on the resulting Statistics screen is the same as that provided by the CFSTAT command.

```

13:41:59          ***** A D A B A S CACHING FACILITY *****          2004-05-11
DBID 1955          - Statistics -                                     PCFF002
                                                           File Level

File 1      EMPLOYEES
Memory type ..... DSP
Cache component ... Data Class 1 (100%)
RABN range ..... DS Blks          271 - 320
Last activity ..... 2001-09-13 09:24:06
Cache status ..... ALLOCATED
Cache writes .....          12579
Max. Cache used ...          231360          Elapsed time per Cache read request
Cache Size .....          5118840          Max. ...          0.143685
Cache efficiency ..          99.6 %          Min. ...          0.000002
Cache reads .....          12547          Avg. ...          0.000029
Read EXCPS .....          49
Total reads .....          12596          EXCP Time (in microseconds)
RABN's in Cache ...          32          Max. ...          0.049367
RABN's/Cache Space.          1060          Min. ...          0.003509
RABN Index Size ...          216 (bytes)          Avg. ...          0.009183

PF1----- PF2----- PF3----- PF4----- PF6----- PF7----- PF8----- PF12-----
Help          Exit          +          Menu

```

Each file may have several screens for each of the following:

AS	Unassigned Associator
AC	Address Converter
A2	Secondary ISNs
NI	Normal Index
UI	Upper Index
DS	Data Storage

The example screen shown here provides information for one DS extent of file number 1.

## Maintain File Cache

Selecting option M from the File Level Main Menu displays a menu of functions used to enable, disable, or delete caching for one or more files:

```
13:43:56          ***** A D A B A S CACHING FACILITY *****          2004-05-11
                    - Maintain File Cache -                               PCFM002
                                                                              File Level

Code      Function
-----
D        Delete Cache
E        Enable Cache
S        Disable Cache
?        Help
.        Exit
-----

Code ..... _
File Number .. 0____ - _____
Database ..... 1955 (WIS1955)

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

This following functions are available:

D	Delete all cache spaces for a particular file or range of files
E	Enable all cache spaces for a particular file or range of files
S	Disable all cache spaces for a particular file or range of files

## Maintain Cache Spaces

---

Selecting option O from the File Level Main Menu displays the Work cache spaces:

```

13:45:34          ***** A D A B A S CACHING FACILITY ***** 2004-05-11
DBID 1955          - Maintain Cache Spaces -                      PCHS002
                                                           File Level
Sel No   Mem. Cach RABN Range          Last Activity   Stat Error Status
         Type Type From           To
-----
64001 EXT  WRK2 202           211            UNAL
64002 EXT  WRK3 222           2392           UNAL

Select DI(Display) EN(Enable) DS(Disable) DE>Delete) MO(Modify)

PF1----- PF2----- PF3----- PF4----- PF6----- PF7----- PF8----- PF12-----
Help                Exit       Refresh                Menu

```

For each RABN range listed on the Maintain Cache Spaces screen, you can display caching parameters, modify the memory type, and maintain the cache space by entering one of the following commands in the Select column:

MO	Move the selected cache space to the memory type (E for extended; D for data space; H for hiperspace; L for virtual 64 backed by large pages; V for virtual 64) you specify on the Memory Type window that appears.
DE	Delete the selected cache space. Once deleted, the space must be redefined using the relevant ADARUN parameters.
DI	Display the detailed cache space statistics. The information provided is the same as that resulting from the CSTAT operator command.
DS	Disable the selected cache space.
EN	Enable the selected cache space.

The other columns on the Maintain Cache Spaces display contain the following information:

Column	Description
No.	Cache space number (CSN). This is actually a unique RABN Range ID as there is no longer a direct correlation between cache spaces and RABN ranges.
Memory Type	Caching location for each cache space: extended storage (EXT), data spaces (DS), hiperspaces (HS), virtual 64 backed by large pages (L64), or virtual 64 storage (V64).
Cache Type	Database component being cached in the cache space: Work part 2 (WRK2), or Work part 3 (WRK3).

Column	Description
RABN Range	The starting (From...) and ending (To...) RABNs of the RABN range being cached in the cache space.
Last Activity	The date and time the cache space was last accessed.
Status	The current status of the cache space: disabled (DISA); unallocated (UNAL); or ALLC (allocated).
Error Status	If an error condition has occurred, the cause of the error will be displayed in this field.

### Work Cache Space Statistics

Entering DI in the Select column on the Maintain Cache Spaces screen displays the Cache Statistics screen for an individual Work cache space:

```

13:47:03          ***** A D A B A S C A C H I N G   F A C I L I T Y          *****      2004-05-11
DBID 1955          - Cache Statistics -                                     PCHS002
                                                           File Level

Cache Space No ..... 1
Memory Type ..... EXT
Cache Component ... WRK2
RABN-range ..... 202 - 211
Last Activity .....
Cache Status ..... UNALLOCATED
Cache Writes ..... 0
Max. Cache used ... 0                               Elapsed Time per Cache Read Request
Cache Size ..... 57344                               Max. ... 0.000000
Cache Efficiency .. 0.0 %                               Min. ... 0.000000
Cache Reads ..... 0                                   Avg. ... 0.000000
Read EXCPS ..... 0
Total Reads ..... 0                               EXCP Time <in microseconds>
RABN's in Cache ... 0                               Max. ... 0.000000
RABN's/Cache Space. 10                               Min. ... 0.000000
RABN Index Size ... 56 (bytes)                       Avg. ... 0.000000

Press ENTER to continue
    
```

The information displayed on this screen is the same as that displayed by the CSTAT operator command.



**Note:** Values for Max. ASSO Cache Size and Max. DATA Cache Size represent bytes, but may be marked with a K (1 kilobyte=1024 bytes), M (1 megabyte=1,048,576 bytes), or G (1 gigabyte=1,073,741,824 bytes) indicator when the size of the value requires it.

## Maintain Cache Parameters

Selecting option P from the File Level Main Menu displays the current setting of the Adabas Caching (ADARUN) parameters and allows you to change them:

```

14:00:14          ***** A D A B A S C A C H I N G   F A C I L I T Y   *****          2004-05-11
DBID 1955          - Maintain Cache Parameters -          PCFP002

Display Cache Space Stats. YES_          (CDISPSTAT)
Minimum Buff. Efficiency . _____0      (CDEMAND)
Elapsed Time (GETMAIN) .. _____900 sec (CRETRY)
Time of Inactivity ..... _____7200 sec (CCTIMEOUT)
Max. No. Permitted ..... _____5       (CMAXCSPS)

Max. ASSO Cache Size ..... ____1024000 _   (CASSOMAXS)
Max. DATA Cache Size ..... ____1024000 _   (CDATAMAXS)
WORK Memory Type ..... EXT                 (CWORKSTORAGE)
Percent WORK2 RABNs ..... 50 %            (CWORK2FAC)
Percent WORK3 RABNS ..... 50 %            (CWORK3FAC)

Read-ahead Caching
Number of Buffers ..... 0                  (CBUFNO)
Command Types Excluded . _____        (CEXCLUDE)
                          Included . P/L/H/F  PHYS/LOGI/HIST/FIND

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

```



**Note:** Values for Max. ASSO Cache Size and Max. DATA Cache Size represent bytes, but may be marked with a K (1 kilobyte=1024 bytes), M (1 megabyte=1,048,576 bytes), or G (1 gigabyte=1,073,741,824 bytes) indicator when the size of the value requires it. In the example screen, the value 1,024,000 may also be designated as 1000 K.

For more information about these parameters, see the section Adabas Caching Parameters.

## Cache Session Summary

Selecting option S from the File Level Main Menu displays a summary of information for the Adabas Caching session including cache statistics, read-ahead statistics, and allocation statistics for active and inactive cache spaces. This information is the same as that displayed when the CSUM command is issued.

## File Level Caching

```
14:19:37          ***** A D A B A S CACHING FACILITY *****          2004-05-11
DBID 1955          - Cache Session Summary -                               PCF0002
                                                                    File Level
                                                                    Page 1

Cache Allocation Summary
Current Adabas Buffer Efficiency .....          473.2
Estimated NON-CACHE Buffer Efficiency ..          10.6
Number of Active Cache Spaces .....           10
Number of Cache Spaces defined .....           15

          --- ASSO ---          --- DATA ---          --- WORK ---
Cache Statistics
Cache writes .....          214          12596          0
Read EXCPS .....          17          62          0
Cache reads .....          203          12548          0
Total reads .....          220          12610          0
Efficiency .....          92.2          99.5          0.0

Read Ahead Statistics
RABN's read .....          0          0
EXCPS .....          0          0
Ave. blks/EXCP .....          0.0          0.0          next page >>
```

Page 2

### Cache Size Summary

```
          --- ASSO ---          --- DATA ---          --- WORK ---
Max Cache Size .....          5,000 K          5,000 K          5,884 K
EXT Allocated .....          0 K          0 K          0 K
EXT Highest .....          0 K          0 K
DSP Allocated .....          1,000 K          1,000 K          0 K
DSP Highest .....          1,000 K          1,000 K
HSP Allocated .....          0 K          0 K          0 K
HSP Highest .....          0 K          0 K
V64 Allocated .....          0          0          0 K
V64 Highest .....          0          0
L64 Allocated .....          0          0          0 K
L64 Highest .....          0          0
```

Allocation Statistics marked as K, M, or G.

Help screens are available by pressing PF1 from each page of the Cache Session Summary report.