ADABAS Statistics Facility

User's Manual

SOFTWARE AG

Manual Order Number: ASF621-020MF

This document applies to ADABAS STATISTICS FACILITY Version 6.2 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.

Readers' comments are welcomed. Comments may be addressed to the Documentation Department at the address on the back cover.

SOFTWARE AG documentation often refers to numerous hardware and software products by their trade names. In most cases, if not all, these designations are claimed as trademarks or registered trademarks by their respective companies.

TABLE OF CONTENTS

IV

ASF OVERVIEW

The database monitoring tasks which the Database Administrator (DBA) performs include making regular checks of the current status of the database, e.g. disk and memory utilization, as well as performing long term planning, such as ensuring that the future disk space requirements can be met, based on current trends. The main sources of information for the DBA have been provided in the past by the ADAREP (Database Report) Utility, the Nucleus End Session protocol and ad hoc inquiries with the ADABAS ONLINE SERVICES. By using these facilities, the DBA can check the status of individual databases and files. This is often a very time consuming process.

ASF provides an automated environment which opens up a new dimension in database monitoring. The two main components of ASF are:

- a data collection program which collects database status information during an active nucleus session. This program is called the *Store Program*. Normally the Store Program is scheduled to run at regular intervals (for example once per day) over a period of many weeks or months, in order to collect data which can be statistically evaluated. The Store Program can also be started by the DBA on an ad hoc basis, using commands in the ASF Online Menu System.

- a set of programs to evaluate the statistics gathered by the Store Program and to output summary reports to the screen or a hardcopy printer. Output to a PC using NATURAL CONNECTION is also possible. The programs are called *Evaluation Programs*, and the reports are called *Evaluation Reports*.

ASF has approximately 450 criteria called *data fields* for monitoring ADABAS databases and files. The data fields represent many different aspects of an ADABAS database, including disk and buffer usage, thread usage, database load, ADARUN parameters, pool usage and frequency of use of particular ADABAS commands.

Database information can be collected at the start of a nucleus session, at the end of a nucleus session, and during a nucleus session. The start and end nucleus data, when accumulated over periods of weeks or months, gives an indication of the long term database growth, and permits projections of future database requirements. The nucleus performance data, such as main memory usage and pool usage, permits the DBA to perform tuning analysis of the ADABAS nucleus parameters.
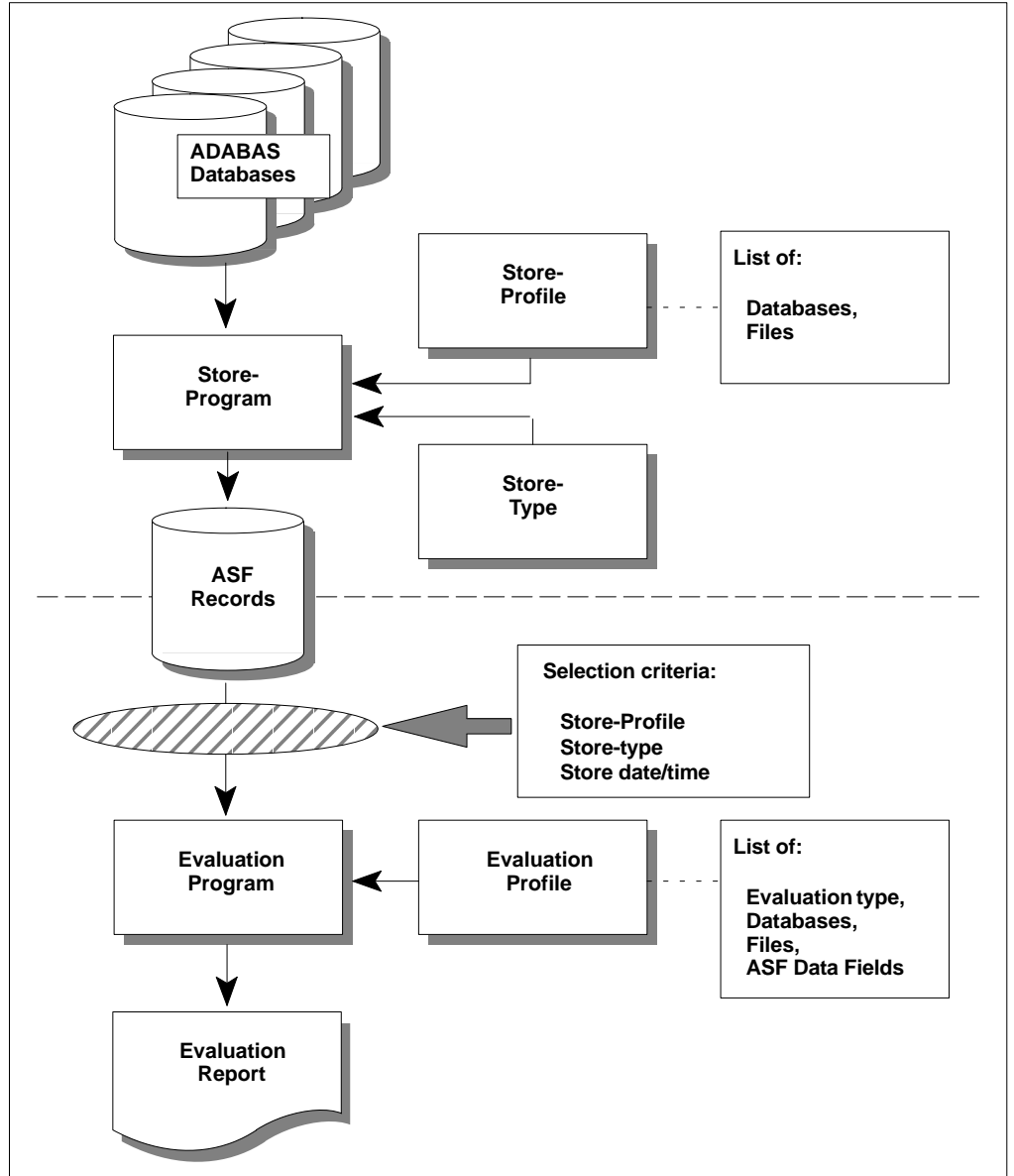
Figure 1-1: The ASF Components

The ASF Components

The main components of ASF are described in the following sections:

The Store Program

The Store Program is the component of ASF which accumulates database and file status information. The Store Program is usually run by the job scheduler as a batch program at regular time intervals, e.g. once per day, and collects information concerning groups of databases and files specified by the DBA. Data which is gathered over a period of several weeks or months in this manner can then be used as a basis for the evaluation reports produced by ASF.

The Store Program collects information concerning the files and databases defined in a *Store Profile* which is defined by the DBA. The DBA can define many Store Profiles, each specifying a different set of databases and files. When the Store Program runs, it requires as input, amongst others, the name of the Store Profile which contains the IDs of the databases and files to be monitored. The DBA can run several Store Programs concurrently, each with a different Store Profile.

Store Types

The data collected by the Store Program can differ greatly depending on current database activity. For example, the amount of the ASSO database component in use depends on the number of users accessing the database, so this value will be very different at nucleus startup than during normal database operation. For this reason, data collected by the Store Program is classified into several *Store Types*. When the Store Program is started, the Store Type is supplied as an input parameter. Further information concerning Store Types is given in the description of the "Store Nucleus Records" menu.

Evaluation Report

ASF generates reports which evaluate data collected by the Store Program. The reports summarize current and projected database statistics. The main types of reports are:

- General evaluation: an analysis of the past and present database status. The statistical tables which are generated give an overview of the status of various databases and files. The maximum and minimum values in rows of the output tables can be displayed also, as well as statistical quantities such as the sum and average of the values.

- Trend evaluation: tables of projected statistics, in time steps of days, weeks or months, until a specified end date.

- Critical Report: a report of databases and files for which ASF data fields have reached or exceeded "critical limits", as defined by the DBA.

- Critical Trend Report: a report of databases and files for which ASF data fields will reach or exceed their critical limits within a time frame, based on an extrapolation of current trends.

The programs which generate the Evaluation Reports are run by the DBA, using the appropriate options in the Online Menu System. When one of these programs is run, data which was stored by the Store Program is evaluated and displayed in either screen or hardcopy format, or is stored as a file on a PC.

Store Profiles and Evaluation Profiles

Store Profiles are defined by the DBA using the ASF Online Menu System. Each Store Profile specifies a list of databases and files for which the ASF data fields are to be collected. When the Store Program is run, the name of a Store Profile must be supplied to it as an input parameter. The Store Program collects data only for those databases and files specified in the Store Profile.

Note:
The Store Program stores the values of all of the ASF data fields for each database and each file specified in the corresponding Store Profile. The selection of ASF data fields to be included in an Evaluation Report is specified in the Evaluation Profile.

Evaluation Profiles are similar to Store Profiles, since they also specify the databases and files for which the Evaluation Reports are to be produced. When starting an Evaluation Report, the DBA specifies the name of the Evaluation Profile to be used. Normally an Evaluation Profile will define a subset of the databases and files defined in a Store Profile. Additionally, for each database or file specified in the Evaluation Profile, one or more of the ASF data fields (database monitoring criteria) *must* be specified.

In an Evaluation Profile, the DBA specifies the following:

- The databases and files for which data stored by the Store Program is to be evaluated.
- For each database and file, one or more of the available ASF data fields which are to be analyzed in the Evaluation Report.
- The units of measurement of the ASF data fields
- Upper and lower values which represent "critical" levels for the data fields
- The *Evaluation Type,* which is a value in the range 1-10. See the section **Overview of the Evaluation Types** for details.

Note:
Special Evaluation Profiles called Head Profiles are a standard component of ASF. There are 10 such profiles, one per Evaluation Type, and they contain data which determines the format of the headings which appear in the corresponding Evaluation Reports. The Head Profiles should not be modified or deleted. The Head Profiles are called HEAD-PROFILE-nn, where "nn" is a two digit value in the range 01 to 08.
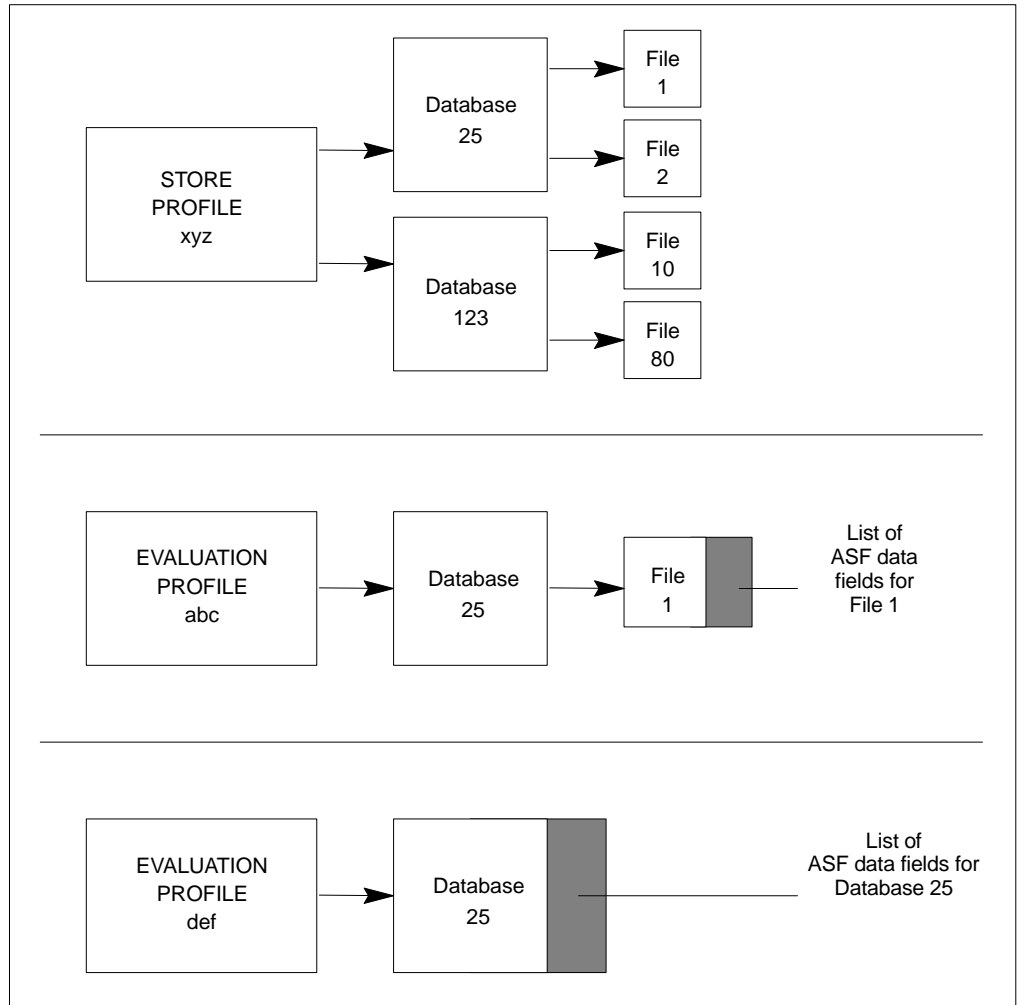
Figure 1-2: Store Profiles, Evaluation Profiles

An example of the relationship between Store Profiles and Evaluation Profiles is shown in Figure 1-2. When the Store Program is run using the Store Profile *xyz*, it will collect data for files 1 and 2 in database 25, and files 10 and 80 in database 123. It will also collect summary data for the whole databases 25 and 123. The Evaluation Profile *abc* specifies a subset of the data specified by the Store Profile *xyz*, namely file 1 in database 25. The Evaluation Profile *def* specifies a subset of the data specified by the Store Profile *xyz*, namely database 25.

EVALUATION REPORTS

The content and the format of the Evaluation Reports generated by ASF depend on the Evaluation Type specified by the DBA. The valid Evaluation Types are predefined in ASF.

There are 10 Evaluation Types. Types 1-8 are used for evaluating past and current database usage, and are not concerned with critical values. Types 9 and 10 are used for critical value reports.

Some of the Evaluation Reports allow statistical operations to be performed on the reported values, for example sum, average, minimum, maximum. This is called *external accumulation*. Other reports print values which are already the result of one of the statistical functions. This is called *internal accumulation*.

Note:
ASF does not perform extensive plausibility checking when the statistical operations are selected. It is, for example, possible to request the sum of all values of the LBP (length of buffer pool) parameter over a given time frame, even though the resulting value is meaningless.

Each Evaluation Type is associated with a particular combination of databases, files, data fields and dates and times.

Evaluation Types 1-4 refer to database-related data fields (properties of a whole database), whereas Evaluation Types 5-8 refer to file-related data fields (properties of individual files within a database). Thus the text "(DB)" in the following description of Evaluation Type 1 indicates that the report shows database-related data fields only.

Type	Title	Values displayed	
		real	trend
1	One DB at point in time (DB)	x	x
2	DBs in time frame (DB)	x	x
3	DBs at point in time (DB)	x	x
4	One field at point in time (DB)	x	x
5	One DB at point in time (FI)	x	x
6	DBs in time frame (FI)	x	x
7	DBs at point in time (FI)	x	x
8	One field at point in time (FI)	x	x
9	Critical report: List of fields, databases and files	x	
10	Critical trend: List of fields, databases and files		x

Figure 2-1: Overview of the Evaluation Types

DB 75						

DB 23						

DB 19	Units	13.01.1997 14:00	4.01.1997 14:00	15.01.1997 14:00	Min	Max
Asso defined	BL	4000	4000	4000		
Asso used	%	65.5	71.2	74.6		74.6
Data defined	BL	12000	12000	12000		
Data used	%	47.8	50.4	53.2		53.2

Evaluation Type 1

DB 76, File 44						

DB 19, File 8						

DB 19 File 7	Units	13.01.1997 14:00	14.01.1997 14:00	15.01.1997 14:00	Min	Max
Data defined	BL	30000	30000	30000		
Data used	%	84.1	89.4	92.8		92.8
Data extents		3	3	3		
Top ISN		18700	21400	24100		

Evaluation Type 5

DB ID Count	Units	Accum	76 4	133 4	15 4
Asso used	BL	Min	7400	450	2400
		Max	11100	2600	6900
Data used	BL	Min	2500	1400	5800
		Max	3300	6100	7100

Evaluation Type 2

DB ID File ID Count	Units	Accum	76 44 4	76 194 4	19 7 4
Data used	BL	Min	450	1360	10000
		Max	640	1360	10000
Top ISN		Min	72	4200	8100
		Max	93	4200	8100

Evaluation Type 6

15.01.1997					

14.01.1997					

13.01.1997 14:00	Units	DB 19	DB 23	DB 76	Sum
Asso defined	BL	4000	1000	20000	
Asso used	BL	2540	500	14000	17040
Data defined	BL	12000	2300	30000	
Data used	BL	5736	900	12000	18636

Evaluation Type 3

15.01.1997					

14.01.1997					

13.01.1997 14:00	Units	DB 19 File 7	DB 19 File 8	DB 76 File 44	Sum
Data defined	BL	30000	5000	70000	105000
Data used	BL	25200	4500	4000	33700
Data extents		3	4	1	
Top ISN		18700	7300	590	

Evaluation Type 7

Data used	Units	DB 19	DB 23	DB 76	Sum
Data defined / Asso used					
13.01.1997 14:00	BL	5736	900	12000	18636
14.01.1997 14:00	BL	6048	915	12180	19143
15.01.1997 14:00	BL	6384	940	12395	19719

Evaluation Type 4

Nr of records loaded		DB 19 File 7	DB 23 File 8	DB 76 File 44	Sum
AC extents / Data extents					
13.01.1997 14:00		17380	7068	540	24988
14.01.1997 14:00		17920	7251	583	25754
15.01.1997 14:00		18620	7455	410	26485

Evaluation Type 8

DB ID	File	Field	Value	Date
76	—	Asso used	70 %	16.01.92
141	—	Data used	91 %	16.01.92
	36	Data extents	3	16.01.92
	36	AC extents	4	16.01.92

Evaluation Type 9

DB ID	File	Field	Value	Date	Accuracy
19	—	Data used	95 %	21.02.1997	94 %
	26	NU used	4	08.02.1997	83 %
23	—	Data used	95 %	reached	
76	—	Asso used	90 %	19.06.1997	41 %

Evaluation Type 10

Figure 2-2: Evaluation Type Report Format

In the following summary of the ten Evaluation Types, a short text describing the output format of the corresponding report is included. This is the same text which appears automatically on the screen when the evaluation type is selected in an online screen.

Evaluation Type 1:
One DB at point in time (DB) V:Fields H:Times (external accumulation)

Purpose: gives an overview of the growth of a particular database.

DB 19	Units	13.01.1997 14:00	14.01.1997 14:00	15.01.1997 14:00	Min	Max
Asso defined	BL	4000	4000	4000		
Asso used	%	65.5	71.2	74.6		74.6
Data defined	BL	12000	12000	12000		
Data used	%	47.8	50.4	53.2		53.2

(table labels DB 75, DB 23 shown as stacked third-axis tabs)

Figure 2-3: A database at various times (Type 1)

Various database-related data fields for a single database are displayed as recorded at a list of points in time. This evaluation shows data fields on the vertical axis and times on the horizontal axis. An external accumulation is also possible. The table of results is three-dimensional. The third axis is a list of databases.

Evaluation Type 5:
One DB at point in time (FI) V:Fields H:Times (external accumulation)

Purpose: gives an overview of the growth of a particular file.

DB 19, File 7	Units	13.01.1997 14:00	14.01.1997 14:00	15.01.1997 14:00	Min	Max
Data defined	BL	30000	30000	30000		
Data used	%	84.1	89.4	92.8		92.8
Data extents		3	3	3		
Top ISN		18700	21400	24100		

DB 76, File 44
DB 19, File 8

Figure 2-4: A file at various times (Type 5)

Various file-related data fields for a single file are displayed as recorded at a list of points in time. This evaluation shows data fields on the vertical axis and times on the horizontal axis. An external accumulation is possible. The table of results is three-dimensional. The third axis is a list of files.

Evaluation Type 2:
DBases in time frame(DB) V:Fields H:Databases (internal accumulation)

Purpose: gives an overview of several databases (accumulated values only) within a time frame.

DB ID	Units	Accum	76	133	15
Count			4	4	4
Asso used	BL	Min	7400	450	2400
		Max	11100	2600	6900
Data used	BL	Min	2500	1400	5800
		Max	3300	6100	7100

Figure 2-5: Several databases at one point in time (Type 2)

This evaluation shows the cumulative values (internal accumulation) of various database-related data fields as recorded in several databases within a time frame. The vertical axis is a list of data fields, each qualified by the statistical quantity being represented, e.g. MAX, MIN, AVERAGE, and the units of measurement, e.g. disk space measurements (Blocks / Cylinders / Megabytes) or frequency measurements, expressed as occurrences per minute (which is abbreviated to "PM"). The horizontal axis is the list of databases. The table of results is two-dimensional.

Evaluation Type 6:
DBases in time frame (FI) V:Fields H:Databases (internal accumulation)

Purpose: gives an overview of several files (accumulated values only) within a time frame.

	Units	Accum			
DB ID	Units	Accum	76	76	19
File ID			44	194	7
Count			4	4	4
Data used	BL	Min	450	1360	10000
		Max	640	1360	10000
Top ISN		Min	72	4200	8100
		Max	93	4200	8100

Figure 2-6: Several files at one point in time (Type 6)

This evaluation shows the cumulative values (internal accumulation) of various file-related data fields as recorded in several files during a time frame. The vertical axis is a list of data fields, each qualified by the statistical quantity being represented, e.g. MAX, MIN, AVERAGE, and the units of measurement, e.g. disk space measurements (Blocks/ Cylinders/ Megabytes) or frequency measurements, expressed as occurrences per minute (which is abbreviated to "PM"). The horizontal axis is the list of files. The table of results is two-dimensional.

Evaluation Type 3:
DBases at point in time (DB) V:Fields H:Databases
(external accumulation)

Purpose: gives an overview of several databases at a point in time.

13.01.1997 14:00	Units	DB 19	DB 23	DB 76	Sum
Asso defined	BL	4000	1000	20000	
Asso used	BL	2540	500	14000	17040
Data defined	BL	12000	2300	30000	
Data used	BL	5736	900	12000	18636

(Overlapping date tabs: 15.01.1997, 14.01.1997)

Figure 2-7: Several databases at one point in time (Type 3)

This evaluation lists the values of various database-related data fields as recorded in several databases at a single point in time. The vertical axis is a set of database-related data fields, wherever necessary qualified by a unit of measurement. The horizontal axis is a list of databases. An external accumulation is possible. The table of results is three-dimensional. The third axis is a list of points in time.

Evaluation Type 7:

DBases at point in time (FI) V:Fields H:Databases (external accumulation)

Purpose: gives an overview of several files at a point in time.

13.01.1997 14:00	Units	DB 19 File 7	DB 19 File 8	DB 76 File 44	Sum
Data defined	BL	30000	5000	70000	105000
Data used	BL	25200	4500	4000	33700
Data extents		3	4	1	
Top ISN		18700	7300	590	

(Headers above: 15.01.1997 / 14.01.1997)

Figure 2-8: Several files at one point in time (Type 7)

This evaluation lists the values of various file-related data fields as recorded in several files at a single point in time. The vertical axis is a set of file-related data fields, wherever necessary qualified by a unit of measurement. The horizontal axis is a list of files. An external accumulation is possible. The table of results is three-dimensional. The third axis is a list of points in time.

Evaluation Type 4:
One field at point in time (DB) V:Times H:Databases
(external accumulation)

Purpose: shows how a data field in several databases behaves within a time frame.

Data used	Units	DB 19	DB 23	DB 76	Sum
Data defined					
Asso used					
13.01.1997 14:00	BL	5736	900	12000	18636
14.01.1997 14:00	BL	6048	915	12180	19143
15.01.1997 14:00	BL	6384	940	12395	19719

Figure 2-9: One field in various databases at various times (Type 4)

This evaluation refers to a single database-related data field as measured in several databases at various points in time within a time frame. The vertical axis is a list of points in time, i.e the times at which a measurement was made. The horizontal axis is a list of files. An external accumulation is also possible. The table of results is three-dimensional. The third axis is a list of database-related data fields.

Evaluation Type 8:
One field at point in time (FI) V:Times H:Databases
(external accumulation)

Purpose: shows how a data field in several files behaves within a time frame.

			DB 19 File 7	DB 23 File 8	DB 76 File 44	Sum
AC extents						
Data extents						
Nr of records loaded						
13.01.1997 14:00			17380	7068	540	24988
14.01.1997 14:00			17920	7251	583	25754
15.01.1997 14:00			18620	7455	410	26485

Figure 2-10: One field in various databases at various times (Type 8)

This evaluation refers to a single file-related data field as measured in several files at various points in time within a time frame. The vertical axis is a list of points in time, i.e the times at which a measurement was made. The horizontal axis is a list of files. An external accumulation is also possible. The table of results is three-dimensional. The third axis is a list of file-related data fields.

Evaluation Type 9:
Critical report: List of fields, databases and files

Purpose: shows the current critical fields.

DB ID	File	Field	Value	Limit
76	—	Asso used	70 %	65 %
141	—	Data used	91 %	90 %
	36	Data extents	3	3
	36	AC extents	4	3

Figure 2-11: Critical Report (Type 9)

This evaluation shows a list of data fields whose current values have reached or exceeded the critical values defined by the DBA for those fields.

The table of results is two-dimensional.

Evaluation Type 10:
Critical trend: List of fields, databases and files

Purpose: predicts fields which will become critical within a given time frame.

DB ID	File	Field	Value	Date	Accuracy
19	—	Data used	95 %	21.02.1997	94 %
	26	NU used	4	08.02.1997	83 %
23	—	Data used	95 %	reached	
76	—	Asso used	90 %	19.06.1997	41 %

Figure 2-12: Critical Trend Report (Type 10)

This evaluation shows a list of data fields which will reach or exceed their critical values at some time in the near future if current trends continue. The predictions are based on a straight-line approximation of past and current values.

The table of results is two-dimensional.

The Output Media

The Evaluation Reports can be produced on the screen or hardcopy printer. They can also be downloaded to a PC using ENTIRE CONNECTION. The default output medium is the screen. You can, however, mark the field for the printer or PC when requesting an Evaluation Report using the ASF Online Menu System (see, for example, the menu "General Evaluation").

If you mark the field for output to a printer, you will be asked to give the name of the printer, the number of characters per line (80 or 132), and the size of the left margin, expressed as a number of characters.

Evaluation Report Format

The reports for evaluation types 1-8 are either two-dimensional or three-dimensional tables of values. Figure 2-13 is an example of the layout generated when you use Evaluation Type 1, which produces a three-dimensional table of values. This Evaluation Type displays ASF fields on the vertical axis, and dates and times on the horizontal axis. The third axis is the list of databases specified in the Evaluation Profile for this report; the example shows data for the database "DB016-ALSBACH", whose DBID is 16. (The output was generated by running Predefined Evaluation 6 — see the section on predefined evaluations for details).

```
   16:27:23          *** A D A B A S  Statistics Facility ***              30.04.1997
                  DBID:   16    DB-NAME:    DB016-ALSBACH   1/1           MEV15001

   STORE-DATE        !     ! 09.03.1992 ! 16.03.1992 ! 23.03.1992 ! 30.03.1992
   STORE-TIME        !     !      17:34 !      23:00 !      23:00 !      22:00
   -----------------+-----+------------+------------+------------+------------
   DB-NAME           !     ! DB016-ALSBA ! DB016-ALSBA ! DB016-ALSBA ! DB016-ALSBA
   DATE NUC-START    !     ! 09.03.1992 ! 16.03.1992 ! 23.03.1992 ! 30.03.1992
   TIME NUC-START    !     !      02:32 !      02:41 !      02:43 !      02:38
   ASSO DEFINED      ! CYL !        530 !        530 !        530 !        530
   ASSO USED         ! CYL !        268 !        227 !        215 !        225
   DB DATA DEFINED   ! CYL !      1,164 !      1,164 !      1,164 !      1,164
   DB DATA USED      ! CYL !      1,138 !      1,073 !      1,068 !      1,070
   WORK DEFINED      ! CYL !         75 !         75 !         75 !         75
                     !     !            !            !            !
                     !     !            !            !            !
                     !     !            !            !            !
                     !     !            !            !            !
                     !     !            !            !            !
                     !     !            !            !            !
        Direct command ==> _____
   Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term  Prof  prev  next  -     +     Cumul <     >     Menu
```

Figure 2-13: Report Format for Evaluation Type 1

Scrolling horizontally and vertically

Often the reports are too large to fit onto a screen, so only a portion of the report can be displayed at any one time. Initially, the top left corner of the table of values is displayed. The keys PF10 and PF11 can be used for scrolling on the horizontal axis, i.e. to the left or right respectively. The keys PF7 and PF8 can be used for scrolling on the vertical axis, i.e. up or down respectively. The number of the page on display is shown at the top of the screen, according to the following scheme:
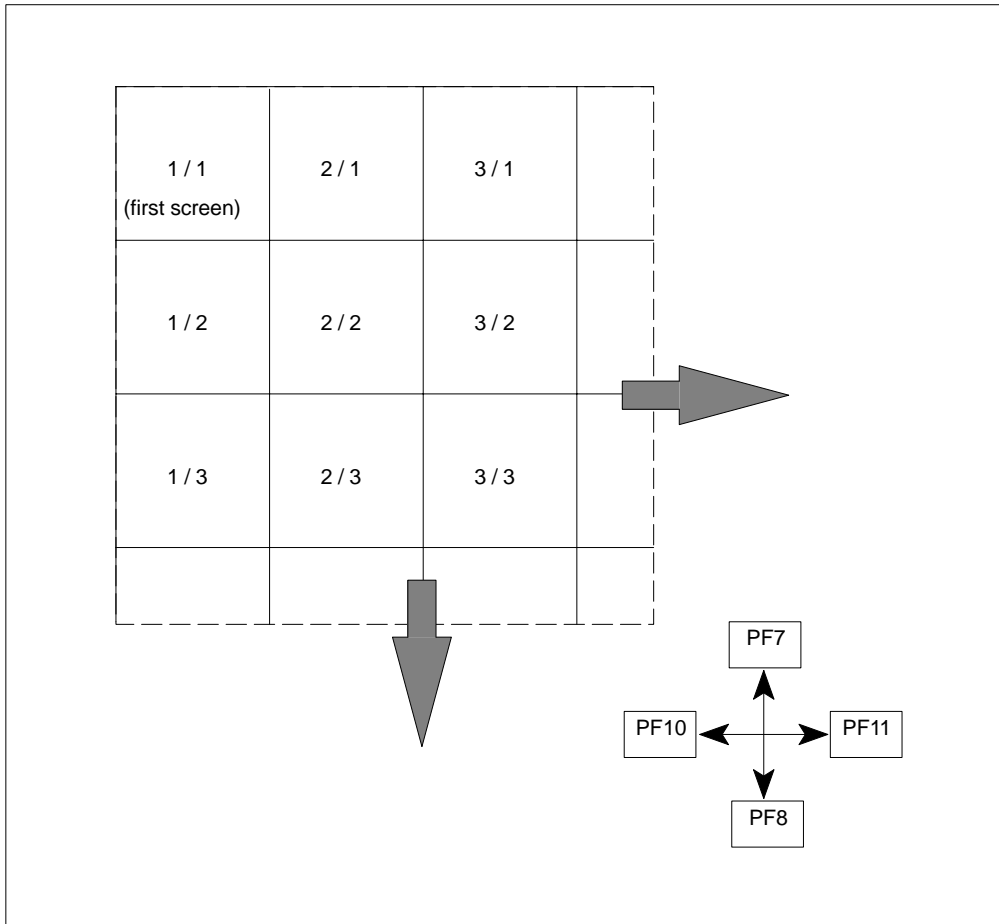
Figure 2-14: Report Page Layout

Note:
Scrolling is limited to 50 pages to the right and 50 pages down (the maximum page number is 50/50).

Scrolling on the third axis

For three-dimensional tables of values, the keys PF5 and PF6 are used for scrolling along the third axis. Figure 2-15 shows an example for Evaluation Type 1, in which the third axis contains a list of databases.

Alternatively, if you press PF4, an active help screen is displayed, containing a list of the values along the third axis. If you mark one of the choices, then press ENTER, the marked choice is selected.
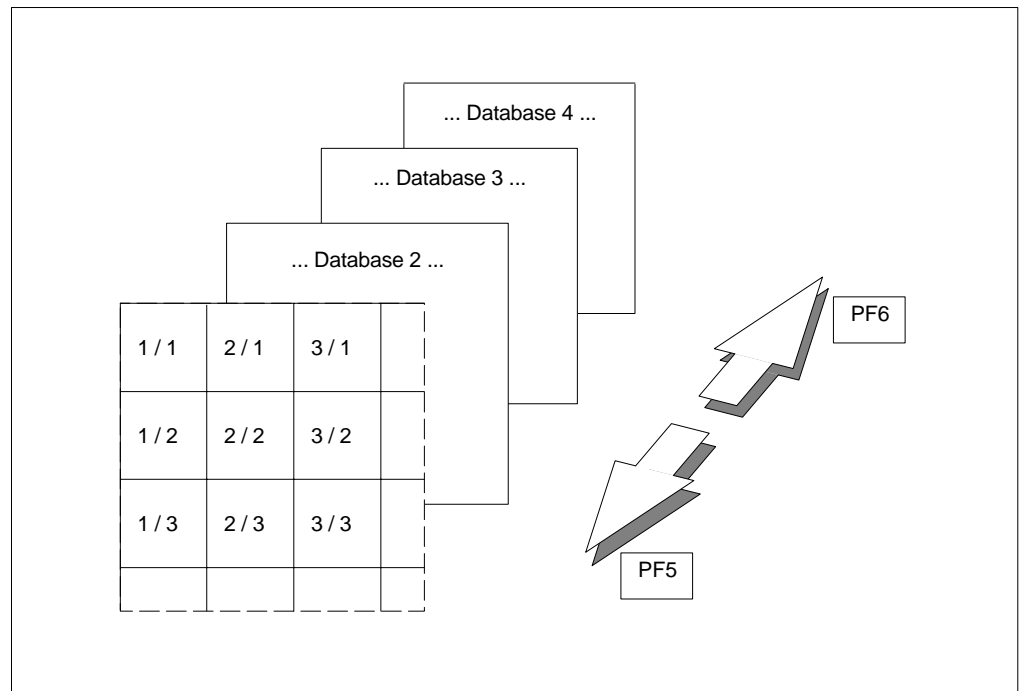
Figure 2-15: Scrolling on the third axis (example for Evaluation Type 1)

Note:
The third axis extends to a maximum of 50 levels.

Figure 2–1 in the *ASF Examples Manual* gives you an overview of the three dimensions for the evaluations of Type 1 – 8. Note that external accumulations, if available, are always performed along the horizontal axis.

THE MENU SYSTEM

Overview

The Menu System is the interactive component of ASF, and allows you to

- generate Evaluation Reports, based on data stored by the Store Program
- define groups of files and databases which are to be monitored by the Store Program, and to store these definitions as Store Profiles.
- define groups of fields, files and databases for which the stored ASF data is to be evaluated, and to store these definitions as Evaluation Profiles.
- run the Store Program on an ad hoc basis to collect current database statistics
- define additional Store Types.
- list or delete records stored by the Store Program
- run predefined evaluations
- administer the user access to ASF
- call ASF utilities

Online Help

The Menu System provides you with two kinds of help, namely *passive help* and *active help*.

Passive Help

You activate the passive help feature by pressing PF1 . If the cursor is positioned on an input field when you press PF1 , a text appears on the screen giving a short description of the purpose of the field and of related information such as the required format of input data for this field. Another way of selecting passive help for a field is to place a question mark in the first position of the input field, then press ENTER .

If the cursor is not positioned on an input field, then pressing PF1 will display a general text which describes the purpose and usage of the currently selected screen.

Active Help

If you enter an asterisk ("*") in an input field of the main menu or of any other menu, the ASF program will display on the screen a list of the allowable input values for that field. If you then select an item in the list, ASF deselects the help display and enters the marked item automatically into the menu from which the help feature was activated. If, however, there is no active help defined for a particular input field, the passive text for the screen is displayed.

Active Help with Start Selection

For fields whose expected input is a Store Profile, Evaluation Profile or Store Type, you can precede the asterisk by one or more alphanumeric characters. In this case, the display of allowable values for the field starts at the value which matches the given characters. If no value matches the characters exactly, then the display will start at the next available value in alphabetical order.

When the asterisk is preceded by one or more characters in this way, the active help display is not restricted to just those values matching the given pattern. This feature merely specifies a starting point in the active help display. You can still use the scroll keys PF7 and PF8 to move to the start or the end of the entire list.

Example

Assume that the cursor is on an input field where you are required to input the name of a Store Profile. If you want to use the active help facility to get a display of the available Store Profiles starting at the letter "K", then input "K*" in the input field and press ENTER. If there are any Store Profiles whose names start with this letter, they will be displayed, otherwise the display with start with the next Store Profile name in alphabetical order.

Note:
If you input characters after the asterisk, ASF ignores them.

Function Key Settings

The following PF-keys are defined throughout:

PF-key	Function
PF1	Display passive help text
PF3	Return to the calling screen (without saving data)
PF7	Scroll backwards by one screen
PF8	Scroll forwards by one screen
PF12	Return to main menu.

The Direct Command Line

The Direct Command Line, which appears at the bottom of every ASF menu, allows you to type commands which

- modify your current working environment
- start certain ASF functions directly even if the associated menu is not currently selected
- select options from the Main Menu directly, regardless of which menu is currently displayed

Such commands are called *Direct Commands*. The Main Menu options can be selected by typing the appropriate one-character code in the Direct Command Line. See the section **The Main Menu** later in this chapter for a list of the one-character codes which can be used as Direct Commands.

In addition to the Main Menu options, the following Direct Commands are available:

Direct Command	Purpose
FIN	Exit from the NATURAL environment.
INFO	Display the ASF long error message corresponding to the most recently displayed ASF short error message.
INFO *nnn*	Display the long error message corresponding to the ASF error number *nnn*.
KEEP	Retain the current environment parameters for use when initializing the next ASF session.
LFILE	Maintain the ASF DATA and PROFILES file numbers. See the Chapter **ASF System File Maintenance** in this manual for more details.
LINK FILE *filenumber*	Link the specified file number to all databases in the current (or last used) Evaluation Profile of type 5-10. This means that, for each database specified in the profile, any existing file numbers are deleted and an entry is made for the specified file number. Each time you use the LINK FILE command, the effect of the previous LINK FILE command is superseded.
LOGOFF	(same as FIN)
LOGON *xxxxx*	Log on to the NATURAL library *xxxxx*
MENU	Select the ASF Main Menu
MOD ON	Put ASF into Modify mode (for Predefined Evaluations). The last used Predefined Evaluation is activated.
MOD OFF	Return ASF to Capture mode.
PROCESS HELP	Delete duplicate help texts after an upgrade installation.
PROFILE	Select the screen "Define User Profile", which is used to modify your working environment for the current session.

Direct Command	Purpose
PROFILE *xxxxx*	Select the screen "Define User Profile", and display the profile for user *xxxxx*. If the profile for this user does not already exist, it will be created, and the values will be set to those for PROFILE STANDARD.
PROFILE STANDARD	Select the screen "Define User Profile" in a special mode which defines the initial working environment for new users.
SELECT	Select the Workplan (Screen "Predefined Evaluations and Reports", main menu option "P"). Note that you can also use the direct command "P" to select the workplan.
SELECT *nn*	Select the predefined evaluation *nn* from the list of predefined evaluations in the Workplan.
STORE *profilename storetype DBID*	Run the Store Program, using the named Store Profile and Store Type. The third parameter (DBID) is optional. If it is specified, ASF data will be stored for this database only. The database must be one of the databases specified in the Store Profile.
TRACE ON	Start the trace mode. All trace levels (1 to 16) are activated.
TRACE PROG	Start the "Program" trace level. ASF outputs the name of each NATURAL program, subprogram, subroutine etc. that it executes. TRACE PROG is equivalent to TRACE 1.
TRACE *n*	Start trace level *n*, where *n* is a number from 1 to 16. Trace level 1 is the same as TRACE PROG. In trace level 2, ASF outputs the values of certain field values. Trace levels 3 to 16 are reserved for future use.
TRACE OFF	Stop the trace mode. All trace levels (1 to 16) are deactivated.
TRACE	Display the current status of the trace mode.
TRIG PROG *progname*	Call the external program *progname* via FETCH.
USE PROG *progname*	Call the external program *progname* via FETCH RETURN.

Direct Command	Purpose
VERSION	Display the ASF version and the number of the correction last applied.

Batch Operations

The Menu System can be activated in Batch Mode. This is especially important for running the Store Program at Nucleus startup and termination, before the nucleus statistical values are refreshed and also for storing data cyclically. Data which is input to the Menu System in batch mode has exactly the same order and format as the data which is input online. The method for running the Store Program in batch mode uses the Direct Command Line feature of ASF to execute a STORE command. The format of the STORE command as used in the Direct Command Line is shown in Figure 3-1. The following figure shows an extract from a JCL job to run the Store Program in batch mode:

```
,STORE PROFILNAME STORETYP DBID
,,,,FIN
```

Figure 3-1: Running the Store Program in Batch Mode

Note that the STORE command is preceded by a comma (the standard delimiter is the comma, provided that the default settings "IM=D" and "ID=, " in the NATURAL parameter module have not been modified). This is because the ASF Main Menu has two input fields, of which the Direct Command Line is the second. Therefore, when running ASF in batch mode, the (blank) data for the first input field is terminated by the comma, and the remainder of the line is input to the Direct Command line. To terminate ASF (and exit the NATURAL environment) in batch mode, the command FIN (also listed in Figure 3-1) is included in the JCL job.

Absolute and Relative Date Format

In the menus, you can specify dates in either absolute format or relative format.

In absolute format, you specify a date in the form YYYY-MM-DD or DD.MM.YYYY, depending on the current default format for absolute dates, as defined in the User Profile. For example, you would specify May 19, 1997 as one of the following

    1997-05-19
    19.05.1997

depending on the current default format for absolute dates.

You can also specifiy the year with two digits only. In this case, ASF assumes that the resulting year is in the range from (current year – 50) to (current year + 49). If, for example, the current year is 1998, the values from 00 to 47 are interpreted as 2000 to 2047 and the values from 48 to 99 are interpreted as 1948 to 1999.

In relative format, you specify the date as a number of days, weeks or months relative to the current date. The valid formats are described in the following table:

Format	Description
$\pm nnn$D	The day is $\pm nnn$ days relative to today. The valid range for nnn is 0-999. Example: -1D means: Yesterday.
$\pm nnn$	The same as $\pm nnn$D, but ASF sets the corresponding input time field in the menu automatically to the current time of day. Example: +1 means: Tomorrow, at the current time.
$\pm nnn$Wd	The week is $\pm nnn$ weeks relative to the current week. The valid range for nnn is 0-160. The day of the week is given by d, whereby Monday=1, Tuesday=2, etc. If d is not specified, the value 1 (the first day of the week, namely Monday) is assumed. Examples: +0W2 means: Tuesday of the current week.
$\pm nn$Mdd	The month is $\pm nn$ months relative to the current month. The valid range for nn is 0-36. The day relative to the start of the month is given by dd. If dd is not specified, the value 1 (the first day of the month) is assumed.

Examples:
+1M15 means: the 15th day of next month.
-1M3 means: the 3rd day of the previous month.

Note:

If you use the format ±nnn as listed above, ASF sets the corresponding input time field automatically to the current time of day. If you use any of the other formats listed above, the corresponding input time field is not set automatically, so you must either enter the time explicitly or use the appropriate default value for the input time field.

		ASF Main Menu	
	Code	Service	
	G	General evaluation	
	R	Critical report	
	C	Critical trend report	
	P	Predefined evaluations and reports	
	N	Store nucleus records	
	T	Store trend records	
	M	Maintain nucleus records	
	E	Evaluation-profile administration	
	S	Store-profile administration	
	U	User maintenance	
	A	ASF average/delta/transfer utilities	

Online Services Main Menu

Option

G → General evaluation
- evaluation reports with evaluation type 1–8

R → Critical report
- evaluation reports with evaluation type 9

C → Critical trend report
- evaluation reports with evaluation type 10

P → Predefined evaluations and reports
- predefined general evaluations, critical reports and critical trend reports (Workplan)

N → Store nucleus records
- Store data now
- Store-type administration

T → Store trend records
- Store trend records

M → Maintain nucleus records
- Show nucleus records
- Delete records

E → Evaluation-profile administration
- add an evaluation profile
- copy/modify/rename/delete an evaluation profile

Figure 3-2: ASF Main Menu Functions

Description of the Menus

The Main Menu

```
  11:48:28          *** A D A B A S  Statistics Facility ***        23.04.1997
                             - Main Menu -                            MOS00001

                  Code                 Service
                 -------    -----------------------------------
                   G       General evaluation
                   R       Critical report
                   C       Critical trend report
                   P       Predefined evaluations and reports
                   N       Store nucleus records
                   T       Store trend records
                   M       Maintain nucleus records
                   E       Evaluation-profile administration
                   S       Store-profile administration
                   U       User maintenance
                   A       ASF average/delta/transfer utilities
                  ./?      Terminate / Help
                 -------    -----------------------------------
        Enter code:  _

        Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
         HELP  More  Term                                              Menu
```

Figure 3-3: ADABAS Statistics Facility Main Menu

Purpose

The menu lists the services which are available. You can select one of the listed services by typing the one-letter code for the service in the "Enter code" field. When you have entered the input data, press ⌈ENTER⌉ to activate the service which you selected.

Service Codes

Code G: General evaluation (Evaluation types 1-8)

This option selects the screen for generating an Evaluation Report with an Evaluation Type of 1-8. These reports show the current status of databases and files, and do not include information concerning critical values.

Code R: Critical Report (Evaluation Type 9)

This selects the screen for running a Critical Report. A Critical Report lists the data fields which, according to the most recently stored data, have reached or exceeded their critical values.

Code C: Critical Trend Report (Evaluation type 10)

This selects the screen for running a Critical Trend Report. A Critical Trend Report lists the data fields which, based on their past and current values, will reach or exceed their critical values within a certain period of time, e.g. three months.

Code P: Predefined evaluations and reports

This selects the service for executing a predefined general evaluation, critical report or critical trend report. The list of predefined evaluations and reports is called the *Workplan*.

Code N: Store nucleus records

This selects the screen for either starting the Store Program, or for modifying the list of available Store Types.

Code T: Store trend records

This option selects the screen for storing a set of trend records. The stored trend records can then be evaluated by running the General Evaluation service (code G in the Main Menu).

Code M: Maintain nucleus records

This option selects the screen for displaying or deleting ASF records.

Code E: Evaluation-profile administration

This option selects the screen for the administration of Evaluation Profiles. You can define new profiles, and copy, modify, rename or delete existing profiles.

Code S: Store-Profile Administration

This option selects the screen for the administration of Store Profiles. You can define new profiles, and copy, modify, rename or delete existing profiles.

Note:
Additional Store Types can be defined with the "Store nucleus records" service.

Code U: User maintenance

This option selects the screen for User Administration. You can grant or deny permission to users to modify Store Profiles and Evaluation Profiles, and to run evaluations.

Note:
This option is only available when NATURAL SECURITY is being used. Furthermore, you must be registered in NATURAL SECURITY as Administrator to select this option. See the section "Post-Installation Procedures" in the ADABAS STATISTICS FACILITY *Installation Notes for details.*

Code A:

This option selects the screen for the ASF Utilities and some other special functions.

Input field description

Enter code:

Enter the code of the service you wish to activate.

General Evaluation (Main Menu option G)

```
 15:30:36            *** A D A B A S Statistics Facility  ***         1997-11-21
                       - General evaluation -                         MSA00001

                    Code                 Service
                  -------  ------------------------------------
                    S      Start general evaluation
                    ?      Help
                    .      Terminate
                  -------  ------------------------------------
          Enter code: _

      Eval. profile: _____
    Evaluation type: __
    Time frame from: _____ , _____  to  _____ , _____

      Store profile: _____
         Store type: __
             Origin: ___
             Screen: _  Printer: _  PC-File: _

      Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       HELP  More  Term             Capt                                  Menu
```

Figure 3-4: Menu for General Evaluation

Note:
for Evaluation Types 2 and 6, the text "Time frame from" appears as shown here. For Evaluation Types 1,3,4,5,7 and 8, this text is replaced by the text "Points of time".

Purpose

This screen is used to start the Evaluation Reports with Evaluation Type 1-8.

Screen selection

This menu is reached when you select the service code "G" in the main menu. In this case, the PF6 key is labelled "Capt".

The menu is also be reached when you use the "modify" option in the list of predefined evaluations (main menu option "P"). In this case, the PF6 key is labelled "MOD*nn*", where *nn* is the number of the predefined evaluation.

Service Codes

Code S: Start evaluation

Select this service to start the evaluation. You supply information concerning the period of time which is to be analyzed, the name of the Store Profile which was used when storing the data, the Store Type, the Evaluation Profile to be used, and the output medium for the evaluation (screen, printer or PC). The output is formatted according to the Evaluation Type (1-8).

Input field description

Enter code:

Enter "S" to start the evaluation.

Eval. profile:

the name of the Evaluation Profile which ASF will use when evaluating the stored data. Type "*" to get an active help list of the Evaluation Profiles for the specified Evaluation Type.

Evaluation type:

The type (1-8) of report which ASF will generate.

Time frame from ... to: (Evaluation Types 2 and 6 only)

Enter here the starting date/time and the end date/time of the period to be evaluated. Defaults: the "to" date is today, the "to" time is 23:59.

You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in this chapter.

Note:
Relative dates are especially useful when used in the Workplan or in a batch environment (see Option P in the Main Menu)

Points in time from ... to: (Evaluation Types 1,3,4,5,7 and 8 only)

Type here the starting date/time and the end date/time of the period to be evaluated.
Defaults: the "from" date is today, the "from" time is 00:00, the "to" date is today, the "to" time is 23:59.

You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in this chapter.

Store profile:

the name of the Store Profile which was used by the Store Program while the data was being collected. Type "*" to get an active help list.

Store type:

the Store Type used by the Store Program while the data was being collected. (Note: to check which Store Type was used with which Store Profile, use the service "Maintain ASF records", which is available in the ASF main menu). Type "*" to get an active help list.

Origin:

The Evaluation can be based on nucleus data stored by the Store Program or trend data created by running the service "Store Trend Records" (code T in the Main Menu). The choices are: ALL (both nucleus and trend data), NU (nucleus data only) and TR (trend data only). Type "*" to get an active help list.

Note:
When TR is selected, certain ASF fields may not be included in the report. This is because ASF considers certain data fields to be unimportant for trend records.

Screen / Printer / PC-File:

the medium to which the output is sent. Mark one of the choices accordingly.
Default: Screen

If you mark "Screen" or "Printer", some header lines are written out at the top of each page. On the PC, the header lines are only written when you mark "PC–File" with an "H".

Critical Report (Main Menu option R)

```
 15:29:48            *** A D A B A S Statistics Facility  ***         1997-11-21
                         - Critical report -                          MCR00001


                  Code                    Service
                -------   -----------------------------------
                  S       Start critical report
                  ?       Help
                  .       Terminate
                -------   -----------------------------------

        Enter code: _

     Eval. profile: _____

     Store profile: _____
        Store type: __
            Screen: _   Printer: _   PC-File: _

     Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       HELP  More  Term              Capt                                 Menu
```

Figure 3-5: Menu for Critical Report

Purpose

This screen is used to start a Critical Report.

If you mark "Printer" as the output device, the output of the Critical Report is sent to each of the CON-NECT cabinets specified in your User Profile in addition to the standard printer.

Screen selection

This screen is reached by selecting the service code "R" in the main menu. In this case, the PF6 key is labelled "Capt".

The menu is also reached when you use the "modify" option in the list of predefined evaluations (main menu option "P"). In this case, the PF6 key is labelled "MOD*nn*" instead of "Capt", where *nn* is the number of the predefined evaluation.

Input field description

Enter code:

Enter "S" to start the Critical Report.

Eval. profile:

the name of the Evaluation Profile which ASF will use when evaluating the stored data. Type "*" to get an active help list.

Store profile:

the name of the Store Profile which was used by the Store Program while the data was being collected. Type "*" to get an active help list.

Store type:

the Store Type used by the Store Program while the data was being collected. Type "*" to get an active help list.

Screen / Printer / PC-File:

the medium to which the output is sent. Mark one of the choices accordingly.
Default: Screen

If you mark Printer, and you have specified one or more CON-NECT cabinets in your User Profile (refer to the screen "Define User Profile"), the output of the Critical Report will be sent as a memo to the named CON-NECT cabinets as well as being sent to the default printer.

If you mark "Screen" or "Printer", some header lines are written out at the top of each page. On the PC, the header lines are only written when you mark "PC–File" with an "H".

Note:
A Critical Report shows data which was recorded during the last run of the Store Program (using the given Store Profile and Store Type). This does not necessarily represent the current *database status, if the data was stored some time ago (for example one or two days ago). If you take corrective action to the database according to the contents of a Critical Report, you must subsequently run the Store Program with the same Store Profile and Store Type, so that the changes will be reflected in a subsequent Critical Report.*

Description of Output

```
 15:28:35          ***  A D A B A S  STATISTICS FACILITY ***        30.04.1997
                   Critical report based on: 13.04.1992 23:12      MACR0001
   Evaluation profil: PROD-LIMIT-YELL Store profil: TEST-DB-ALL Type: WE
                                                                    < ALL >
   DB ! File ! Field           !      Value !Unit!Parm!      Limit !Unit
 ------+-------+----------------+-----------+----+----+-----------+----
   16 !       ! DB DATA USED    !      92.8 ! PC ! GE !         85 ! PC
      !   122 ! NI EXTENTS      !         3 !    ! GE !          3 !
   17 !       ! DB DATA USED    !      99.7 ! PC ! GE !         85 ! PC
      !    39 ! DATA EXTENTS    !         3 !    ! GE !          3 !
      !    71 ! DATA EXTENTS    !         3 !    ! GE !          3 !
   26 !       ! DB DATA USED    !      97.3 ! PC ! GE !         85 ! PC
      !    44 ! AC EXTENTS      !         3 !    ! GE !          3 !
      !   185 ! NI EXTENTS      !         5 !    ! GE !          3 !
      !       ! DATA EXTENTS    !         4 !    ! GE !          3 !
      !       ! AC EXTENTS      !         3 !    ! GE !          3 !
   37 !       ! DB DATA USED    !      86.4 ! PC ! GE !         85 ! PC
      !       !                 !           !    !    !            !
      !       !                 !           !    !    !            !
      !       !                 !           !    !    !            !
    Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      HELP          Term  Time  Prev  Next   -     +                    Menu
```

Figure 3-6: Sample output for Critical Report

Figure 3-6 shows an example of the information contained in a Critical Report. The output was generated by running Predefined Evaluation 2 — see the section on Predefined Evaluations for further details.

If you press PF4 , an active help list is displayed of all of the stored data sets which were stored with the same Store Profile and Store Type. If you mark one of the data sets, then the Critical Report for that data set will be displayed. Alternatively, you can use the PF5 and PF6 keys to page backwards and forwards through the list of data sets stored with the current Store Profile and Store Type.

Critical Trend Report (Main Menu option C)

```
 17:21:34          *** A D A B A S  Statistics Facility ***        12.03.1997
                      - Critical trend report -                    MCT00001


                  Code                Service
                 -------    ------------------------------------
                   S       Start critical trend report
                   ?       Help
                   .       Terminate
                 -------    ------------------------------------
        Enter code : _

    Trend based on : _____ , _____   to  _____ , _____
         limited to : _____ , _____

      Eval. profile : _____
     Store profile : _____
        Store type : __
             Screen : _  Printer : _  PC-File : _

      Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term            Capt                                  Menu
```

Figure 3-7: Menu for Critical Trend Report

Purpose

This screen is used to start a Critical Trend Report. A Critical Trend Report lists ASF data fields which are either already critical, or which will reach their critical limit within a specified time.

Screen selection

This screen is reached by selecting the service code "C" in the main menu. In this case, the PF6 key is labelled "Capt".

The menu is also be reached when you use the "modify" option in the list of predefined evaluations (main menu option "P"). In this case, the PF6 key is labelled "MOD*nn*", where *nn* is the number of the predefined evaluation.

Input field description

Enter code:

Enter "S" to start the Critical Trend Report.

Trend based on :

the start and end date and time of the period in which the original ASF Nucleus records were stored. The default time for the "from" field is 00:00. The default time for the "to" field is 23:59.

You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in this chapter.

Note:
Relative dates are especially useful when used in the Workplan (see Option P in the Main Menu)

limited to:

the end date and time to be considered for the critical trend. The default time is 23:59. The format of the date field is the same as for "Trend based on".

Eval. profile:

the name of the Evaluation Profile which contains the definitions of the databases, files and ASF data fields for which the Critical Trend Report is to be generated. Type "*" to get an active help list.

Store profile:

the name of the Store Profile which was used by the Store Program to collect the original ASF Nucleus data. Type "*" to get an active help list.

Store type:

the Store Type used by the Store Program while the data was being collected. Type "*" to get an active help list.

Screen / Printer / PC-File:

> the medium to which the output is sent. Mark one of the choices accordingly.
> Default: Screen

> If you mark "Screen" or "Printer", some header lines are written out at the top of each page. On the PC, the header lines are only written when you mark "PC–File" with an "H".

Description of Output

```
 13:58:03          ***  A D A B A S  STATISTICS FACILITY ***        30.04.1997
   Critical trend - base: 01.03.1997 - 15.04.1997 limit: 30.09.1997  MACT0001
   Evaluation profil: PROD-LIMIT-TREND Store profil: TEST-DB-ALL Type: WE wee
                                                                  < ALL >
   DB !  File ! Field            !     Limit !Unit!Parm! Date       ! Accuracy
  ------+-------+-----------------+-------------+----+----+-----------+-------
   16 !   235 ! NI EXTENTS       !        5 !    ! GE ! 21.06.1997 ! ./.
      !   122 ! AC EXTENTS       !        5 !    ! GE ! 24.05.1997 ! ./.
   17 !    39 ! DATA EXTENTS     !        5 !    ! GE ! 11.05.1997 ! ./.
      !    71 ! DATA EXTENTS     !        5 !    ! GE ! 09.09.1997 ! ./.
   26 !       ! ASSO USED        !       99 ! PC ! GE ! 29.04.1997 ! 91
   27 !       ! DB DATA USED     !       99 ! PC ! GE ! 16.09.1997 ! 43
      !       !                  !          !    !    !            !
      !       !                  !          !    !    !            !
      !       !                  !          !    !    !            !
      !       !                  !          !    !    !            !
      !       !                  !          !    !    !            !
      !       !                  !          !    !    !            !
      !       !                  !          !    !    !            !
      !       !                  !          !    !    !            !
      Direct command ==> _____
  Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Term                  -      +            Graph Menu
```

Figure 3-8: Sample output for Critical Trend Report

Figure 3-8 shows an example of the type of information shown in a Critical Trend Report (the output was generated by running Predefined Evaluation 5 — see the section on Predefined Evaluations for further details). The example shows that the report was run on April 30th, is based on data stored between March 1st and April 15th, and that the trend was extrapolated to September 30th. ASF calculated that the fields shown would reach their critical limits within this time, on the dates shown in the "Date" column. The value in the column "Accuracy" for each critical field is the *coefficient of determination* (expressed as a percentage), which is a standard statistical quantity for measuring the linearity of a data sample. Used in the context of the Critical Trend Report, it gives a measure of confidence in the prediction. Values above 90% indicate a very reliable prediction.

You can select the Graph feature of the Critical Trend Report by pressing the PF11 key, as indicated in Figure 3-8. When you do this, a graph is displayed on the screen, indicating the development of the first of the ASF data fields during the period in question. The graph also indicates the date at which the ASF data field will reach or exceed the critical limit. The keys PF7 and PF8 can be used in this graph mode to scroll backwards and forwards respectively within the list of ASF data fields.

The graph for a particular ASF data field can be selected directly from the Critical Trend Report output screen by moving the cursor to the name of the field and pressing PF11 .

Figure 3-9 shows the graph for the ASF data field "ASSO USED", which is the 5th ASF data field listed in Figure 3-8.

```
 16:54:18          ***  A D A B A S  STATISTICS FACILITY ***        30.04.1997
 Critical trend - base: 01.03.1997 - 15.04.1997 limit: 30.09.1997     MACTG001
           Database: 26 File: 0 Field: ASSO USED Unit: PC
       123 +                  :
           !                  :
           !                  :
        99 ! ...............:........................................... GE
           !                  :
           !                  :
           !          * *     :
           !                  :
           !          *       :
           !                  :
           !        *         :
           ! * *              :
           !                  :
           !                  :
           !                  :
           +BBBBBBBBBBBBBBLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLL+
        01.03.1997                                              30.09.1997

 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help      Term                        -      +                   Menu
```
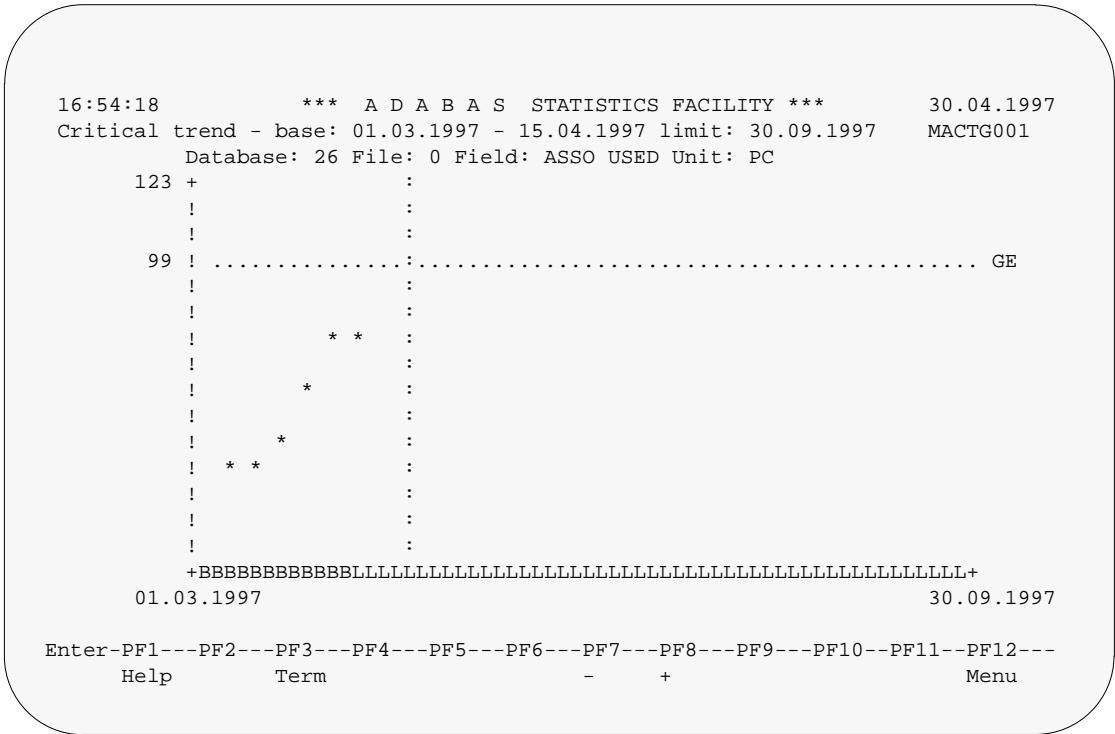
Figure 3-9: Sample graphical output for Critical Trend Report

The graph shows values for the field ASSO USED for database 26. The critical limit of 99% for this field is shown as a horizontal line of dots. The horizontal axis is the time axis. It is labelled "B" for the period of time for which stored ASF data exists, and "L" for the period of time for which a prediction is being made. The asterisks show the ASF data which is stored for the field ASSO USED. One asterisk on the graph might represent several stored data values which cannot be displayed separately due to the limited resolution of the graph. The vertical line of dots which meets the horizontal axis shows the predicted date when the value of ASSO USED will reach the critical limit.

Workplan: Predefined evaluations and reports (Main Menu option P)

```
ASF330 Mark 'S'tart for evaluation or 'I'nfo, 'M'odify, 'D'elete, '*', '.'.

 13:25:41          *** A D A B A S  Statistics Facility ***         30.04.1997
                       - Evaluation selection -                     MEVSE001


  01 __ Limit-report 'RED'   : Used storage >= 95 %, extents >= 4
  02 __ Limit-report 'YELLOW': Used storage >= 85 %, extents >= 3
  03 __ Limit-report 'YELLOW': HWM's,S2,format overwr.,throwbacks,restarts...
  04 __ Limit-report 'BLUE'  : Waste of resources disk/main storage, pools...

  05 __ Limit-report TREND   : Development of ASSO/DATA storage, 5th. extents
  06 __ Disk-storage    : Historical development of a database (time frame)
  07 __ Disk-storage    : Multiple databases at one glance (point in time)
  08 __ File-overview   : Historical development of a file (time frame)

  09 __ File-overview   : Multiple files at one glance (point in time)
  10 __ IO-behaviour    : Historical development of a database (time frame)
  11 __ IO-behaviour    : Multiple databases at one glance (point in time)
  12 __ Resources       : Historical development of a database (time frame)


     Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       HELP  More  Term                     -      +                   Menu
```

Figure 3-10: Screen for Predefined Evaluations and Reports

Purpose

This screen displays the *Workplan*, which is a list of predefined evaluations and reports. Associated with each item in the Workplan is a set of parameters which can be used to start a General Evaluation, Critical Report or Critical Trend Report. Using this feature, the input data required to run frequently used evaluations can be defined once in the Workplan, then activated as often as required.

Description

Using the Workplan, it is possible to store the parameters which are required for running a General Evaluation, Critical Report or Critical Trend Report. When you press PF6 ("Capture") in any of the screens General Evaluation, Critical Report or Critical Trend Report, the values currently displayed in the input fields of the screen are added as a new item to the Workplan. The evaluations can be started directly from the Workplan by entering "S" in the input field beside the appropriate item.

After you install ASF for the first time, 30 of the first 35 slots in the Workplan are preset to run examples of predefined evaluations supplied by Software AG. These examples access test ASF data records, so you can activate any of them immediately after installing ASF in order to view some sample ASF reports. Corresponding to each of these examples is an Evaluation Profile, also supplied by Software AG, which ASF requires to run the example. The names of these Evaluation Profiles are given in the following pages.

You can add your own predefined evaluations to this list (up to 96 predefined evaluations are allowed). You can also delete one or more of the examples supplied by Software AG and use the vacant slots for your own predefined evaluations. See the Workplan Functions below for details.

Screen selection

This screen is reached by selecting the service code "P" in the main menu.

Workplan Functions

The Workplan functions are activated by typing the appropriate letter in the input field corresponding to the item, then pressing ENTER. These functions are:

Function S: Start a predefined evaluation or report

The function "S" causes the evaluation or report to run.

Function I: Display information

Associated with each item in the Workplan are several lines of descriptive text. The first line of each Workplan item is shown in the Workplan screen. The function I causes the additional lines of text to be displayed.

Function M: Modify a predefined evaluation or report

If you wish to change any of the data values of a predefined evaluation or report, select the function M (Modify). This causes the corresponding screen for General Evaluation, Critical Report or Critical Trend Report to be displayed, with all of the input fields filled with the data which was stored in the Workplan.

Note that when you select General Evaluation, Critical Report or Critical Trend Report from the Workplan, the PF6 key is labelled MOD*nn,* where *nn* is the number of the Workplan item.

You can now make your modifications. When you have completed the modifications, press PF6. The descriptive text for this Workplan item is displayed on the screen, and you can modify it if you wish. To exit from the text window, press ENTER. If you have changed the text, you will be asked to confirm the change by pressing ENTER again.

Subsequently, the Workplan is redisplayed.

Function D: Delete

The function "D" deletes an item from the Workplan.

Active Help

Type "*" to get an active help list of the Workplan functions.

Editor Functions for the Workplan

ASF provides editor functions for the administration of the Workplan. Using these functions, items in the list can be copied, moved to another position or deleted.

The following editor functions can be applied to an item in the list by inserting the two character code in the item's input field:

Function	Description
.X	Mark an item with "X"
.Y	Mark an item with "Y"
.C	Make a copy of the current item and insert it directly after the current item. All of the following items are moved down one position.
.D	Delete the item. All of the following items are moved up one position.
.A	Activate an item. This defines a "destination" position for the Copy and Move functions listed below. The activated item is highlighted on the screen.

The following editor functions must be entered on the Direct Command Line:

Function	Description
CX-Y	All of the items between the items marked "X" (function ".X") and "Y" (function ".Y") are copied and inserted directly after the activated item (function ".A"). The following items are moved down the appropriate number of positions.
MX-Y	All of the items between the items marked "X" (function ".X") and "Y" (function ".Y") are moved from their current position to directly after the activated item (function ".A").
DX-Y	All of the items between the items marked "X" (function ".X") and "Y" (function ".Y") are deleted. The following items are moved up the appropriate numbner of positions.

To move a single item from one position in the list to another, it must be marked firstly with ".X", then with ".Y", then moved with "MX-Y".

Summary of the standard Predefined Evaluations

A short description of each of the predefined evaluations supplied as part of the ASF product now follows.

Predefined Evaluation 1

This is a Critical Report, showing ASF data fields which have reached levels which require immediate attention by the DBA, such as: ASSO or DATA usage over 95%, or files in their 4th or 5th extent.

This evaluation uses the Evaluation Profile PROD-LIMIT-RED, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 2

This is a Critical Report, showing disk-related ASF data fields which have reached levels which will require attention by the DBA in the near future, such as: ASSO or DATA usage over 85%, or files in their 3rd extent.

This evaluation uses the Evaluation Profile PROD-LIMIT-YELL, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 3

This is a Critical Report, showing performance-related ASF data fields which have reached levels which will require attention by the DBA in the near future. Examples of the fields are: high water marks, S2 commands, format overwrites and throwbacks.

This evaluation uses the Evaluation Profile PROD-LIMIT-YELL1, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 4

This is a Critical Report, showing where resources are being wasted, such as: ASSO usage under 50%, pool usage under 20%, Normal Index unused blocks greater than 10000 blocks.

This evaluation uses the Evaluation Profile PROD-LIMIT-BLUE, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 5

This is a Critical Trend Report, showing predicted disk space problems.

This evaluation uses the Evaluation Profile PROD-LIMIT-TREND, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 6

This is an evaluation of type 1, showing the historical development of disk-related ASF fields (for example ASSO usage, DATA usage) of a database.

This evaluation uses the Evaluation Profile SPACE-ONE-DB, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 7

This is an evaluation of type 3, showing the status of disk-related ASF data fields (for example ASSO usage, DATA usage) of several databases simultaneously.

This evaluation uses the Evaluation Profile SPACE-ALL-DB, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 8

This is an evaluation of type 5, showing the historical development of disk-related ASF fields of a file.

This evaluation uses the Evaluation Profile FILE-OVERVIEW-A, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 9

This is an evaluation of type 7, showing the status of disk-related ASF data fields of several files simultaneously.

This evaluation uses the Evaluation Profile FILE-OVERVIEW-B, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 10

> This is an evaluation of type 1, showing the historical development of IO-related ASF fields (for example ASSO reads, DATA reads, logical reads) of a database.
>
> This evaluation uses the Evaluation Profile IO-ONE-DB, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 11

> This is an evaluation of type 3, showing the status of IO-related ASF data fields (for example ASSO reads, DATA reads, logical reads) of several databases simultaneously.
>
> This evaluation uses the Evaluation Profile IO-ALL-DB, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 12

> This is an evaluation of type 1, showing the historical development of resource-related ASF fields (for example thread usage, command usage) of a database.
>
> This evaluation uses the Evaluation Profile RESOURCES-ONE-DB, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 13

> This is an evaluation of type 3, showing the status of resource-related ASF data fields (for example thread usage, command usage) of several databases simultaneously.
>
> This evaluation uses the Evaluation Profile RESOURCES-ALL-DB, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type WE.

Predefined Evaluation 14

> This is an evaluation of type 4, showing the development of a single database-related ASF data field (for example buffer efficiency, DATA and ASSO reads/writes) in several databases simultaneously.
>
> This evaluation uses the Evaluation Profile BUFF. EFFICIENCY, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type DA.

Predefined Evaluation 15

This is an evaluation of type 8, showing the development of a single file-related ASF data field (for example, NUM. RECS LOADED) in several files simultaneously.

This evaluation uses the Evaluation Profile NEW-FILE-FIELDS, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type DA.

Predefined Evaluation 16

This is an evaluation of type 2, showing the maximum and minimum values recorded during 1 month for various disk-related ASF data fields in several databases simultaneously.

This evaluation uses the Evaluation Profile NEW-SPACE-DB, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type DA.

Predefined Evaluation 17

This is an evaluation of type 6, showing the maximum and minimum values recorded during 1 month for various file-related ASF data fields in several databases simultaneously.

This evaluation uses the Evaluation Profile NEW-SPACE-FILE, and accesses ASF records which were stored using the Store Profile TEST-DB-ALL and Store Type DA.

Predefined Evaluation 18

This shows all currently loaded databases and files. The list is generated by using a Critical Report in an unusual way, namely by specifying the search criteria as "every database and file whose ID is greater than 0". Since this is true for all databases and files, the Critical Report will display them all.

This evaluation uses the Evaluation Profile NEW-LIST-FILES, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type DA.

Predefined Evaluation 19

This shows all files currently loaded for a single database. The list is generated by generating a Critical Report using the same technique as for Predefined Evaluation 18.

This evaluation uses the Evaluation Profile NEW-LIST-FILES-D, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type DA.

Predefined Evaluations 20-24

The slots for the predefined evaluations 20-24 are empty. You can use them for your own predefined evaluations.

Predefined Evaluation 25

This is an evaluation of type 1, showing values for I/O related ASF data fields for a single database on a daily basis over a period of 3 months.

This evaluation uses the Evaluation Profile NEW-DB-IO-1, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type DA.

Predefined Evaluation 26

This is an evaluation of type 1, showing I/O related ASF data fields from weekly modified average records over a period of 3 months for a single database.

This evaluation uses the Evaluation Profile NEW-DB-IO-1, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "+W" (weekly modified average records).

Predefined Evaluation 27

This is an evaluation of type 1, showing the same information as for Predefined Evaluation 26, but based on monthly modified average records instead of weekly modified average records.

This evaluation uses the Evaluation Profile NEW-DB-IO-1, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "+M" (monthly modified average records).

Predefined Evaluation 28

This is an evaluation of type 1, showing the weekly changes which occurred (differences only) for certain nucleus parameters over a period of about 10 weeks for a single database.

This evaluation uses the Evaluation Profile NEW-DB-PARA, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "&W" (weekly difference records).

Predefined Evaluation 29

This is an evaluation of type 1, showing the values of nucleus parameters on a daily basis over a period of about 5 weeks for a single databasee.

This evaluation uses the Evaluation Profile NEW-DB-PARA, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type DA.

Predefined Evaluation 30

This is an evaluation of type 1, showing similar values to Predefined Evaluation 28, but showing monthly differences over a period of 4 months.

This evaluation uses the Evaluation Profile NEW-DB-PARA, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "&M" (monthly difference records).

Predefined Evaluation 31

This is an evaluation of type 1, showing the development of disk-related ASF data fields expressed as a weekly difference over a period of several months.

This evaluation uses the Evaluation Profile NEW-DB-SPACE-1, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "&W" (weekly difference records).

Predefined Evaluation 32

This is an evaluation of type 3, showing a comparison of monthly loads in several databases simultaneously.

This evaluation uses the Evaluation Profile NEW-AMOUNT-IO, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "&M" (monthly difference records).

Predefined Evaluation 33

This is an evaluation of type 4, showing a comparison of weekly averages (for non-cumulative ASF data fields such as BUFF. EFFICIENCY) and weekly differences (for cumulative fields such as READ ASSO) in several databases simultaneously over a period of several months.

This evaluation uses the Evaluation Profile BUFF.EFFICIENCY, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "+W" (weekly modified average records).

Predefined Evaluation 34

This is a Critical Report, showing critical ASF data fields in a given monthly modified average record.

This evaluation uses the Evaluation Profile NEW-AVER-CRIT, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "+M" (monthly modified average records).

Predefined Evaluation 35

This is an evaluation of type 8, showing the development of disk-related information for files in a given database. The values show weekly differences in several files simultaneously over a period of several months.

This evaluation uses the Evaluation Profile NEW-FILE-FLDS, and accesses ASF records which were stored using the Store Profile NEW-TEST-DB-ALL and Store Type "&W" (weekly difference records).

Store Nucleus Records (Main Menu option N)

```
  17:17:24            *** A D A B A S  Statistics Facility ***          28.04.1997
                        - Store nucleus data environment -               MSN00001


                    Code                  Service
                  -------  ------------------------------------
                    S     Store data now
                    F     Store data without file-information
                    A     Store type administration
                    ?     Help
                    .     Terminate
                  -------  ------------------------------------


          Enter code : _

      Store profile : _____
         Store type :

   Reduced on DB-ID : _____

       Direct command ==> _____
  Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term                                              Menu
```

Figure 3-11: Menu for Store Nucleus Records

Purpose

This screen is used to run the Store Program once for a particular Store Profile and Store Type, or to modify the list of user-defined Store Types.

Screen selection

This menu is reached by selecting the service code "N" in the main menu.

Service Codes

Code S: Store Data Now

> Select this option to run the Store Program on an ad-hoc basis. The program runs once, collecting current data for the databases and files defined in the Store Profile, then terminates.

Code F: Store data without file information

> This option is similar to *Store Data Now*, but stores only database records; any files specified in the Store Profile are ignored. As a result, this option executes faster than *Store Data Now*, so it is useful in cases where speed is required, for example when storing End Nucleus (Store Type=EN) records.

Code A: Store Type administration

> Select this option to obtain the menu for the administration of the user-defined Store Types. With this service you can define new Store Types, or modify or delete existing user-defined Store Types. It is, however, not possible to modify or delete the predefined Store Types.

> The screen for "Store type administration" shows a list of the currently defined Store Types. You define an new user-defined Store Type by appending it to the end of the list. You delete an existing user-defined Store Type by overwriting the name of the Store Type with blanks then pressing the ENTER key.

Input field description

Enter code:

> the code of the service you wish to activate.

Store profile:

> the name of the Store Profile which is to be used by the Store Program to collect the data.

Store type:

> the Store Type to be used by the Store Program to collect the data. Type "*" to get an active help list.

> *A summary of the Store Types follows the description of the input fields.*

Reduced on DB-ID:

> If you enter a database ID in this optional input field, then data will be stored only for the database specified. The database ID must be one of those defined in the Store Profile.

Summary of the Store Types

The following Store Types are predefined for use with Store Nucleus Records:

Start Nucleus (SN)

This Store Type is used when the Store Program is run directly after the Nucleus startup. Special JCL is required when using this Store Type.

End Nucleus (EN)

This Store Type is used when the Store Program is run immediately before ending the nucleus session. Special JCL is required when using this Store Type.

Refresh Nucleus (RN)

This Store Type can be used when the Store Program is run immediately before the nucleus statistical values are refreshed by the ADADBS 'REFRESHSTATS' function. Special JCL is required when using this Store Type. You can use this Store Type in a 24-hour environment (ADABAS nucleus runs continuously). If, however, the nucleus is shut down from time to time, you should use the "EN" (end nucleus) Store Type before you refresh the nucleus statistical values.

Cyclic (CY)

This Store Type is used when the Store Program is run on a cyclic basis, for example once every 24 hours. If you use the Job Scheduler to run the Store Program cyclically, you must develop a JCL procedure which runs in Batch NATURAL and executes ASF direct commands.

Ad hoc (AH)

This Store Type is used when the Store Program is run on a one-off basis, in either online or batch mode.

Start TP monitor (ST)

This Store Type is used when the Store Program runs immediately after the TP monitor is started.

End TP monitor (ET)

This Store Type is used when the Store Program is run immediately before the TP monitor is terminated.

Additional Store Types

In addition to the built-in Store Types, you can define new Store Types. The names can consist of any two characters, provided that none of the existing Store Type names is used. Also, care should be taken not to use any characters which have a special significance for the TP monitor being used (for example, the "suspend" character should be avoided).

You could, for example, use a new Store Type when monitoring the effect of an ADARUN parameter change over a period of several hours, making one run of the Store Program every 30 minutes. After the resulting ASF records have been analyzed in an Evaluation Report, the records can be deleted. Records stored by the Store Program with one of the standard Store Types are in no way affected by this procedure.

Another example of the use of additional Store Types is to store records at daily, weekly or monthly intervals. Suitable names for the Store Types would be "DA", "WE" and "MO". Evaluation Reports could then be generated, based only on the data stored in these records.

Store Trend Records (Main Menu option T)

```
 15:42:58              **** A D A B A S Statistics Facility ****        30.04.1997
                          - Store trend data -                          MGTS0001


                     Code                Service
                   -------   ---------------------------------
                     S       Store trend data now
                     ?       Help
                     .       Terminate
                   -------   ---------------------------------
           Enter Code: _

 Trends based on : from: _____ , _____   to: _____ , _____
   Generate trend : from: _____ , _____   to: _____ , _____
    Steps of days : ___
 DBs and FIs from : _____

    Store profile : _____
       Store type :

     Direct Command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term                                              Menu
```

Figure 3-12: Menu for Store Trend Records

Purpose

This screen is used to generate a set of trend records. Trend records contain predictions of future database behaviour based on trends indicated in existing ASF Nucleus records. Records generated in this way can be evaluated using the General Evaluation service (code G in the Main Menu).

Note:
Each trend record contains data which is predicted for a particular date and time. No two trend records in a set contain data predicted for the same day.

Screen selection

This menu is reached by selecting the service code "T" in the main menu.

Service Codes

Code S: Store Trend Data Now

Select this option to generate a set of trend records.

Input field description

Enter code:

the code of the service you wish to activate.

Trends based on :

the start and end date and time of the period in which the original ASF Nucleus records were stored. The default time for the "from" field is 00:00. The default time for the "to" field is 23:59.

You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in this chapter.

Generate Trend:

the start and end date and time of the period for which the trend records are to be generated. The default time for the "from" field is 00:00. The default time for the "to" field is 23:59. The format for the date field is the same as for "Trends based on".

Steps of days:

the required interval, in days, between adjacent trend records in the set. The default value is 1.

DBs and FIs from

Enter the name of a Store Profile or an Evaluation Profile which specifies the databases and files for which you wish to generate trend records. This will typically be the Evaluation Profile which will be used to output a report based on the generated trend records.

Note:
Trend records are based on data which was stored using a particular Store Profile with a particular Store Type. The set of databases and files specified in that Store Profile might be considerably larger than the set of databases and files for which trend records are required.

Store profile:

> the name of the Store Profile which the Store Program used when creating the original ASF Nucleus data. Type "*" to get an active help list.

Store type:

> the Store Type which the Store Program used when creating the original ASF Nucleus data. Type "*" to get an active help list.

> *A summary of the Store Types follows the description of the input fields in the section* **Store Nucleus Records**.

Maintain Nucleus Records (Main Menu option M)

```
  15:48:29            *** A D A B A S  Statistics Facility ***         28.08.1997
                         - Maintain nucleus records -                  MDR00001

                     Code               Service
                    -------  ------------------------------------
                      S      Show nucleus records
                      D      Delete nucleus records
                      E      Export nucleus records to workfile
                      I      Import nucleus records from workfile
                      ?      Help
                      .      Terminate
                    -------  ------------------------------------
           Enter code : _

        Records from : _____ , _____   to  _____ , _____
       Store profile : _____
          Store type : __
              Origin : ___
         Database ID : _____

        Direct command ==> _____
    Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
          HELP        Term                                                  Menu
```

Figure 3-13: Menu for Maintain Nucleus Records

Purpose

This screen is used to display a summary of records which have been stored by the Store Program, or to delete records stored by the Store Program.

Screen selection

This menu is reached by selecting the service code "M" in the main menu.

Service Codes

Code S: Show Nucleus Records

This lists records which have been stored by the Store Program, according to the selection criteria which you enter in the input data fields of the menu. If you enter data for more than one input data field, then records will be listed only if they meet all of the selection criteria. The listed records are sorted according to Store Profile and Store Type, and show: database and file names, date, time and number of records.

Code D: Delete Nucleus Records

Selecting this option causes records which were stored by the Store Program to be deleted. You specify the records to be deleted by entering data in one or more of the input data fields. If you enter data for more than one input data field, then records will be selected for deletion only if they meet all of the selection criteria.

Before the records are deleted, a warning is displayed on the screen, stating how many records would be deleted. You can confirm the delete operation by typing the word "delete", then pressing ENTER. You will then be prompted to press ENTER again to confirm the deletion. You can cancel the delete operation by pressing PF3.

Code E: Export Nucleus Records

The Export option copies nucleus records to the external work file 1, as specified in the JCL for the job, according to the selection criteria which you enter in the input data fields of the menu. The original nucleus records are not deleted. If you enter data for more than one input data field, then records will be copied only if they meet all of the selection criteria.

This function runs only in batch mode with most TP monitors, since output data is written to a work file.

Records which have been exported can be subsequently imported (copied back into the set of ASF nucleus records) using the IMPORT option in the same menu.

WARNING:
If a Store Profile is used to create ASF nucleus or trend records, and these records are subsequently exported, the Store Profile must not be deleted, otherwise you cannot reload the records with the Import option. The reason is that the ASF records contain the ID (in numerical form) of the Store Profile which created them, so the Store Profile must still exist when records are imported, otherwise an invalid reference occurs. You can, however, use the Transfer option in the ASF Utilities Menu to reload the records.

Code I: Import Nucleus Records

The Import option copies nucleus records from the external work file 1 into the set of ASF nucleus records, according to the selection criteria which you enter in the input data fields of the menu. If you enter data for more than one input data field, then records will be copied only if they meet all of the selection criteria.

If an imported record already exists as a nucleus record, an error message is generated and the imported record is rejected. After this the import continues.

The external work file must be in the format which is created by the EXPORT option in the same menu. The external work file is specified in the JCL in the same way as for the EXPORT option (see above).

This function runs only in batch mode with most TP monitors, since input data is read from a work file.

Input field description

Enter code:

>the code of the service you wish to activate.

Records from ... to:

>the starting date/time and the end date/time of the time frame to be used for the selected service.

>You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in this chapter.

Store profile:

>the name of the Store Profile which was used by the Store Program while the data was being collected. Type "*" to get an active help list.

Store type:

>the Store Type used by the Store Program while the data was being collected. Type "*" to get an active help list.

Origin:

>The Evaluation can be based on nucleus data stored by the Store Program or trend data created by running the service "Store Trend Records" (code T in the Main Menu). The choices are: ALL (both nucleus and trend data), NU (nucleus data only) and TR (trend data only). Normally, NU should be used. Type "*" to get an active help list.

Database ID:

>the ID of the database for which the selected service applies.

Evaluation Profile Administration (Main Menu option E)
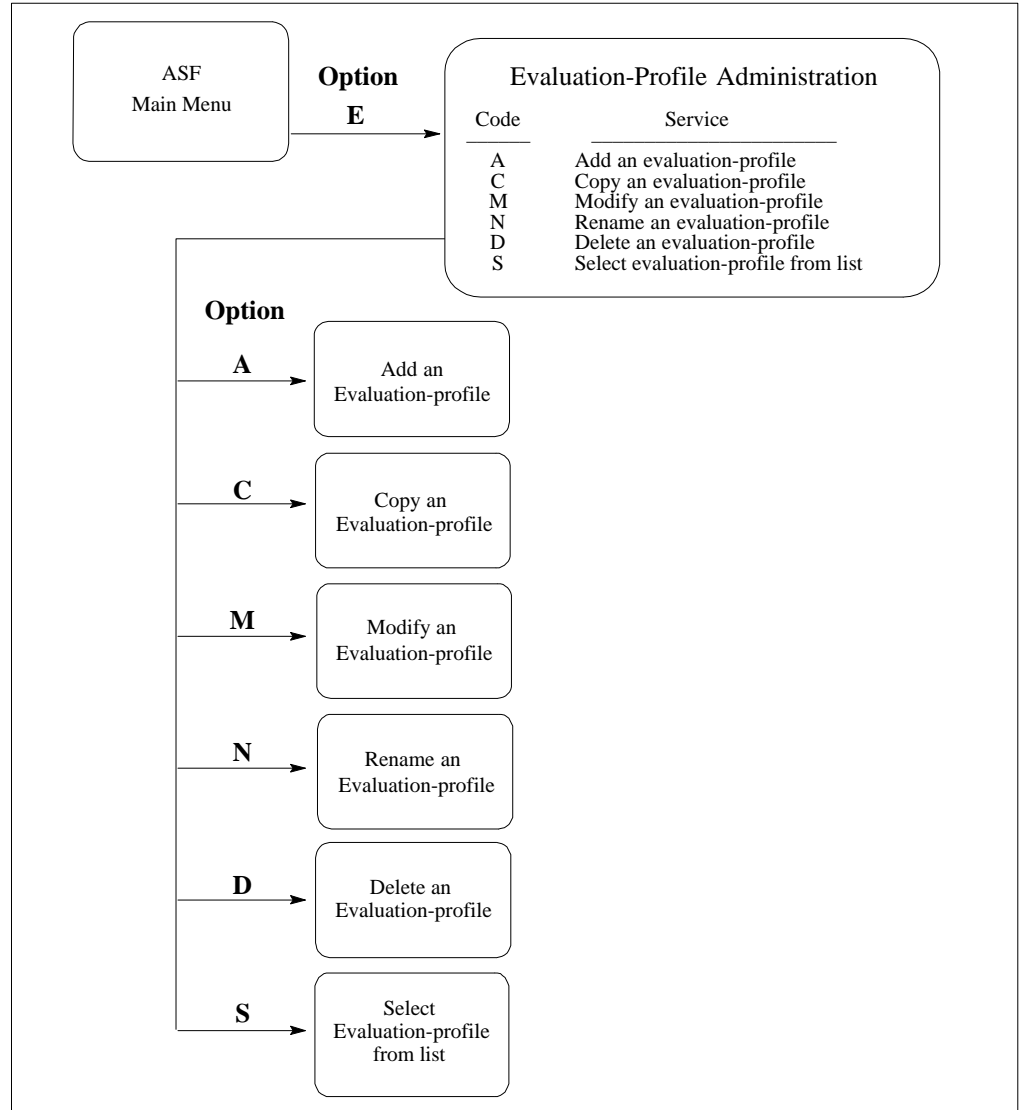
Figure 3-14: Evaluation Profile Administration Menu

Screen Layout for Evaluation Profile Administration

```
 14:19:55              **** A D A B A S Statistics Facility ****        1997-09-03
                         - Evaluation profile administration -          MPE00001


                   Code                  Service
                 --------    ------------------------------------
                    A        Add an evaluation profile
                    C        Copy an evaluation profile
                    M        Modify an evaluation profile
                    N        Rename an evaluation profile
                    D        Delete an evaluation profile
                    S        Select evaluation profile from list
                    ?        Help
                    .        Terminate
                 --------    ------------------------------------


         Enter Code: _
             Profile: _____
     Evaluation type: __

        Direct Command ==> _____
   Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP        Term                                                     Menu
```

Figure 3-15: Menu for Evaluation-Profile Administration

Purpose

This screen is used for the administration of Evaluation Profiles. By selecting the appropriate code, services to add new profiles, or to modify, rename, copy or delete existing profiles can be selected.

Screen selection

This menu is reached by selecting the service code "E" in the main menu.

Screens used when defining an Evaluation Profile

You use several screens when adding or modifying an Evaluation Profile, depending on the Evaluation Type. The screens are:

- Evaluation Profile administration
- Profile Element: Accumulation (types 1-8)
- Profile Element: Limits (types 9-10)
- Profile Element: Units
- Link databases to profile
- Link files to database (types 5-10)

The screens are accessed as shown in the following diagram.
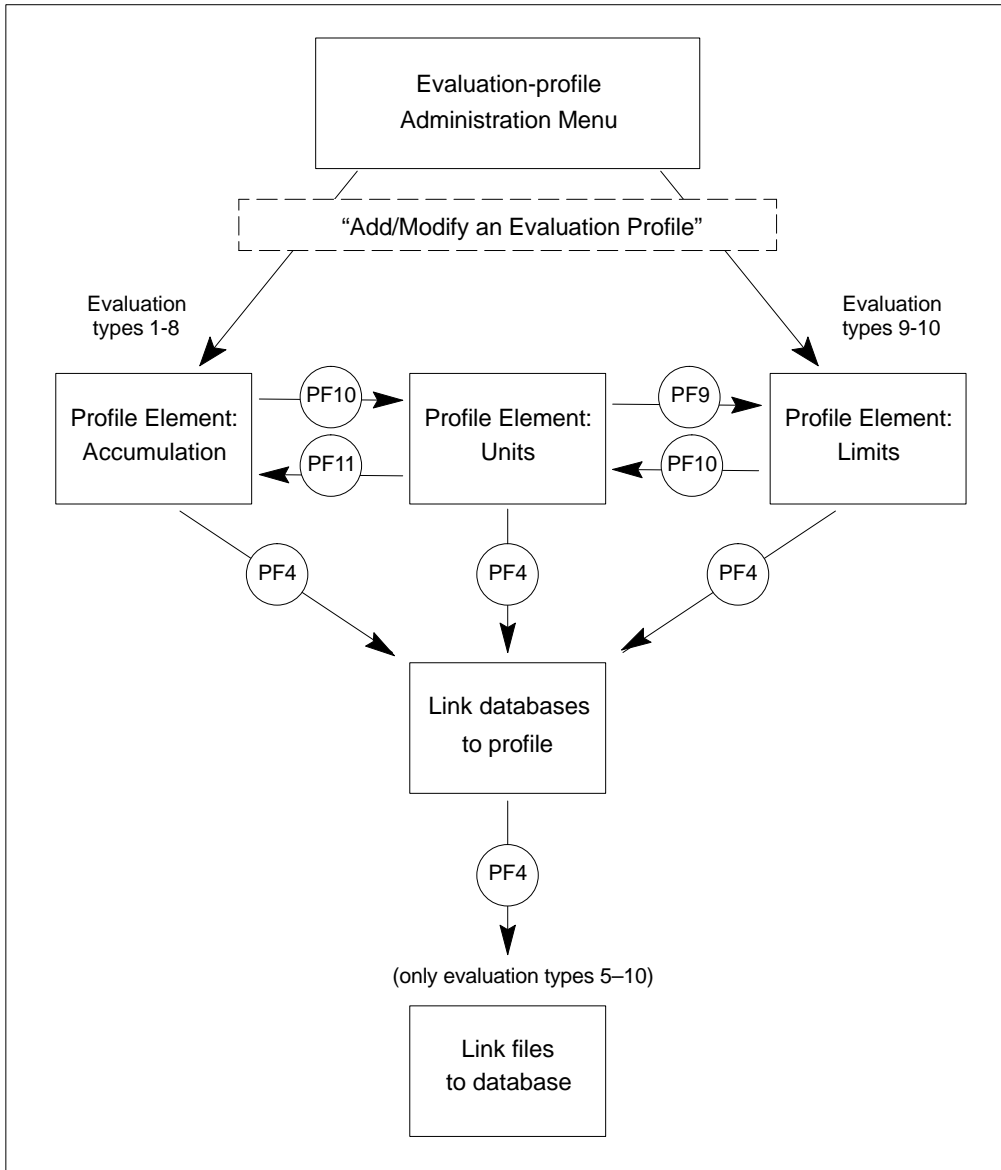
Figure 3-16: Adding/Modifying an Evaluation Profile

Service Codes

Code A: Add an evaluation profile

Select this service to add a new Evaluation Profile to the list of evaluation profiles. When you type the name of the new profile at the "Profile:" prompt, then press ⌨ENTER, a screen appears in which you can optionally supply an alias name for the new profile.

An alias name can be up to 3 characters long. If you type an alias name, it can be used subsequently instead of the profile name in any input field which requires a profile name. If you do not wish to provide an alias name for the profile, simply press ⌨ENTER.

If you specify an Evaluation Type 1-8, the service "Profile Element: Accumulation" will be started. If you specify an Evaluation Type 9 or 10, the service "Profile Element: Limits" will be started.

Code C: Copy an evaluation profile

Select this service to copy an existing Evaluation Profile to a new Evaluation Profile. Type the name of the existing profile in the "Profile" input field. When you press ⌨ENTER, a screen appears in which you specify the name and alias of the new profile, and also the Evaluation Type of the new profile.

Code M: Modify an evaluation profile

Select this service to modify an existing Evaluation Profile. If you specify an Evaluation Type 1-8, the service "Profile Element: Accumulation" will be started. If you specify an Evaluation Type 9 or 10, the service "Profile Element: Limits" will be started.

Code N: Rename an evaluation profile

Select this service to change the name of an Evaluation Profile or the alias or both. A screen appears in which you can overwrite the existing names with new names.

Code D: Delete an evaluation profile

Select this service to delete an existing Evaluation Profile. Type the name of the profile to be deleted in the "Profile" input field. A screen appears in which you must type the name (again!) and alias of the profile. After you press ⌨ENTER, you will be prompted to press ⌨ENTER again to confirm the deletion.

Code S: Select evaluation profile from list

Select this service to start the active help function for the "Profile" input field.

Input field description

Enter code:

Enter the code of the service you wish to activate.

Profile:

the name of the Evaluation Profile (or the alias name, if it exists) which ASF will use for the selected service. Type "*" to get an active help list.

Evaluation type:

The type (1-10) of report which ASF will generate. Type "*" to get an active help list.

Profile Element: Accumulation

```
 19:21:25              **** A D A B A S Statistics Facility ****        1997-01-17
                          - Profile element : Accumulation -            MPXK0001


   Prof.:

   Field Name      ! Seq ! Min ! Max ! Sum ! Avr ! Val ! Disp ! Det
   ----------------+-----+-----+-----+-----+-----+-----+------+---------< ALL >
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __
   _____ ! ___ !  __ !  __ !  __ !  __ !  __ !  __  !  __



      Direct command ==> _____
   Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP          Term DBses Add  Save  -     +           Units       Menu
```

Figure 3-17: Menu for Profile Element: Accumulation

Purpose

This screen is used to define the types of accumulation to be displayed when the Evaluation Profile is used in an Evaluation Report.

Screen selection

This screen can be selected in several ways:

- by choosing option "A" (add an evaluation-profile) or "M" (modify an evaluation-profile) in the "Evaluation-profile administration" screen, if the Evaluation Type is 1-8.
- by pressing PF11 in the "Profile Element: Units" screen

Adding data fields

At most 10 ASF data field names can be displayed on one screen. If you have defined an Evaluation Profile which specifies more than 10 fields, then pressing the PF8 key will scroll forwards through the list. Similarly, pressing the PF7 key will scroll backwards through the list.

To add a new field to the list, you can do any one of the following:

- If there is an unused position in the "Field Name" column, you can type the name of the data field directly at that position. If the current screen is full, you can scroll forward page by page to the end of the list by typing the PF8 key repeatedly, until an unused position is displayed.
- You can type the two characters ". I" over the first two characters of an existing field name. This causes a new empty line to be inserted between two existing lines. You can then use the new empty line for typing in the name of a new data field.
- You can select the active help by typing an asterisk ("*") in any field in the "Field Name" column, even if the field is not blank, or by pressing the PF5 key ("Add"). The active help is described in more detail below. The fields which you select in the active help will be inserted after the line with the "*"or, if you have pressed the PF5 key, at the end of the list.

Reordering data fields

If you wish to change the order of field names in the "Field Name" column, the simplest method is to overwrite the sequence number in the "Seq" column. If, for example, you originally defined a particular data field at the position with sequence number 4, and you want to move it to position number 1, then overwrite the "4" in the "Seq" column with "1", then press ENTER. The list of data fields will be reordered so that the data field which was previously at position 4 is now at position 1.

Active help at field selection

You can select the active help at the field selection by typing an asterisk ("*") in the first position of any field in the "Field Name" column or by pressing the PF5 key ("Add"). The screen "Active help: Select groups" is displayed.

```
 16:12:24            **** A D A B A S Statistics Facility ****      03.02.1998
                        - Profile element : Accumulation -          MPXK0001

    +-------------------< Select groups    page  1 >--------------< ALL >--+
    !                                                                      !
    !  Mk Nr. Group Name         Sel Max ! Mk Nr. Group name      Sel Max !
    ! --------------------------------------+------------------------------ !
    !  __   1 ADARUN-Parameter     0  25 ! __  11 High water marks   0   8 ! >
    !  X_   2 Session Informatio   6  14 ! __  13 Tech. ASF fields   3  17 !
    !  __   3 Physical DB-Layout   0   9 ! __  14 User defined field 20  20 !
    !  __   4 IO-Data              0   9 !                                 !
    !  __   5 Cmd distr. source    0   7 !                                 !
    !  __   6 Cmd distr. thread    3 251 !                                 !
    !  __   7 Cmd distr. type      2  21 !                                 !
    !  __   8 User calls           0   6 !                                 !
    !  __   9 Run time info        0   7 !                                 !
    !  __  10 Call duration       21  21 !                                 !
    !                                                                      !
    +----------------------------------------------------------------------+

     Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       HELP  More  Term        All   Selct                           Menu
```

Figure 3-18: Active help: Select groups

This screen shows how many data fields for each group are available for the given Evaluation Type (column "Max") and how many of them are currently selected (column "Sel"). You can mark a group with the following line commands:

A   Select all fields of the group

D   Delete all selections of the group

X   Display the data fields of the group for further selection.

Pressing the PF5 key ("All") is like marking all groups with "X". If you have marked any group with "X" or you have pressed the PF5 key, the "Active help: Select fields" screen is displayed.

```
  16:12:24              **** A D A B A S Statistics Facility ****        03.02.1998
                          - Profile element : Accumulation -            MPXK0001

   +---< Select fields of group 2: 'Session Information' page  1 >--< ALL >--+
   !                                                                         !
   ! Mk Nr. Field name          Status ! Mk Nr.Field name        Status     !
   ! -------------------------------+--------------------------------        !
   ! __   1 DBID                  X    ! __  13 VERSION             X     ! >
   ! __   2 DB-NAME               X    ! __  14 DATE NUC-START            !
   ! __   4 DATE LOADED                ! __  15 TIME NUC-START            !
   ! __   5 TIME LOADED                ! __  16 NUC-RUN-TIME     X        !
   ! __   6 MAXNR OF FILES        X    !                                  !
   ! __   7 NR FILES LOADED       X    !                                  !
   ! __   8 CURR. LOG TAPE             !                                  !
   ! __   9 DURATION                   !                                  !
   ! __  10 WAIT-TIME                  !                                  !
   ! __  11 CPU-TIME                   !                                  !
   !                                                                      !
   +----------------------------------------------------------------------+

      Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term              Selct -     +          Prev  Next  Menu
```

Figure 3-19: Active help: Select fields

In this screen, the relevant data fields for the given Evaluation Type of the selected group are displayed. The "Status" column indicates whether the field is already selected. You can select the fields by marking them with "X" or reverse the selection with "D". You can scroll through the list by using the PF7 and PF8 keys as usual. With the PF10 and PF11 keys you can go to the previous or next group when you have marked more than one group in the group menu.

When you have finished marking your selections, you must press PF6 to store them. Then the next selected group is displayed or the group selection screen or finally the active help screen is deselected. If you press PF3 while the active help screen is displayed, then the active help screen is deselected and all of the marked data fields are ignored.

Selecting statistical functions

You can enter an "x" in one or more of the columns Min, Max, Sum, Avr, Val, Disp and Det for each of the specified field names. Each such mark means that the appropriate statistical function will be activated for that field when the Evaluation Profile is used to create an Evaluation Report. The statistical functions are:

Statistical Function	Meaning
Min	The minimum value recorded value for the field in question is required.
Max	The maximum value recorded value for the field in question is required.
Sum	The total of all recorded data for the field is required
Avr	The average of the recorded data for the field is required
Val	The most recent recorded value of the field
Disp	This is the *coefficient of dispersion*, also known as the *coefficient of variation*. It is calculated by dividing the *standard deviation* by the *mean*, and normally results in a value between 0 and 100. The coefficient of dispersion is a measure of the deviation of the set of data from the average value. A value close to 0 indicates that the data points lie near to the average value.
Det	This is the *coefficient of determination*, which is the *square* of the *coefficient of correlation*. The coefficient of determination is a measure of the linearity of the data sample. This value is expressed as a percentage, whereby a value close to 100 indicates a very linear relation, and a value less than 50 indicates a non-linear relation. (This value is indicated by the term "Accuracy" in the output of a Critical Trend Report).

PF keys:

The usual meanings apply for the PF-keys `PF1` (help), `PF3` (terminate screen, return to calling screen), `PF12` (exit to main menu).

The PF-keys which cause other screens to be selected are:

PF-key	Screen selected
`PF4`	Link Databases to profile
`PF5`	Active help: Select groups/fields
`PF10`	Profile element: Units

Profile Element: Limits

```
 17:30:59           **** A D A B A S Statistics Facility ****        30.04.1997
                     - Profile element : Limits -                    MPXL0001


 Prof.:

 Field Name       ! Seq ! Rel.!  Limit     Unit! Join! Rel.!  Limit
 ----------------+-----+-----+----------+----+-----+-----+----------< ALL >
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____
 _____ ! ___ !  __ ! _____ ! __ !     !  __ ! _____


     Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       HELP  More  Term  DBses Add   Save   -     +          Units        Menu
```
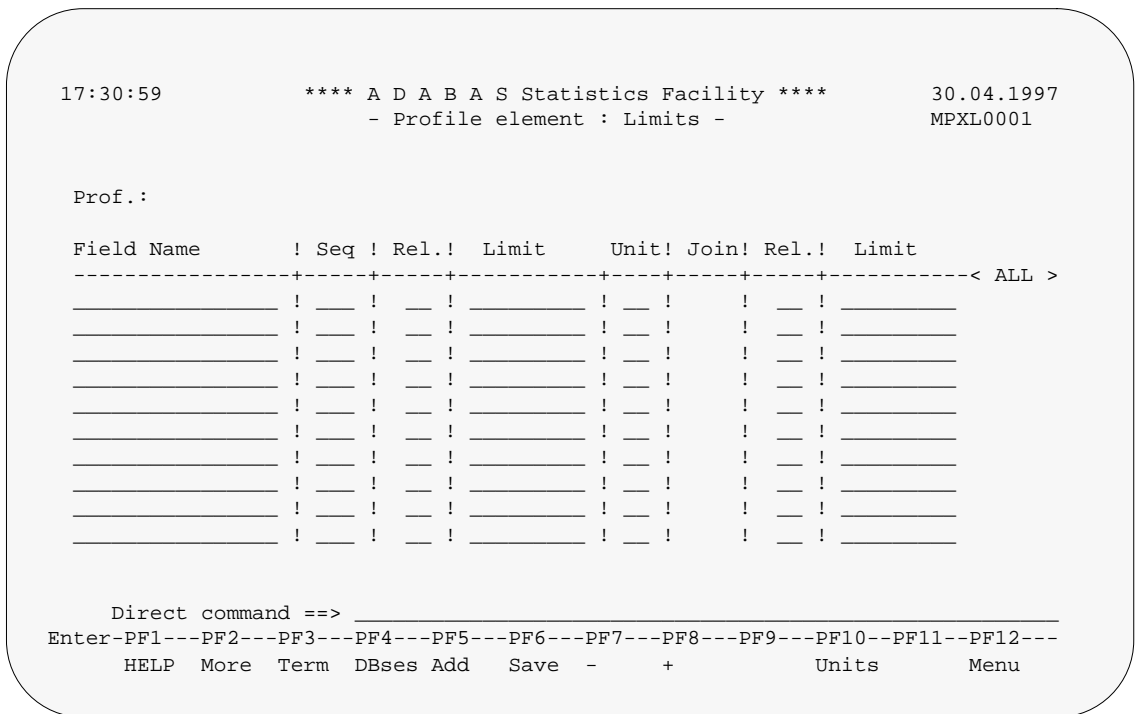
Figure 3-20: Menu for Profile Element: Limits

Purpose

In this screen, the user specifies "critical" limits for the ASF fields. These critical limits are the basis of the evaluations for Critical Reports and Critical Trend Reports.

Screen selection

This screen can be selected in several ways:

- by choosing option "A" (Add an evaluation-profile) or "M" (Modify an evaluation-profile) in the "Evaluation-profile administration" menu if the Evaluation Type is 9 or 10.
- by pressing [PF9] in the "Profile Element: Units" screen if the Evaluation Type is 9 or 10.

Summary of usage

For each data field, you can define either one or two critical values. The data you specify for the critical values determines the conditions under which the data field will be included in a Critical Report or Critical Trend Report. Each critical value is defined by (a) a numerical value, which you type in the "Limits" column (b) a unit of measurement, which you type in the "Unit" column and (c) a mathematical relation, which you type in the column "Rel", which ASF uses when comparing the data field's current value to the limit value. See the following sections "Units of measurement" and "Mathematical relations" for further details.

If you define two critical limits for a given data field, then you must define the manner in which the critical limits are to be combined. See the following section "Combining critical values" for details.

Limit values

For each data field, you can define either one or two critical values. The Limit field is numeric.

Units of measurement

The allowable units of measurement are:

Symbol	Meaning
BL	Blocks
CY	Cylinders
MB	Megabytes
BY	Bytes
SE	Seconds
PM	per minute
PC	percent

Note:
For dimensionless data fields such as READ ASSO, the unit field is left blank. For time duration fields, only "seconds" can be used as unit, and not "hours" or "days".

Mathematical relations

The allowable relations are shown in the following table. Relations are expressed by two-letter abbreviations as shown in the following table:

Abbreviation	Meaning
EQ	equals
NE	is not equal to
GE	is greater than or equal to
LE	is less than or equal to
GT	is greater than
LT	is less than

Combining critical values

You can define two critical limits for a data field. If you define two critical limits, the data field is critical if at least one of the conditions is true.

Example:

The following example shows critical values defined for the data field "ASSO USED" in the Evaluation Profile "TEST-EVAL". The data shown here means: the value of the data field will be critical when it is greater than or equal to 90 %, or when it is less than or equal to 5 %. The word "OR" is displayed automatically in the Join column when you define the second critical value for a data field.

```
 17:30:59              **** A D A B A S Statistics Facility ****        30.04.1997
                        - Profile element : Limits -                    MPXL0001


 Prof.: TEST-EVAL         9  Critical report : List of fields, databases and f

 Field Name        ! Seq ! Rel.!  Limit      Unit! Join! Rel.!  Limit
 ----------------+-----+-----+-----------+----+-----+-----+-----------< ALL >
 ASSO USED       !  1 ! GE !        90 ! PC !  OR ! LE !        5
```

Figure 3-21: Specifying critical values

Reordering the data fields

The "Seq" column can be used to change the order of the fields listed. See the description of the screen "Profile Element: Accumulation" for details.

Profile Elements: Units

```
 19:24:40              **** A D A B A S Statistics Facility ****       17.01.1997
                         - Profile element : Units -                   MPXU0001

  Prof.:

                       !     !         !    ! Da ! Hr ! Se !    !     !
  Field Name           ! Seq ! Default ! Bl ! Cy ! MB ! BY ! % ! Nom ! 1/min
  ----------------+-----+---------+----+----+----+----+----+-----+-----< ALL >
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __
  _____ ! ___ !         ! __ ! __ ! __ ! __ ! __ ! __ ! __


       Direct command ==> _____
  Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP        Term DBses Add   Save  -     +                Cumul Menu
```

Figure 3-22: Menu for Profile Element: Units

Purpose

In this screen, the units of the data fields to be used in the output report are specified.

Screen selection

This screen can be selected in several ways:
- by pressing PF10 in the "Profile Element: Accumulation" screen
- by pressing PF10 in the "Profile Element: Limits" screen

Selecting units

For each data field, you can choose one or more units of measurement to be output in any Evaluation Report which uses this Evaluation Profile. ASF indicates the default unit of measurement for each field in the column "Default".

If any of the columns Bl (blocks), Cy (cylinders), MB (megabytes), BY (bytes), % (percent), Nom (actual value), 1/min (occurrences per minute) are marked with an "x", then the corresponding ASF field will appear in the output report in the appropriate format.

If you press PF6 before selecting at least one unit of measurement for a given field, then ASF automatically places a mark in the column representing the default unit of measurement for that field.

When you press PF6 , all of the marked data is saved in the Evaluation Profile. Furthermore, if you have specified "N" in the "Stay after SAVE" field in the User Profile (see the screen "Define User Profile"), then the screen will be automatically deselected.

Some data fields represent the number of times a particular event occurs. An example is the data field "READ ASSO", whose value is incremented by 1 every time a READ operation occurs on ASSO. If the column "Nom" is marked for such a field, the output report will show the value of this field. If the column "1/min" is marked, the output report will express this value as an average number of occurrences per minute since the ADABAS nucleus was started.

Some data fields represent a time duration as for example the field "CPU-TIME". These fields have in the "Default" column the entry "SE" (seconds). If the column "Se" (seconds) or no column is marked for such a field, the output report will show the total number of seconds. If the column "Hr" (hours) is marked, the value is displayed as "hours:minutes:seconds". If the column "Da" (days) is marked, the value is displayed as "days:hours:minutes".

Reordering the data fields

The "Seq" column can be used to change the order of the fields listed. See the description of the screen "Profile Element: Accumulation" for details.

Link Databases to Profile

```
 21:23:37              **** A D A B A S Statistics Facility ****        06.04.1997
                          - Profile administration -                    MPXXD001

      +------------------< link databases to profile >-------------< ALL >-+
      !                  Profile :  ALS-DB-5                                !
      !                                                                     !
      ! DB-ID   DB-Name          dyn      DB-ID   DB-Name          dyn      !
      ! -----   ----------------  ---     ------  ----------------  ---     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      ! _____                      __     _____                      __     !
      +---------------------------------------------------------------------+

      Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       HELP  More  Term  Files        Save  -     +                      Menu
```

Figure 3-23: Menu for Link Databases to Profile

Note:
The columns marked "dyn" appear when defining a Store Profile, or when defining an Evaluation Profile with an Evaluation Type of 5-10.

Purpose

This screen is used to define databases in Evaluation Profiles and Store Profiles.

Screen selection

This screen can be selected as follows:
- when the "Add a store profile" or "Modify a store profile" services in the "Store-profile administration" screen are selected.
- by pressing the PF4 key in any of the screens "Profile Element: Accumulation", "Profile Element: Limits" or "Profile Element: Units".

Input Field description

The screen contains 20 input fields (two columns of 10 input fields each) which you can use for typing in database IDs. The database IDs must be numeric. When a new profile is being defined, these fields are originally empty. When you modify an existing profile, the values which you previously entered for these fields are redisplayed. New database IDs can be typed in any blank input field. If there is no blank input field available, you can press `PF8` to scroll forward to the next 20 input fields. You can also type the two characters ". I" in any input field, even if that field is not blank, then press `ENTER`. This causes a blank input field to be created, which you can then use to type in the new database ID. You can remove a database ID from the list by overwriting it with blanks and then pressing `ENTER`.

You can specify at most 256 different database IDs in one profile. Each database ID must be in the range from 1 to 65535.

When defining a Store Profile, or when defining an Evaluation Profile with an Evaluation Type of 5-10, the extra columns marked "dyn" are displayed. If you mark the dyn-field corresponding to a DBID, then the list of files corresponding to the database (accessed by pressing `PF4`) will not be evaluated when the Store Program or an Evaluation is running. Instead, ASF will dynamically include all *currently active* files for the database in its processing, if the profile is a Store Profile, or, in the case of an Evaluation Profile, all *possible* files for the database. In this case, the number of files is not restricted to 256, as it is when you specify the file IDs explicitly. If you later remove the dyn-mark from the DBID, then the Store Program and the Evaluations revert to using the explicit list of files which you have specified for the database.

The "dyn" column is not displayed for Evaluation Profiles with an Evaluation type of 1-4 since these profiles contain no file-related ASF data fields.

When you have finished typing the database IDs, you must press `PF6` before pressing `PF3`, otherwise ASF ignores your changes and returns to the calling screen.

When you press `PF6`, all of the marked data is saved in the Evaluation Profile. Furthermore, if you have specified "N" in the "Stay after SAVE" field in the User Profile (see the screen "Define User Profile"), then the screen will be automatically deselected.

Link Files to Profile

```
 19:33:18              **** A D A B A S Statistics Facility ****        17.01.1997
                        - Profile administration -                      MPXXDF01

    +------------------< link databases to profile >------------< ALL >-+
    ! +-------------------< link files to database >--------------< ALL >-+
    ! !   DB :                               Profile :                    !
    ! !                                                                   !
    ! ! File    Name                       File    Name                   !
    ! ! ----------------------------       ----------------------------   !
    ! !  _____                              _____                         !
    ! !  _____                              _____                         !
    ! !  _____                              _____                         !
    ! !  _____                              _____                         !
    ! !  _____                              _____                         !
    ! !  _____                              _____                         !
    ! !  _____                              _____                         !
    ! !  _____                              _____                         !
    +- !  _____                              _____                         !
       +-------------------------------------------------------------------+
     Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      HELP         Term        Add   Save  -     +                       Menu
```

Figure 3-24: Menu for Link Files to Profile

Purpose

This screen is used to specify which files in a particular database should be included in Store Profile or an Evaluation Profile.

Note:
For Evaluation Profiles, this screen can only be selected if the Evaluation Type is 5-10.

Screen selection

This screen is selected when you press [PF4] in the screen "Link databases to profile".

Input Field description

The screen contains 20 input fields (two columns of 10 input fields each) which you can use for typing in file IDs. The input fields are directly under the heading "File". The file IDs must be numeric. When a new profile is being defined, these fields are originally empty. When you modify an existing profile, the values which you previously entered for these fields are redisplayed. New file IDs can be typed in any blank input field. If there is no blank input field available, you can press `PF8` to scroll forward to the next 20 input fields. You can also type the two characters ". I" in any input field, even if that field is not blank, then press `ENTER`. This causes a blank input field to be created, which you can then use to type in the new file ID. You can remove a file ID from the list by overtyping it with blanks and then pressing `ENTER`. You can specify at most 256 different file IDs for each database ID. Each file ID must be in the range from 1 to 5000.

When you have finished typing the file IDs, you must press `PF6` before pressing `PF3`, otherwise ASF ignores your changes and returns to the calling screen.

When you press `PF6`, all of the marked data is saved in the Evaluation Profile. Furthermore, if you have specified "N" in the "Stay after SAVE" field in the User Profile (see the screen "Define User Profile"), then the screen will be automatically deselected.

Active help at file selection

You can select the active help at the file selection by pressing the `PF5` key or typing "*" in the first position of any file ID. The file IDs that you select in the active help will be inserted after the line with the "*" or, if you have pressed the `PF5` key, at the end of the list.

```
  16:54:00              **** A D A B A S Statistics Facility ****          03.02.1998
   LHU                        – Profile administration –                     MPXXDF01

       +------------------< link databases to profile >-------------< ALL >-+
      ! +--< Select Files of DB 228    ==> Row     1 of     9 >-< ALL >-+ LL >-+
      ! !                                                               !      !
      ! ! Mk  File  Name                    Mk  File  Name              !      !
      ! ! ----------------------            -------------------------   !      !
      ! !  __      1 ADA-CKPT-FILE                                      !      !
      ! !  __      5 NAT-SYSTEM                                         !      !
      ! !  X_      6 NAT-USER                                          !      !
      ! !  __      8 NAT-SECU                                          !      !
      ! !  __     10 ASF-DATA                                          !      !
      ! !  __     11 ASF-PROFILE                                       !      !
      ! !  X_     31 EMPLOYEES                                         !      !
      ! !  X_     32 VEHICLES                                          !      !
      ! !  X_     33 MISCELLANEOUS                                     !      !
      ! !                                                               !      !
      +- ! Start file:     1                                           !      !
         +------------------------------------------------------------+ -----+
       Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term              Selct –     +                     Menu
```

Figure 3-25: Active help: Select files

This screen shows you the list of currently active files of the selected database. Files already selected are marked with "X". You can select new file IDs by marking them with "X". You can deselect a file ID by overtyping the "X" with blanks.

The "Start file" field displays the first file ID of the current page. If you overwrite this field, the list will start from the specified file ID. If the corresponding file is not active, the list will start with the next smaller file ID or with the first page. If the value is higher than the highest possible file ID, the last page will be displayed.

When you have finished marking you selections, you must press PF6 to store them. If you press PF3 while the active help screen is displayed, then the active help screen is deselected and all your changes are ignored.

Note:
In the active help screen of the file selection, you can only select file IDs of currently active files. In the screen "Link Files to Database" you can even specify file IDs of inactive files.

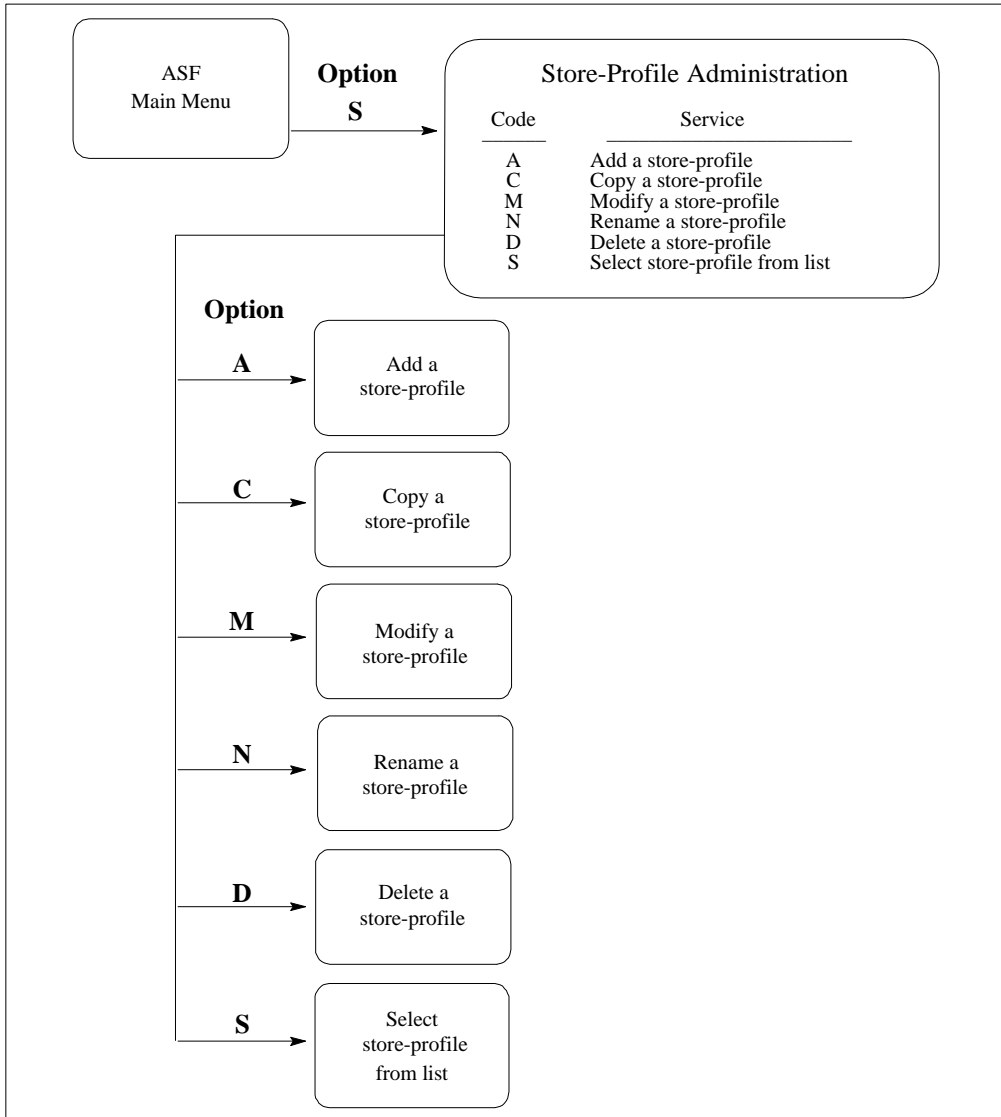## Store Profile Administration (Main Menu option S)

Figure 3-26: Store Profile Administration Menu

Screen Layout for Store Profile Administration

```
  14:19:55           **** A D A B A S Statistics Facility ****        15.08.1997
                        - Store profile administration -               MPS00001


                  Code                    Service
                --------  --------------------------------
                  A       Add a store profile
                  C       Copy a store profile
                  M       Modify a store profile
                  N       Rename a store profile
                  D       Delete a store profile
                  S       Select store profile from list
                  ?       Help
                  .       Terminate
                --------  --------------------------------


        Enter Code:  _


            Profile:  _____


     Direct Command ==> _____
  Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP        Term                                                    Menu
```

Figure 3-27: Menu for Store-Profile Administration

Purpose

This screen is used for the administration of Store Profiles. By selecting the appropriate code, services to add new profiles, or to modify, rename, copy or delete existing profiles can be selected.

Screen selection

This menu is reached by selecting the service code "S" in the main menu.

Screens used when defining an Evaluation Profile

You use several screens when adding or modifying a Store Profile. The screens are:

- Store-Profile administration
- Link databases to profile
- Link files to database
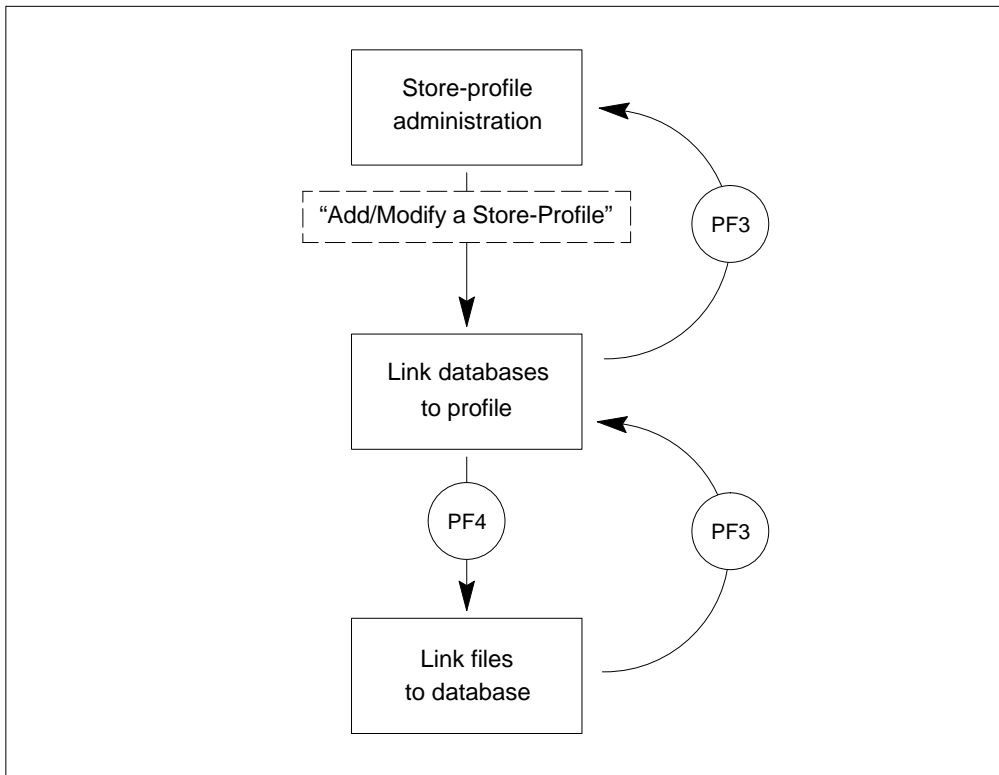
The screens are accessed as follows:

Figure 3-28: Adding/modifying a Store Profile

Service Codes

Code A: Add a store profile

Select this service to add a new Store Profile to the list of Store Profiles. When you type the name of the new profile at the "Profile:" prompt, then press ⌐ENTER⌐, a screen appears in which you can optionally supply an alias name for the new profile.

An alias name can be up to 3 characters long. If you type an alias name, it can be used subsequently instead of the profile name in any input field which requires a profile name. If you do not wish to provide an alias name for the profile, simply press ⌐ENTER⌐.

Subsequently, the screen "Link databases to profile" appears.

Code C: Copy a store profile

Select this service to copy an existing Store Profile to a new Store Profile. Type the name of the existing Store Profile in the "Profile" input field. When you press ⌐ENTER⌐, a screen appears in which you specify the name and alias of the new profile. You do not have to specify an Evaluation Type, since this only applies to Evaluation Profiles.

Code M: Modify a store profile

Select this service to modify an existing Store Profile. Type the name or the alias of the Store Profile you wish to modify in the "Profile" input field. Subsequently the screen "Link databases to profile" appears. You can then add new databases and files to the Store Profile, or remove databases and files from the profile.

Code N: Rename a store profile

Select this service to change the name of a Store Profile or the alias or both. A screen appears in which you can overwrite the existing names with new names.

Code D: Delete a store profile

> Select this service to delete an existing Store Profile.Type the name of the Store Profile to be deleted in the "Profile" input field. A screen appears in which you must type the name (again!) and alias of the Store Profile. After you press ENTER , you will be prompted to press ENTER again to confirm the deletion.

> *WARNING:*
> *If a Store Profile is used to create ASF nucleus or trend records, and these records are subsequently exported, the Store Profile must not be deleted, otherwise you cannot reload the records with the Import option. The reason is that the ASF records contain the ID (in numerical form) of the Store Profile which created them, so the Store Profile must still exist when records are imported, otherwise an invalid reference occurs. You can, however, use the Transfer option in the ASF Utilities Menu to reload the records.*

Code S: Select store profile from list

> Select this service to start the active help function for the "Profile" input field.

Input field description

Enter code:

> Enter the code of the service you wish to activate.

Profile:

> the name of the Store Profile which ASF will use for the selected service. Type "*" to get an active help list.

User Maintenance (Main Menu option U)

Note:
This option is only available when NATURAL SECURITY is being used. Furthermore, you must be registered in NATURAL SECURITY as Administrator to select this option. To add a user to the list, you must modify the NATURAL SECURITY group ASFGROUP. See the section "Post-Installation Procedures" in the ADABAS STATISTICS FACILITY *Installation Notes for details.*

```
  20:09:10           **** A D A B A S Statistics Facility ****         06.04.1997
                        - Security maintenance -                       MPA00001


                                                     !mod. !mod. !
                                                     !store!eval.!
  No  ! User-ID  ! Name                              !prof.!prof.! evaluates
  ----+----------+---------------------------------+-----+-----+------ <  ALL >
  1   !          !                                  !  _  !  _  !   _
  2   !          !                                  !  _  !  _  !   _
  3   !          !                                  !  _  !  _  !   _
  4   !          !                                  !  _  !  _  !   _
  5   !          !                                  !  _  !  _  !   _
  6   !          !                                  !  _  !  _  !   _
  7   !          !                                  !  _  !  _  !   _
  8   !          !                                  !  _  !  _  !   _
  9   !          !                                  !  _  !  _  !   _
  10  !          !                                  !  _  !  _  !   _


       Direct command ==> _____
  Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       HELP        Term            Save  -     +                        Menu
```

Figure 3-29: Menu for User Maintenance

Purpose

This screen is used for the administration of user access to ASF. You use the User Maintenance service to authorize users to perform one or more of the following actions: run Evaluations, modify Store Profiles or modify Evaluation Profiles.

Screen selection

This menu is reached by selecting the service code "U" in the main menu (if NATURAL SECURITY has been installed).

Description

You can authorize users to modify Store Profiles, modify Evaluation Profiles or to run Evaluations by placing a mark in the appropriate column(s). The names of the users who are registered in the NATURAL SECURITY group ASFGROUP are displayed automatically. When you have finished, press PF6 to save the changes.

Define User Profile

```
   11:04:50            *** A D A B A S  Statistics Facility ***          28.04.1997
                              - Main Menu -                             MOS00001

          +----------< Define user-profile for user STANDARD >------------+
          !                                                               !
          ! Date format       : _         (1=YYYY-MM-DD,2=DD.MM.YYYY)  !
          ! Decimal character : _          Separating sign   : _         !
          ! Kilo if > 1000     : _ (Y/N)    Mega if > 1000 k  : _ (Y/N)  !
          ! Stay after save   : _ (Y/N)    Keep environment  : _ (Y/N)  !
          !                                                               !
          ! Printer name      : _____   Char. per line    : ___      !
          ! Left margin       : ___        Print one document: _ (Y/N)  !
          ! Batch output      : _          (1=seqfile,2=sysout)         !
          !                                                               !
          ! Limit CPU-units   : _____    Limit ADA-calls   : _____   !
          ! Get Num.rec.loaded : _ (Y/N)    Accuracy level    : _         !
          ! Not used          : _ (Y/N)    Start with menu   : _ (Y/N)  !
          !                                                               !
      En +------------------------------------------------------------+

      Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term                      -      +                    Menu
```

Figure 3-30: Menu for Define User Profile (Screen 1)

```
 11:05:01            *** A D A B A S  Statistics Facility ***        28.04.1997
                            - Main Menu -                             MOS00001

          +----------< Define CONNECT-profile for user  STANDARD >------- +
          |                                                               |
          | Critical reports are to be sent as memos in the following     |
          | CONNECT cabinets (if output medium 'Printer' is marked)       |
          |                                                               |
          | Cabinets........: _____  _____  _____                |
          | Only if the critical report contains fields: _               |
          |                                                               |
          | Standard text in the memos:                                   |
          |                                                               |
          | _____  |
          | _____  |
          | _____  |
          | _____  |
          |                                                               |
      En +----------------------------------------------------------------+

      Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      HELP  More  Term                     -     +                       Menu
```

Figure 3-31: Menu for Define User Profile (Screen 2)

Purpose

The User Profile defines a set of defaults which affect the behaviour of ASF. Two screens are available for defining the User Profile. You can scroll from one screen to the other by using the scroll keys PF7 and PF8 . In the first screen (Figure 3-30) you specify general default parameters, and in the second screen (Figure 3-31) you specify information which ASF requires for sending Critical Reports as memos to CON-NECT cabinets (if you are using CON-NECT).

Screen selection

The first screen (Figure 3-30) is reached by typing the command "PROFILE" or "PROFILE STANDARD" or "PROFILE *username*" in the direct command line of any screen.

The PROFILE command selects the profile which contains your own defaults. The PROFILE STANDARD command selects the profile which contains the defaults for new users. The PROFILE *username* command selects the profile for the user *username*.

Input field description

Date Format:

Type 1 to get the format YYYY-MM-DD, or type 2 to get the format DD.MM.YYYY.

Decimal character:

You can choose a period "." or a comma "," as the decimal character to be used when floating point numbers are printed in the Evaluation Reports.

Separating sign:

You can specify a comma or a period to separate groups of three digits which are displayed to the left of the decimal character.

Kilo if > 1000

If this is set to "Y", then certain numerical values greater than 1000 will be displayed using the K notation. Thus 25000 will be replaced by 25 K. Values less than 1000 will be rounded off, so that 25800 becomes 26 K, whereas 25499 becomes 25 K.

Mega if > 1000 K

If this is set to "Y", then certain values greater than 1 000 000 will be displayed using the M notation. Thus 2 000 000 will be replaced by 2 M. Values less than 1 million will be rounded, so that 2 600 000 becomes 3 M, whereas 2 499 000 becomes 2 M.

Stay after save:

This allows you to control the behaviour of the SAVE function ($\boxed{\text{PF6}}$ key) in all subsequent screens. If you specify "N", then pressing $\boxed{\text{PF6}}$ in subsequent screens to perform the SAVE function performs not only the SAVE function but also automatically deselects the screen. If you specify "Y", then subsequent screens are not automatically deselected when you press $\boxed{\text{PF6}}$ to perform the SAVE function.

Keep environment:

This feature allows you to retain dialogue data from one run of the ASF Menu System to the next. Dialogue data are the values which you enter in the input fields of the ASF menus, for example Evaluation Profiles, Store Profiles, Time Intervals, Store Types. Normally when you terminate ASF, the values in these fields are lost. However, if you specify "Y" in the Keep Environment field of the User Profile, these values are retained and inserted automatically into the appropriate input fields at the start of the next run of ASF. Specify "N" to switch off this option.

Printer name:

The name of the printer to be used for all printer output.

Char per line

The number of characters per line to be used on the printer. The only valid values are 80 and 132. (This value is required by ASF to determine the number of data columns which can be displayed in a printed report).

Left margin:

The size of the left margin to be used in printer reports, expressed as a number of characters.

Print one document

If this is set to "Y" (the default value), then printer output is generated without information pages being printed between each two pages of the generated report.

Batch output:

If you specify "1", all printed output is directed to your specified or default output channel. If you specify "2", output is directed to the system spool queue.

Limit CPU-units

A value restricting the amount of CPU time to be allowed during an evaluation.

Limit ADA-calls

A value restricting the number of ADABAS calls to be allowed during an evaluation.

Get Num rec loaded

If "Y" is specified, the ASF data field "Number of records loaded" is activated and can be displayed in the Evaluations.

Accuracy level

Critical Trend Reports will not display any ASF fields whose computed accuracy lies below the given figure. The default value is 0.

(Not used)

(This field is reserved for future use)

Start with menu

Specify "Y" if you want the ASF Main Menu to be displayed when ASF Menu System is started, or "N" if you want the Workplan to be selected automatically instead.

Cabinets

When you run a Critical Report with the input field "printer" marked (see the section **Critical Report** in this chapter) ASF sends the output as a memo into the CON-NECT cabinets which you specify here in addition to printing the output on the specified output device.

You can specify up to 3 CON-NECT cabinets. If a cabinet does not exist, the memo is still sent to the other cabinets.

Note:
When the Critical Report is sent to a CON-NECT cabinet, it is created firstly as a temporary document in SYSASF and sent from there as a memo to the CON-NECT cabinet. The temporary document in SYSASF is subsequently deleted.

Only if the critical report contains fields

If you mark this field, the output of a Critical Report is sent to the named CON-NECT cabinets only if at least one critical field is reported in the Critical Report.

Standard text in the memos

When a Critical Report is sent as a memo to a CON-NECT cabinet, the text specified for this field is sent as an accompanying note with the memo.

ASF System File Maintenance

```
   17:08:19            *** A D A B A S  Statistics Facility ***        03.02.1998
   LHU                      – System File Maintenance –                MLFILE




   Current values ....:      ASF Data      228 / 10
                             ASF Profiles  228 / 11

   New values ........:      ASF Data      __228 / 10___
                             ASF Profiles __228 / 11___






    Enter the new DBID / FNR combinations.

   Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP       Term            Save                                  Menu
```

Figure 3-32: Menu for ASF System File Maintenance

Purpose

During the installation of ASF, you have defined, in the NATURAL parameter module, which file numbers are used for the ASF system files (see *ASF Installation Manual*, Chapter **Installation Notes**, Section **First Time Installation of ASF**). This screen shows you the database ID and file number of the currently used ASF DATA and ASF PROFILES files. If there is more than one pair of ASF system files in your environment, you can access the other ASF system files by overwriting the corresponding "New values".

Screen selection

This screen is reached by typing the command "LFILE" in the direct command line of any screen. You can also reach this screen by starting the NATURAL program "LFILE" in the SYSASF library.

Description

There are two NATURAL system files for ASF, namely the ASF DATA file and the ASF PROFILES file. The line "Current values" displays the currently used database ID and file numbers of the ASF system files. In the line "New values", you can specify another DBID/FNR combination for the ASF system files.

You save the modifications by pressing the PF6 key. You leave the screen with PF3 (back to where you came from) or with PF12 (display the ASF Main Menu). If you have modified the ASF system file values and you leave the screen without pressing PF6 before, ASF will ask you whether you want to save your modifications.

The new values for the ASF system files are only valid for your current NATURAL session. If you open a new NATURAL session, the values specified in the NATURAL parameter module will be taken. Other NATURAL users are not affected by your modifications.

Important Note:
The ASF System File Maintenance does not validate the values which you specify. ASF cannot work if you specify invalid system file numbers. It returns an error message (such as NAT3055 – format conversion not possible) as soon as you try to access the system files from any ASF screen. In this case, you should start the ASF System File Maintenance again and specify correct values.

Note:
The ASF 1.2 system files are not compatible with the ASF 6.2 system files. This means that you can neither access the ASF 1.2 system files from an ASF 6.2 environment nor vice versa.

ASF Utilities (Main Menu option A)

```
 12:26:54            *** A D A B A S  Statistics Facility ***       23.04.1997
                         - ASF Utilities Menu -                     MUM00001


               Code                   Service
             -------   -----------------------------------
               A       Condense records to average records
               D       Condense records to delta records
               S       Synchronize / regenerate store times
               T       Transfer from foreign ASF-System
               I       ASF Application Program Interface
              1/2      API Example 1/2
               ?       Help
               .       Terminate
             -------   -----------------------------------


      Enter code:  _



      Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      HELP  More  Term                                                Menu
```

Figure 3-33: Menu for ASF Utilities

Purpose

The menu lists the available ASF Utilities. You can select one of the listed utilities by typing the one-letter code for the utility in the "Enter code" field. When you have entered the input data, press ENTER to activate the utility which you selected.

Screen selection

This menu is reached by selecting the service code "A" in the Main Menu.

Description

The ASF Utilities are described in detail in the chapter **ASF Utilities**.

4

ASF UTILITIES

The ASF Utilities are a set of functions callable from the ASF Menu System for the management of an ASF system. The ASF Utilities also contain functions for demonstrating the use of the Application Programming Interface (API).

The following management functions are available:
- "Condensing" nucleus records to generate averages and/or differences of ASF data fields on a daily, weekly or monthly basis
- Transferring (loading) records from a foreign ASF system
- Synchronizing the store times of ASF records which have been transferred to the local ASF database from a remote ASF database

The following API test and display functions are available:
- Calling the API subprogram ASFGET01 to retrieve and display ASF records
- Viewing the output of sample programs which use ASFGET01.

Since the proper use of condensed records can be very beneficial in the management of your ASF system, the following section has been included as a guide to usage.

Condensing Nucleus Records

General

ASF offers the utility functions "Condense Records to Average Records" and "Condense Records to Delta Records", both of which generate new "condensed" records which contains averages and/or differences of the ASF data fields in a set of nucleus records. The following paragraphs contain general information concerning the purpose of such condensed records.

In an ASF system, nucleus records are typically stored daily at the end of the online operation. Over the period of 1 month, this results in about 20 daily records (one record per weekday). If you wish to make an evaluation over a longer period of time, for example 6 months, this would require the data from about 120 nucleus records. In many cases, however, it would be sufficient to use a representative set of data for each month, based on the average values of each of the individual ASF data fields.

For this purpose, the utility function "Condense records to average records" is provided. This function generates new records, each containing average values from a set of nucleus records which were created over a given period of time, for example one week or one month.

In an environment in which the nucleus is shut down and restarted every day, average values can be calculated for cumulative ASF data fields (such as READ ASSO) as well as for non-cumulative ASF data fields (such as ASSO USED). Records containing such average values are called *average records*. If, however, the nucleus is run in a 24-hour environment (no daily shutdown), it is meaningless to calculate average values for the cumulative ASF data fields, since these values are not reset to 0 every day in this environment. Therefore, in order to generate a representative set of data for a given period of time (for example, one week or one month) in a 24-hour environment, differences (instead of averages) are calculated for the cumulative ASF data fields and averages are calculated for the non-cumulative ASF data fields. Records containing this combination of average and difference values are called *modified average records*.

In an environment with a daily shutdown, you can generate either average records or modified average records. In a 24-hour environment, only modified average records can be used, since it is not meaningful to calculate average values for cumulative ASF data fields in this environment.

For some special calculations it can be useful to summarize the differences which have occurred in the ASF data fields over a given period. For this purpose, the utility function "Condense records to delta records" is provided. With this function, differences are calculated for both cumulative and non-cumulative ASF data fields in 24-hour environments as well as in environments with a daily nucleus shutdown. The records thus created are called *difference records*.

Note, however, that unlike the average records discussed above, such difference records are not representative of the values of the ASF data fields during the time period; they express only how values have changed.

The following examples show the circumstances in which condensed records are generated.

Example 1: Daily Nucleus Shutdown
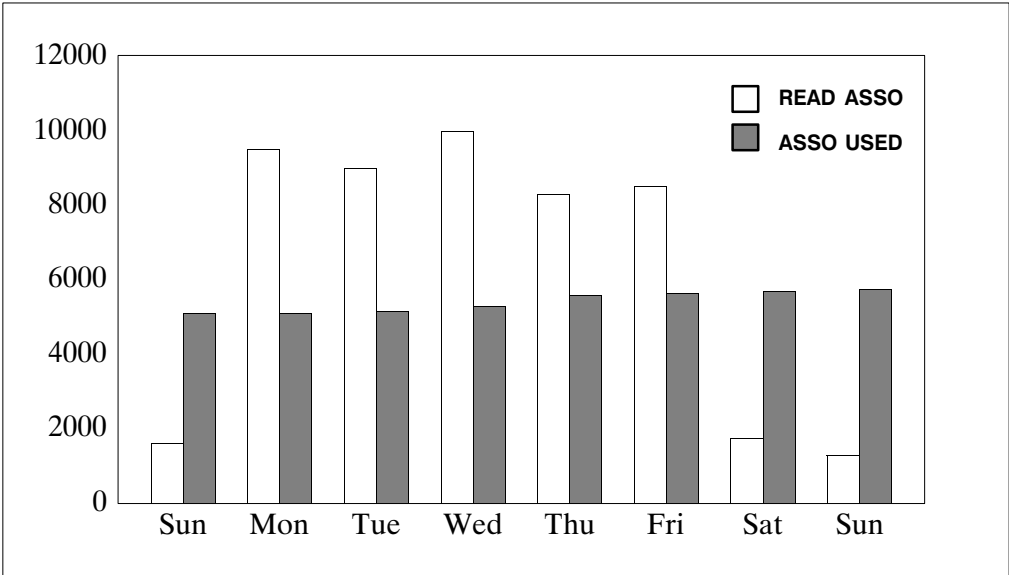
Figure 4-1: Example with daily nucleus shutdown

Figure 4-1 shows in graphical form the values which were recorded on a daily basis over the period of 1 week for the cumulative ASF data field READ ASSO and the non-cumulative ASF data field ASSO USED. The values were recorded in an environment where the nucleus was shut down and restarted every day.

For the field READ ASSO, and for all other cumulative ASF data fields, there are two ways to "condense" the values:

- the average daily value can be calculated from Monday to Sunday, or
- the difference from Sunday to Sunday can be calculated, thereby giving the total number of ASSO reads for the week.

For the field ASSO USED, and for all other non-cumulative ASF data fields, there are also two ways to condense the values:

- the average daily value can be calculated from Monday to Sunday, or
- the difference from Sunday to Sunday can be calculated, thereby giving the increase in ASSO space allocation during the week.

If you select the utility function "Condense Records to Average Records", average values as described in this example are calculated for all cumulative and non-cumulative ASF data fields. The records which are generated are *average records*.

Similarly, if you select the utility function "Condense Records to Delta Records", differences as described in this example are calculated for all cumulative and non-cumulative ASF data fields. The records which are generated are *difference records*.

Example 2: 24-Hour Environment
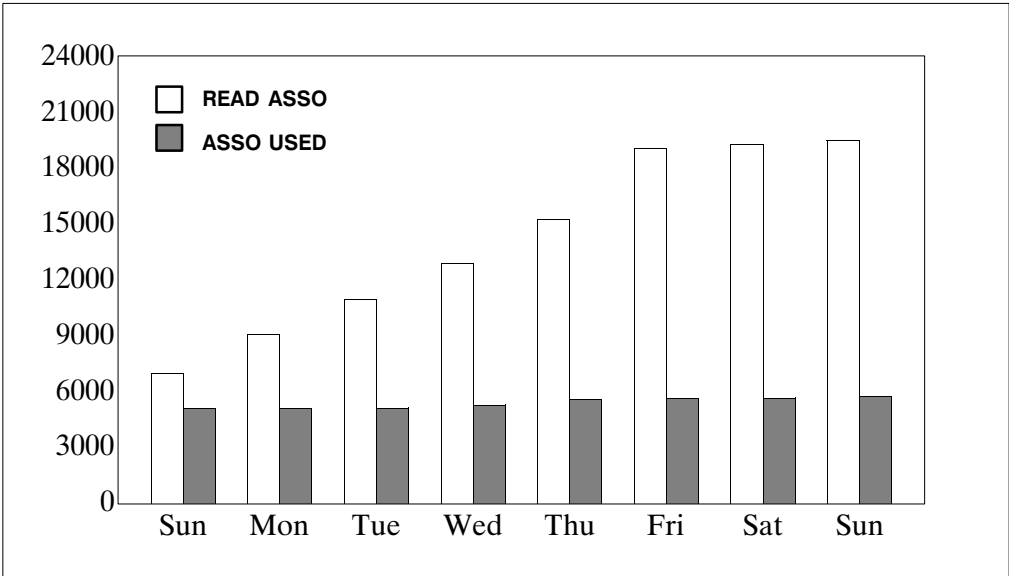
Figure 4-2: Example for 24-hour environment (no daily nucleus shutdown)

Figure 4-2 shows in graphical form the values which were recorded on a daily basis over the period of 1 week for the cumulative ASF data field READ ASSO and the non-cumulative ASF data field ASSO USED. The values were recorded in an environment where the nucleus was run continuously in a 24-hour environment.

For the field READ ASSO, and for all other cumulative ASF data fields, there is only one meaningful way to condense the values:

- the difference from Sunday to Sunday can be calculated, thereby giving the total number of ASSO reads for the week.

For the field ASSO USED, and for all other non-cumulative ASF data fields, the same possibilities exist as for running in an environment with a daily shutdown, so meaningful averages and differences can be calculated.

Here, the utility function "Condense Records to Delta Records" can be used for both cumulative and non-cumulative ASF data fields.

However, since average values are only meaningful for the non-cumulative ASF data fields in a 24-hour environment, the utility function "Condense Records to Average Records" should be used with the field "24-hr environment" marked, resulting in the following processing:

- averages are calculated for the non-cumulative ASF data fields
- differences are calculated for the cumulative ASF data fields

The records which result are *modified average records*, and they contain a combination of average values for the non-cumulative ASF data fields and differences for the cumulative data fields.

Summary of the Condensed Record Types

Average Records:

- Suitable for databases with a daily shut down, not suitable for databases in a 24-hour environment
- the condensed records summarize the nucleus records over a given period of time (for example, 1 month)

Difference Records:

- Suitable for databases with a daily shut down <u>and</u> for databases in a 24-hour environment.
- the condensed data represents only changes (for example, ASSO USED = 0) in ASF data fields over a period of time. Such data can be useful for special applications, but since absolute values are missing, the data in such records is not entirely representative.

Modified Average Records:

- Suitable for databases with a daily shut down <u>and</u> for databases in a 24-hour environment.
- the condensed records contain average values for non-cumulative ASF data fields and differences for cumulative data fields.
- the condensed records summarize the nucleus records over a given period of time (for example, 1 month)

When planning your ASF system, you should choose only one of these methods. If you are running your database in a 24-hour environment, there is only one choice, namely modified average records. If you shut down and restart the nucleus every day, you can choose any of the methods. Average records have the advantage that the values calculated for the cumulative ASF data fields such as READ ASSO are the daily average values which you already know from the ADABAS utility ADAREP or the nucleus end session summary. Furthermore, ASF can calculate these average values faster than if the nucleus is run in a 24-hour environment.

Method

The basic administrative method for creating condensed records for use in evaluations is:

- run the appropriate condense function to access all the nucleus records stored for a given period, for example 1 month, and generate new condensed records containing average and/or differences for the ASF data fields.

- Generate the condensed records for a given period of time, for example 1 month, at the start of the next period.

- Assign a special Store Type to the condensed records, so that they can be used in all of the available 10 types of ASF evaluations (see the description of the special Store Types later in this chapter).

ASF Utilities (Main Menu option A)

```
  12:26:54              *** A D A B A S  Statistics Facility ***          23.04.1997
                            - ASF Utilities Menu -                         MUM00001


                  Code                  Service
                 -------  ------------------------------------
                   A      Condense records to average records
                   D      Condense records to delta records
                   S      Synchronize / regenerate store times
                   T      Transfer from foreign ASF-System
                   I      ASF Application Program Interface
                  1/2     API Example 1/2
                   ?      Help
                   .      Terminate
                 -------  ------------------------------------

        Enter code:  _




        Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term                                                Menu
```

Figure 4-3: Menu for ASF Utilities

Purpose

The menu lists the available ASF Utilities. You can select one of the listed utilities by typing the one-letter code for the utility in the "Enter code" field. When you have entered the input data, press ENTER to activate the utility which you selected.

Screen selection

This menu is reached by selecting the service code "A" in the Main Menu.

Input field description

Enter code:

Enter the code of the utility you wish to activate.

Code A: Condense Records to Average Records

```
 14:33:00            *** A D A B A S Statistics Facility ***          28.05.1997
                  - Condensing nucleus records to average records -    MSV00001


                    Code                  Service
                   -------   ------------------------------------
                     S      Start condensing
                     ?      Help
                     .      Terminate
                   -------   ------------------------------------
          Enter code : _

     Snapshots from : _____ , 00:00   to   _____ , 23:59
      Store profile : _____   ID:
         Store type : __
24 hr environment : _                    <=   delta method for cumulative fields

Generate st. type : __                   Condensing period : __
 Reduced on DB-ID : _____                Restart from reduced DB-ID : _

      Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      HELP  More  Term                                                  Menu
```

Figure 4-4: Menu for condensing nucleus records to average records

Purpose

This menu is used for generating *average records* or *modified average records*. Average records contain daily, weekly or monthly average values of ASF data fields. Modified average records are similar to average records, but for cumulative ASF data fields a difference is calculated instead of an average. Therefore, each modified average record contains a mixture of average and difference values.

Screen selection

This menu is reached by selecting the service code "A" in the ASF Utilities Menu.

Description

ASF reads the nucleus records which meet the selection criteria, and generates new average records which contain the averages of the individual numerical ASF data fields. If you mark the field "24 hr environment", modified average records are generated instead of average records. The period of time to which each condensed record refers is defined in the input field "Condensing period". In each condensed record, the non-numerical ASF data fields are set to the values from the last nucleus record processed for the condensed record.

Daily Shutdown/24-Hour Environment

A distinction is made between a 24-hour environment (the nucleus runs continuously) and daily shutdown (the nucleus is shut down and restarted every day).

For operation with a daily shutdown, in which cumulative ASF data fields such as READ ASSO are reset to 0 every day at nucleus startup, records are condensed so that averages are calculated for both cumulative and non-cumulative ASF data fields. Such records are called *average records*.

In a 24-hour environment, the nucleus runs continuously, so cumulative ASF data fields such as READ ASSO are NOT reset to 0 every day. In this case it is meaningless to calculate average values for the cumulative ASF data fields, so instead the records are condensed so that

- differences are calculated for the cumulative ASF data fields and
- averages are calculated for the non-cumulative ASF data fields.

Such records are called *modified average records*.

Note:
The function Condense Records to Delta Records (Code D), described later in this chapter, generates a third type of condensed record, namely difference records.

121

Special ASF Data Fields for Condensed Records

ASF writes values into the following special ASF data fields of the condensed records:

ASF Data Field	Description
CONDENSED FROM D	For average records, this contains the date of the first selected nucleus record in the specified period.
	For difference records and modified average records, this contains the date of the most recent nucleus record before the start of the selected period.
CONDENSED TO DAT	For average records, modified average records and difference records, this contains the date of the last selected nucleus record in the specified period.
RECORD TYPE	This field indicates the method (average, modified average or difference) and the time period (day, week, month or entire period) which was used to generate the condensed record.
	The values for monthly condensed records are:
	AverMonth average records
	AvDelMonth modified average records
	DeltaMonth difference records
	Corresponding values exist for Week, Day and FromTo (entire period).
STORE-DATE	For monthly condensed records, this field is set to the 15th of the month. For weekly condensed records, this field is set to the date of the Wednesday of the week.
STORE-TIME	ASF always sets this field to 12:00.
SYNC-DATE	(same as STORE-DATE)
SYNC-TIME	(same as STORE-TIME)

Service Codes

Code S: Start condensing

Select this code to start condensing nucleus records to average records or modified average records.

Input field description

Enter code:

>the code of the service you wish to activate.

Snapshots from ... to:

>the time frame (starting date/time and end date/time) for which condensed records are to be generated.

>You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in the chapter *The Menu System*.

Store profile:

>the name of the Store Profile which was used by the Store Program while the data was being collected. Type "*" to get an active help list.

Store type:

>the Store Type used by the Store Program while the data was being collected. Type "*" to get an active help list.

24 hr environment

>If you mark this field, ASF generates modified average records, which contain average values for non-cumulative ASF data fields and difference values for cumulative ASF data fields.

>If you do not mark this field, ASF generates average records, which contain average values for both cumulative and non-cumulative ASF data fields.

Generate st. type

the Store Type which ASF assigns to the generated records.

Software AG recommends you to use Store Types whose names begin with a special character such as "+", "&" or "#", in order to differentiate between condensed records and nucleus or trend records. The following Store Types are predefined in ASF for average records and modified average records:

Store Type	Description
+D	daily modified average records (24-hour environment)
+F	one modified average record (24-hour environment) for the entire period
+M	monthly modified average records (24-hour environment)
+W	weekly modified average records (24-hour environment)
#D	daily average records, nucleus restarted daily
#F	one average record for the entire period, nucleus restarted daily
#M	monthly average records, nucleus restarted daily
#W	weekly average records, nucleus restarted daily

The following predefined Store Types are also available, but they are intended for use with the function "Condense records to delta records".

Store Type	Description
&D	daily difference records
&F	one difference record for the entire period
&M	monthly difference records
&W	weekly difference records

Condensing period

> the unit of time which each condensed record represents. Valid values are: DA (daily), WE (weekly), MO (monthly), and FT (from-to). Type "*" to get an active help list.
>
> If you specify DA, ASF generates one condensed record for each 24-hour period in the entire period.
>
> If you specify WE, ASF generates one condensed record for each 7-day period (Monday to Sunday) in the entire period.
>
> If you specify MO, ASF generates one condensed record for each calendar month in the entire period.
>
> If you specify FT, ASF generates one condensed record for the entire period.

Reduced on DB-ID

> If you enter a database ID in this optional input field, then data will be stored only for the database specified. The database ID must be one of those defined in the Store Profile.
>
> If, however, you mark the field "Restart from reduced DB-ID", the ID you specify in the field "Reduced on DB-ID" is the ID of the database at which ASF restarts processing after a previous run of the function was aborted. You can determine the database ID at which the previous run was aborted by examining the job output from that run.

Restart from reduced DB-ID

> Mark this field if you want to restart a previously aborted run of the condense function. Specify the ID of the database with which ASF is to restart in the field "Reduced on DB-ID".

Code D: Condense Records to Delta Records

```
  14:33:33            *** A D A B A S Statistics Facility ***         28.05.1997
                - Condensing nucleus records to delta records -        MSV10001


                   Code                    Service
                  -------   -----------------------------------
                    S     Start condensing
                    ?     Help
                    .     Terminate
                  -------   -----------------------------------
          Enter code : _

       Snapshots from : _____ , 00:00   to   _____ , 23:59
        Store profile : _____   ID:
           Store type : __
          Nucleus end : __                  <=   store type of nucleus-end records

  Generate st. type : __                      Condensing period : __
   Reduced on DB-ID : _____                   Restart from reduced DB-ID : _

       Direct command ==> _____
  Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
        HELP  More  Term                                             Menu
```

Figure 4-5: Menu for condensing nucleus records to delta records

Purpose

The menu is used for generating *difference records* (also called delta records). These records contain daily, weekly or monthly difference values of ASF data fields. A single difference record can also be generated for the entire period.

Screen selection

This menu is reached by selecting the service code "D" in the ASF Utilities Menu.

Description

ASF reads the nucleus records which meet the selection criteria, and generates new records which contain daily, weekly or monthly differences of the individual numerical ASF data fields. The period of time to which each difference record refers is defined in the input field "Condensing period". In each condensed record, the non-numerical ASF data fields are set to blanks if the value has not changed, or to "* changed *" if the value has changed. If the field is not long enough to contain all of this text, a substring (for example "* chan" for a 6-character field) is used instead.

Special ASF Data Fields for Condensed Records

ASF writes values into the following special ASF data fields of the condensed records:

ASF Data Field	Description
CONDENSED FROM D	For average records, this contains the date of the first selected nucleus record in the specified period.
	For difference records and modified average records, this contains the date of the most recent nucleus record before the start of the selected period.
CONDENSED TO DAT	For average records, modified average records and difference records, this contains the date of the last selected nucleus record in the specified period.
RECORD TYPE	This field indicates the method (average, modified average or difference) and the time period (day, week, month or entire period) which was used to generate the condensed record.
	The values for monthly condensed records are: AverMonth average records AvDelMonth modified average records DeltaMonth difference records
	Corresponding values exist for Week, Day and FromTo (entire period).
STORE-DATE	For monthly condensed records, this field is set to the 15th of the month. For weekly condensed records, this field is set to the date of the Wednesday of the week.

STORE-TIME   ASF always sets this field to 12:00.

SYNC-DATE   (same as STORE-DATE)

SYNC-TIME   (same as STORE-TIME)

Service Codes

Code S: Start condensing

Select this code to start condensing nucleus records to difference records.

Input field description

Enter code:

> the code of the service you wish to activate.

Snapshots from ... to:

> the time frame (starting date/time and end date/time) for which condensed records are to be generated.

> You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in the chapter *The Menu System*.

Store Profile:

> the name of the Store Profile which was used by the Store Program while the data was being collected. Type "*" to get an active help list.

Store type:

> the Store Type used by the Store Program while the data was being collected. Type "*" to get an active help list.

Nucleus end:

> the Store Type of explicit nucleus end or of the refresh nucleus records, should any such records exist.

> If no explicit nucleus end records are written during the nucleus shutdown procedure, inaccuracies of up to 5% (for the cumulative ASF data fields) can occur in the calculation of monthly difference records. This is because, even in a 24-hour environment, the nucleus must occasionally be shut down, and information concerning the cumulative ASF data fields is lost if no explicit nucleus end records are stored.

> For example, if the nucleus is shut down at 11:25 and restarted at 11:40, the daily nucleus records written at 18:00 include only values for the cumulative ASF data fields from 11:40 onwards, so data for approximately half a day is lost. If, however, explicit Nucleus End records are written during the shutdown procedure, no data is lost.

Generate st. type

the Store Type which ASF assigns to the generated records. Software AG recommends you to use Store Types whose names begin with a special character such as "+", "&" or "#", in order to differentiate between condensed records and nucleus or trend records. The following Store Types are predefined in ASF for condensed difference records:

Store Type	Description
&D	daily difference records
&F	one difference record for the entire period
&M	monthly difference records
&W	weekly difference records

The following predefined Store Types are also available, but they are intended for use with the function "Condense records to average records".

Store Type	Description
+D	daily modified average records (24-hour environment)
+F	one modified average record (24-hour environment) for the entire period
+M	monthly modified average records (24-hour environment)
+W	weekly modified average records (24-hour environment)
#D	daily average records, nucleus restarted daily
#F	one average record for the entire snapshot, nucleus restarted daily
#M	monthly average records, nucleus restarted daily
#W	weekly average records, nucleus restarted daily

Condensing period

the unit of time which each condensed record represents. Valid values are: DA (daily), WE (weekly), MO (monthly), and FT (from-to). Type "*" to get an active help list.

If you specify DA, ASF generates one condensed record for each 24-hour period in the overall time frame.

If you specify WE, ASF generates one condensed record for each 7-day period (Monday to Sunday) in the overall time frame.

If you specify MO, ASF generates one condensed record for each calendar month in the overall time frame.

If you specify FT, ASF generates one condensed record for the entire time frame.

Reduced on DB-ID

If you enter a database ID in this optional input field, then data will be stored only for the database specified. The database ID must be one of those defined in the Store Profile.

If, however, the field "Restart from reduced DB-ID" is marked, the field "Reduced on DB-ID" contains the ID of the database at which ASF should restart processing after a previous run of the function was aborted.

Restart from reduced DB-ID

Mark this field if you want to restart a previously aborted run of the condense function. Specify the ID of the database with which ASF is to restart in the field "Reduced on DB-ID".

Code S: Synchronize store times of nucleus records

```
 14:33:59          *** A D A B A S Statistics Facility ***        28.05.1997
                  - Synchronize store times of nucleus records -       MSS20001

                  Code              Service
                 -------  ------------------------------------
                   S     Synchronize store times
                   R     Regenerate store times
                   ?     Help
                   .     Terminate
                 -------  ------------------------------------
          Enter code : _

    Snapshots from : _____ , 00:00   to  _____ , 23:59
 Single storage in : 00:00 h to 00:00 h     Same day as 'Single storage' from
 Generate timestmp : 00:00 h                Same day as 'Single storage' from

     Store profile : _____   ID:
        Store type : __
  Reduced on DB-ID : _____

      Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      HELP  More  Term                                                 Menu
```

Figure 4-6: Menu for synchronizing store times of nucleus records

Purpose

The menu is used for synchronizing the store times of nucleus records, or for regenerating the original store times in records which were previously synchronized.

Screen selection

This menu is reached by selecting the service code "S" in the ASF Utilities Menu.

Description

When records are synchronized, their original store times are modified to a new, common store time. This is useful in cases where ASF records have been created with slightly different store times, even though they belong logically to the same set of measurements (for example, if records from a remote ASF system are loaded into the database on the local sytem).

When records are synchronized, the ASF data fields STORE-DATE and STORE-TIME in each of the records are modified to the synchronized time. However, the ASF data fields REAL-STORE-DATE and REAL-STORE-TIME in each record are not modified; these fields always contain the original date and time when the record was created.

When records are regenerated, the ASF data fields STORE-DATE and STORE-TIME of each record are changed back to the original, unsynchronized store times stored in the ASF data fields REAL-STORE-DATE and REAL-STORE-TIME.

Service Codes

Code S: Start condensing

Select this code to synchronize the store times.

Code R: Start condensing

Select this code to regenerate the original store times in records which were previously synchronized.

Input field description

Enter code:

the code of the service you wish to activate.

Snapshots from ... to:

the time frame (starting date/time and end date/time) for which records are to be synchronized or regenerated.

You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in the chapter *The Menu System*.

Note:
Relative dates are especially useful when used in the Workplan (see Option P in the Main Menu)

Single storage in ... to:

>For the synchronize function, this is the range of time (starting time to end time) which will be treated as a single, common time.

>For the regenerate function, this is the range of time of the records before they were synchronized.

Generate timestamp:

>For the synchronize function, this is the new, common time for all records being synchronized.

>If the regenerate function is being used, all records which were previously synchronized to this time will be modified to contain the original, unsynchronized time.

Store Profile:

>the name of the Store Profile which was used by the Store Program while the records were being collected. Type "*" to get an active help list.

Store type:

>the Store Type used by the Store Program while the records were being collected. Type "*" to get an active help list.

Reduced on DB-ID

>If you enter a database ID in this optional input field, records will be synchronized or regenerated only for the database specified. The database ID must be one of those defined in the Store Profile.

Code T: Transfer from foreign ASF System

```
 14:34:13          *** A D A B A S  Statistics Facility ***        28.05.1997
                     - Transfer from foreign ASF system -          MTFS0001



                  Code               Service
                 -------   ------------------------------------
                    S      Start transfer from foreign ASF system
                    ?      Help
                    .      Terminate
                 -------   ------------------------------------


        Enter code : _

 Store profile (id): _____




      Direct command ==> _____
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       HELP  More  Term                                                  Menu
```

Figure 4-7: Menu for transferring data from a foreign ASF system

Purpose

This function allows ASF records from a foreign ASF system to be loaded into the local ASF system. The records which are loaded from the foreign system are unloaded on the foreign ASF system by the EXPORT function. When the records are loaded into the local ASF system, the Store Profile ID stored in each record is changed from the original value on the foreign ASF system to the ID of the Store Profile specified in the mask. This is necessary because the internal ID of the Store Profile is different in different ASF systems, even if the name is the same.

Hint: use the same Store Profile name on all foreign ASF systems for data which will be later loaded with a common Store Profile name into the local system. This will simplify the administrative task involved.

This function runs only in batch mode with most TP monitors, since input data is read from a work file.

Note:
You cannot import ASF records into an ASF 6.2 system which have been exported by an ASF 1.2 or earlier system.

Screen selection

This menu is reached by selecting the service code "T" in the ASF Utilities Menu.

Service Codes

Code S: Start transfer from foreign ASF system

Select this code to load data from a foreign ASF system into the local ASF system.

Input field description

Enter code:

the code of the service you wish to activate.

Store profile (ID):

the name of the Store Profile which ASF will assign to records loaded into the local ASF database. If you enter a valid Store Profile name, ASF automatically displays the internal ID of the Store Profile.

Code I: ASF Application Programming Interface

```
 12:28:04            *** A D A B A S  Statistics Facility ***          23.04.1997
                        - API test interface -                          MAT00001


                Enter code : __ (00=INIT,01=TDF,02=DFT)
                Store type : WE
    Store profile name/id : _____  _____
            Time interval : -999_____ , 13:39  to  +0_____ , 13:39
                  DB/File : _____  _____
                   Origin : NU_
         Date format code : _
Display format (optional) : Dec.sign: _ Th.sign: _ Kilotrans: _ Megatrans: _
          No. of records : _12

        Field names/units : _____  __
                            _____  __
                            _____  __
                            _____  __

     Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      HELP  More  Term                                                  Menu
```

Figure 4-8: Menu for testing the API

Purpose

This menu allows you to try out some of the features of the Application Program Interface. It is in no way intended to demonstrate the full capability of the API.

The selection criteria that you enter are passed internally to a test program which calls the API subroutine ASFGET01 to retrieve records from the ASF database.

The test program displays a key consisting of fields returned by ASFGET01 for each retrieved record, namely: the database ID, the file ID, the creation date and time of the record, the Store Profile ID and the Store Type.

If more records are retrieved than can be displayed on one screen, you can use the [ENTER] key to page forwards to the end of the list. Each time you press [ENTER], a new call of ASFGET01 is issued.

Refer to the chapter **Application Programming Interface** for details of writing applications using the API.

Screen selection

This menu is reached by selecting the service code "I" in the ASF Utilities Menu.

Input field description

Enter code:

The valid values for this field are 00, 01 and 02. If you are using the API Test Interface for the first time for a given set of selection criteria, you must specify the value 00 for this field. This causes the test program to perform the ASFGET01 initialization which is always required when using new selection criteria.

If you specify the value 01 for this field, the key which is displayed for each retrieved record is shown in the format time, database ID, file ID.

If you specify the value 02 for this field, the key which is displayed for each retrieved record is shown in the format database ID, file ID, time.

Store type:

the Store Type used by the Store Program while the data was being collected. Type "*" to get an active help list.

Store profile name/ID:

the name and/or the ID of the Store Profile which was used by the Store Program while the data was being collected. You must supply at least one of these fields. If you supply both of these fields, the Store Profile name is ignored. Type "*" to get an active help list.

Time interval ... to:

the starting date/time and the end date/time of the time frame to be used.

You can specify the date in either absolute or relative format. For further details, refer to the section **Absolute and Relative Date Format** in the chapter *The Menu System*.

DB/File

the database ID and file ID of the records to be retrieved.

Origin

the origin of the records to be retrieved.

The choices are: NU (nucleus data only), TR (trend data only) and ALL (both nucleus and trend data). Type "*" to get an active help list.

Date Format Code

the format to be used for the display of dates. Specify "1" for the format YYYY-MM-DD or "2" for the format DD.MM.YYYY.

Dec. sign

the decimal separating character to be used in numerical output. Valid values are the period (".") and the comma (","). The decimal separating character must be different from the thousands separating character.

Th. sign

the thousands separating character to be used in numerical output. Valid values are the period (".") and the comma (","). The thousands separating character must be different from the decimal separating character.

Kilotrans

if you mark this field, numerical values greater than 1000 are displayed in the K notation.

Megatrans

if you mark this field, numerical values greater than 1000K are displayed in the M notation.

No. of records

the maximum number of records to be retrieved per call of ASFGET01 by the test program. Because of the limitations of the test program, this value cannot exceed 12.

Field names/units

the names of the ASF data fields and their units of measurement.

The test program allows you to specify a maximum of 4 ASF data fields.

Type "*" to get an active help list.

Code 1: API Example 1

This feature displays the output of the sample program PEXAMPL1. The following output is displayed:

```
              ***  A D A B A S  STATISTICS FACILITY ***
                    Space used for selected databases
                  (Application Program Interface - Example 1)


Date: 1993-03-15

DB     DB-Name          Asso (blocks)     DB Data (blocks)     Sum (blocks)
-------------------------------------------------------------------------
16     DB016-ALSBA              7.384               34.523           41.907
17     DB017-ANWEN             96.653              367.584          464.237
19     A-BEHOERDE            197.888              265.792          463.680
26     SPL-MIRROR             63.189              195.942          259.131
27     DB027-ALSBA            48.552              146.454          195.006
36     DB036-ALSBA            93.039              197.004          290.043
37     ENTIRE-ALSB           203.762              238.106          441.868
-------------------------------------------------------------------------
                                                 Total:         2.155.872
```

Figure 4-9: Output of Sample Program PEXAMPL1

The source code of the PEXAMPL1 program can be found on the SYSASF library.

The source code of PEXAMPL1 is as follows:

```
0010 *************** ADABAS Statistics Facility (ASF) *********************
0020 * Program ....: PEXAMPL1
0030 * Description : DEMONSTRATION OF THE API (ASFGET01):
0040 *               SPACE USED FOR SELECTED DATABASES
0050 ***********************************************************************
0060 * (C) COPYRIGHT 1997 by SOFTWARE AG, Darmstadt (Germany)
0070 ********************** Updates in Version 1.2.2 **********************
0080 *       SAG201097 Five digit profile Id and four digit year for Y2K:
0090 *               #P-SELECTION-CRITERIA  (A61) -> (A67)
0100 *               #P-FROM-DATE           (A8) -> (A10)
0110 *               #P-TO-DATE             (A8) -> (A10)
0120 *               #P-STORE-PROFILE-ID    (A3) -> (A5)
0130 *               #P-FIELD-DATA    (A17/1:150) -> (A18/1:150)
0140 *               #P-WORK                (A107) -> (A114)
0150 *               #M-DATE                (A8) -> (A10)
0160 ***********************************************************************
0170 DEFINE DATA
0180 LOCAL
0190 1 #P-FKTCODE             (A2)
0200 1 #P-INPUT-PARAMETER
0210   2 #P-SELECTION-CRITERIA (A67)
0220   2 REDEFINE #P-SELECTION-CRITERIA
0230     3 #P-FROM-DATE        (A10)
0240     3 #P-FROM-TIME        (A5)
0250     3 #P-TO-DATE          (A10)
0260     3 #P-TO-TIME          (A5)
0270     3 #P-DAT-FORMAT-CODE  (A1)
0280     3 #P-STORE-PROFILE    (A16)
0290     3 #P-STORE-PROFILE-ID (A5)
0300     3 #P-STORE-TYPE       (A2)
0310     3 #P-ORIGIN           (A3)
0320     3 #P-DB               (A5)
0330     3 #P-FILE             (A5)
0340   2 #P-FORMAT             (A4)
0350   2 REDEFINE #P-FORMAT
0360     3 #P-DECIMAL-SIGN     (A1)
0370     3 #P-THOUSAND-SIGN    (A1)
0380     3 #P-KILO-TRANSFORMATION (A1)
0390     3 #P-MEGA-TRANSFORMATION (A1)
0400   2 #P-NR-RECORDS         (N3)
0410   2 #P-FIELD-NAMES  (A16/1:150)
0420   2 #P-UNITS        (A2/1:150)
0430   2 #P-RESERVE            (A30)
0440 1 #P-OUTPUT-PARAMETER
```

```
0450   2 #P-FIELD-DATA    (A18/1:150)
0460   2 #P-ADDITIONS1   (A250)
0470   2 #P-ADDITIONS2   (A250)
0480 1 #P-RETURN
0490   2 #P-RETURNCODE            (N2)
0500   2 #P-ASF-MSG-NR            (N4)
0510   2 #P-ASF-MSG             (A60)
0520   2 #P-WRONG-VALUE          (A32)
0530   2 #P-PARAM-NO             (N3)
0540 1 #P-WORK              (A114)
0550 *
0560 1 #M-ASSO       (N7/1:7)
0570 1 #M-DATA       (N7/1:7)
0580 1 #M-DATE        (A10)
0590 1 #M-DB          (A5/1:7)   INIT <'16','17','19','26','27','36','37'>
0600 1 #M-DBNAME     (A16/1:7)
0610 1 #M-SUM        (N7/1:7)
0620 1 #M-TOTAL-SUM  (N7)
0630 1 #M-TEXT        (A75)
0640 *
0650 1 #I-DB          (P3)
0660 *
0670 END-DEFINE
0680 *
0690 FOR #I-DB 1 TO 7
0700 *
0710   MOVE '00' TO #P-FKTCODE
0720   CALLNAT 'ASFGET01' #P-FKTCODE #P-INPUT-PARAMETER
0730                      #P-OUTPUT-PARAMETER #P-RETURN #P-WORK
0740 *
0750   MOVE '02'             TO #P-FKTCODE
0760   MOVE '1993-03-15'      TO #P-FROM-DATE
0770   MOVE '00:00'          TO #P-FROM-TIME
0780   MOVE '1993-03-15'      TO #P-TO-DATE
0790   MOVE '1'              TO #P-DAT-FORMAT-CODE
0800   MOVE 'NEW-TEST-DB-ALL' TO #P-STORE-PROFILE
0810   MOVE 'DA'             TO #P-STORE-TYPE
0820   MOVE 'NU'             TO #P-ORIGIN
0830   MOVE #M-DB(#I-DB)     TO #P-DB
0840   MOVE 1               TO #P-NR-RECORDS
0850   MOVE 'DB-NAME'        TO #P-FIELD-NAMES(1)
0860   MOVE 'ASSO USED'      TO #P-FIELD-NAMES(2)
0870   MOVE 'DB DATA USED'   TO #P-FIELD-NAMES(3)
0880   MOVE 'BL'             TO #P-UNITS(2)
0890   MOVE 'BL'             TO #P-UNITS(3)
0900 *
```

```
0910   CALLNAT 'ASFGET01' #P-FKTCODE #P-INPUT-PARAMETER
0920                     #P-OUTPUT-PARAMETER #P-RETURN #P-WORK
0930 *
0940   IF #P-RETURNCODE = 1
0950      MOVE 'Please change sample program PEXAMPL1 according '-
0960           'to your collected ASF data.'
0970        TO #M-TEXT
0980      ESCAPE BOTTOM
0990   END-IF
1000 *
1010   MOVE #P-FIELD-DATA(2)      TO #M-DBNAME(#I-DB)
1020   COMPUTE #M-ASSO(#I-DB) = VAL(#P-FIELD-DATA(3))
1030   COMPUTE #M-DATA(#I-DB) = VAL(#P-FIELD-DATA(4))
1040   COMPUTE #M-SUM(#I-DB) = VAL(#P-FIELD-DATA(3)) +
1050                           VAL(#P-FIELD-DATA(4))
1060   ADD #M-SUM(#I-DB) TO #M-TOTAL-SUM
1070 *
1080 END-FOR
1090 *
1100 MOVE #P-FROM-DATE TO #M-DATE
1110 INPUT USING MAP 'MEXAMPL1'
1120 *
1130 END
```

Code 2: API Example 2

This feature displays the output of the sample program PEXAMPL2. The following output is displayed:

```
            ***   A D A B A S   STATISTICS FACILITY ***
         Overview of disk space and IO for a six month period
            (Application Program Interface - Example 2)




            Asso/Data(blocks)           IOs on A/D/W
      ------------------------------------------------
      1997 Sep         2.186.840             1.689.672
           Oct         2.305.699             1.586.855
           Nov         2.414.520             1.928.323

           Dec         2.305.854             1.041.419
      1998 Jan         2.300.059             1.777.810
           Feb         2.177.879             1.388.148
      ------------------------------------------------

                      13.690.851             9.412.227
```

Figure 4-10: Output of Sample Program PEXAMPL2

The source code of the PEXAMPL2 program can be found in the SYSASF library.

The source code of PEXAMPL2 is as follows:

```
0010 *************** ADABAS Statistics Facility (ASF) *********************
0020 * Program ....: PEXAMPL2
0030 * Description : DEMONSTRATION OF THE API (ASFGET01):
0040 *               OVERVIEW OF DISK SPACE AND IO FOR
0050 *               A SIX MONTH PERIOD
0060 ************************************************************************
0070 * (C) COPYRIGHT 1997 by SOFTWARE AG, Darmstadt (Germany)
0080 ********************** Updates in Version 1.2.2 *********************
0090 *       SAG201097 Five digit profile Id and four digit year for Y2K:
0100 *               #P-SELECTION-CRITERIA  (A61) -> (A67)
0110 *               #P-FROM-DATE           (A8) -> (A10)
0120 *               #P-TO-DATE             (A8) -> (A10)
0130 *               #P-STORE-PROFILE-ID    (A3) -> (A5)
0140 *               #P-FIELD-DATA    (A17/1:150) -> (A18/1:150)
0150 *               #P-WORK              (A107) -> (A114)
0160 *               #M-YEAR            (A2/1:6) -> (A4/1:6)
0170 ************************************************************************
0180 DEFINE DATA
0190 LOCAL
0200 1 #P-FKTCODE              (A2)
0210 1 #P-INPUT-PARAMETER
0220   2 #P-SELECTION-CRITERIA (A61)
0230   2 REDEFINE #P-SELECTION-CRITERIA
0240     3 #P-FROM-DATE        (A8)
0250     3 #P-FROM-TIME        (A5)
0260     3 #P-TO-DATE          (A8)
0270     3 #P-TO-TIME          (A5)
0280     3 #P-DAT-FORMAT-CODE  (A1)
0290     3 #P-STORE-PROFILE    (A16)
0300     3 #P-STORE-PROFILE-ID (A3)
0310     3 #P-STORE-TYPE       (A2)
0320     3 #P-ORIGIN           (A3)
0330     3 #P-DB               (A5)
0340     3 #P-FILE             (A5)
0350   2 #P-FORMAT            (A4)
0360   2 REDEFINE #P-FORMAT
0370     3 #P-DECIMAL-SIGN     (A1)
0380     3 #P-THOUSAND-SIGN    (A1)
0390     3 #P-KILO-TRANSFORMATION (A1)
0400     3 #P-MEGA-TRANSFORMATION (A1)
0410   2 #P-NR-RECORDS         (N3)
0420   2 #P-FIELD-NAMES   (A16/1:150)
0430   2 #P-UNITS         (A2/1:150)
0440   2 #P-RESERVE          (A30)
```

```
0450 1 #P-OUTPUT-PARAMETER
0460   2 #P-FIELD-DATA    (A17/1:150)
0470   2 #P-ADDITIONS1   (A250)
0480   2 #P-ADDITIONS2   (A250)
0490 1 #P-RETURN
0500   2 #P-RETURNCODE          (N2)
0510   2 #P-ASF-MSG-NR          (N4)
0520   2 #P-ASF-MSG          (A60)
0530   2 #P-WRONG-VALUE         (A32)
0540   2 #P-PARAM-NO            (N3)
0550 1 #P-WORK           (A107)
0560 *
0570 1 #M-IO       (N8/1:6)
0580 1 #M-SPACE    (N8/1:6)
0590 1 #M-SUM-IO    (N8)
0600 1 #M-SUM-SPACE (N8)
0610 1 #M-YEAR     (A4/1:6) INIT <'1992','    ','    ','    ','1993','    '>
0620 1 #M-MONTH    (A3/1:6) INIT <'Sep','Oct','Nov','Dec','Jan','Feb'>
0630 1 #M-TEXT     (A75)
0640 *
0650 1 #I-MONTH    (P3)
0660 1 #I-DB       (P3)
0670 *
0680 1 #W-DBS       (A5/1:7)  INIT <'16','17','19','26','27','36','37'>
0690 1 #W-MONTHS    (A2/1:6)  INIT <'09','10','11','12','01','02'>
0700 1 #W-YEAR      (A4/1:6)  INIT <'1992','1992','1992','1992','1993','1993'>
0710 *
0720 END-DEFINE
0730 *
0740 *
0750 F. FOR #I-MONTH 1 TO 6
0760 *
0770   FOR #I-DB 1 TO 7
0780 *
0790     MOVE '00' TO #P-FKTCODE
0800     CALLNAT 'ASFGET01' #P-FKTCODE #P-INPUT-PARAMETER
0810                      #P-OUTPUT-PARAMETER #P-RETURN #P-WORK
0820 *
0830     MOVE '02'           TO #P-FKTCODE
0840     COMPRESS #W-YEAR(#I-MONTH) '-' #W-MONTHS(#I-MONTH) '-01'
0850                     INTO #P-FROM-DATE LEAVING NO
0860     MOVE '1'            TO #P-DAT-FORMAT-CODE
0870     MOVE 'NEW-TEST-DB-ALL' TO #P-STORE-PROFILE
0880     MOVE '#M'           TO #P-STORE-TYPE
0890     MOVE 'NU'           TO #P-ORIGIN
0900     MOVE #W-DBS(#I-DB)     TO #P-DB
```

```
0910     MOVE 1                 TO #P-NR-RECORDS
0920     MOVE 'ASSO USED'       TO #P-FIELD-NAMES(1)
0930     MOVE 'DB DATA USED'    TO #P-FIELD-NAMES(2)
0940     MOVE 'READ ASSO'       TO #P-FIELD-NAMES(3)
0950     MOVE 'READ DATA'       TO #P-FIELD-NAMES(4)
0960     MOVE 'READ WORK'       TO #P-FIELD-NAMES(5)
0970     MOVE 'WRITE ASSO'      TO #P-FIELD-NAMES(6)
0980     MOVE 'WRITE DATA'      TO #P-FIELD-NAMES(7)
0990     MOVE 'WRITE WORK'      TO #P-FIELD-NAMES(8)
1000     MOVE 'BL'              TO #P-UNITS(1)
1010     MOVE 'BL'              TO #P-UNITS(2)
1020 *
1030     CALLNAT 'ASFGET01' #P-FKTCODE #P-INPUT-PARAMETER
1040                        #P-OUTPUT-PARAMETER #P-RETURN #P-WORK
1050 *
1060     IF #P-RETURNCODE = 1
1070        MOVE 'Please change sample program PEXAMPL2 according '-
1080             'to your collected ASF data.'
1090          TO #M-TEXT
1100        ESCAPE BOTTOM (F.)
1110     END-IF
1120 *
1130     COMPUTE #M-SPACE(#I-MONTH) =
1140             #M-SPACE(#I-MONTH)    +
1150             VAL(#P-FIELD-DATA(2)) +
1160             VAL(#P-FIELD-DATA(3))
1170 *
1180     COMPUTE #M-IO(#I-MONTH) =
1190             #M-IO(#I-MONTH)     +
1200             VAL(#P-FIELD-DATA(4)) +
1210             VAL(#P-FIELD-DATA(5)) +
1220             VAL(#P-FIELD-DATA(6)) +
1230             VAL(#P-FIELD-DATA(7)) +
1240             VAL(#P-FIELD-DATA(8)) +
1250             VAL(#P-FIELD-DATA(9))
1260 *
1270   END-FOR
1280 *
1290   ADD #M-SPACE(#I-MONTH) TO #M-SUM-SPACE
1300   ADD #M-IO(#I-MONTH) TO #M-SUM-IO
1310 *
1320 END-FOR
1330 *
1340 INPUT USING MAP 'MEXAMPL2'
1350 *
1360 END
```

5

APPLICATION PROGRAMMING INTERFACE (API)

General

The records stored by ASF can be read by a NATURAL application program via a defined programming interface called the Application Programming Interface (API). In the current ASF release, the API consists of a single, very powerful subprogram named ASFGET01.

ASFGET01 is distributed with the ASF package and is called via the NATURAL statement CALLNAT. The input parameters required by ASFGET01 are the record selection criteria known from the ASF evaluations and the names of the required ASF data fields. The output parameters returned by ASFGET01 are the required ASF data fields from the specified records.

If the ASFGET01 output buffer is not large enough to return data for all of the records that meet the selection criteria, the subprogram can be called repeatedly until all of the records have been processed.

To illustrate the use of ASFGET01 in an application program, the sample programs PEXAMPL1 and PEXAMPL2 are supplied with the ASF package. You can display the output of these two programs by selecting the service codes "1" and "2" in the ASF Utilities Menu.

To allow you to familiarize yourself with ASFGET01, ASF includes an interface which allows you to pass parameters online to ASFGET01 and to view the results of the ASFGET01 calls directly on the screen. You can access this interface by selecting the service code "I" in the ASF Utilities Menu.

Note:
The length of some parameters of the ASFGET01 subprogram has been changed from ASF 1.2 to ASF 6.2. You must therefore adapt any program using the API. The sample programs supplied, PEXAMPL1 and PEXAMPL2, are already adapted and can be used as examples.

ASFGET01 Usage

ASFGET01 Initialization

The first time ASFGET01 is called, you must set the field FKTCODE to "00". Also, each time before you change the search criteria you must call ASFGET01 with FKTCODE set to "00". This causes ASFGET01 to initialize its search processing. For this initialization call, only FKTCODE needs to be set; all other ASFGET01 parameters can be left blank.

Specifying Search Criteria

After you have initialized ASFGET01, you can call ASFGET01 with FKTCODE set to "01" or "02", depending on the order in which you want to retrieve the records. You specify the search criteria for the records that you want to retrieve in the field SELECTION-CRITERIA.

ASFGET01 returns only selected ASF data fields from records which meet your search criteria. You supply the names of the required ASF data fields in the field FIELD-NAMES. You must specify the name of at least one ASF data field; the maximum number of names that you can specify is 150. Corresponding to each ASF data field in FIELD-NAMES you can specify a unit of measurement in UNITS. ASFGET01 returns the value of the ASF data field in the given unit of measurement. If you do not specify a unit of measurement for a given ASF data field, the default unit of measurement is used.

ASFGET01 Output Buffer Capacity

For each record which satisfies the search criteria, ASFGET01 returns one or more ASF data fields from the record (according to the data you specify in FIELD-NAMES) and a special key field. The number of records which can be processed by a single ASFGET01 call depends on the number of ASF data fields which you specify in FIELD-NAMES. A single call of ASFGET01 can return data for 150 ASF data fields, so the number of records which can be processed by a single ASFGET01 call is given by the formula

150 / (number of required ASF fields per record+1 key field).

ASFGET01 processes only whole records, so if there is insufficient space left for another record in the output buffer (all requested ASF data fields plus the special key field), the remaining portion of the buffer is left blank.

Example 1

If 2 ASF data fields are to be returned from each record that satisfies the search criteria, the ASFGET01 buffer can contain values for

150 / (2 ASF data fields+1 key field) = 50 records.

Example 2

If 39 ASF data fields are to be returned from each record that satisfies the search criteria, then

150/(39 ASF data fields+1 key field) = 3 complete records

can be processed per ASFGET01 call. Since 3 records require

3*(39+1) = 120 elements,

the remaining 30 elements will be blank.

Processing a Search Sequence with Multiple ASFGET01 Calls

If a single call of ASFGET01 is not sufficient to process all of the records which meet the search criteria, ASFGET01 processes as many records as it can for the current call, then sets RETURNCODE to 0 and ASF-MSG-NR to 507. ASFGET01 stores restart information in the field WORK. To process the next records in the search sequence, you must call ASFGET01 again with unchanged input parameters; in particular, you must not change the contents of the field WORK.

Termination of a Search Sequence

If WORK is blank upon completion of the current ASFGET01 call and RETURNCODE is 0, then the records returned in the current ASFGET01 buffer are the last records which satisfy the search criteria. In this case, the field ASF-MSG-NR contains the value 505.

The ASFGET01 Parameters

The call of ASFGET01 in a NATURAL module has the format

CALLNAT 'ASFGET01' **#FUNCTION-CODE**
         #INPUT-PARAMETERS
         #OUTPUT-PARAMETERS
         #RETURN
         #WORK

The parameters of the ASFGET01 call are defined as follows:

```
1 #FUNCTION-CODE          (A2)
1 #INPUT-PARAMETERS
  2 #SELECTION-CRITERIA   (A67)
  2 REDEFINE #SELECTION-CRITERIA
    3 #FROM-DATE          (A10)
    3 #FROM-TIME          (A5)
    3 #TO-DATE            (A10)
    3 #TO-TIME            (A5)
    3 #DATE-FORMAT-CODE   (A1)
    3 #STORE-PROFILE      (A16)
    3 #STORE-PROFILE-ID   (A5)
    3 #STORE-TYPE         (A2)
    3 #ORIGIN             (A3)
    3 #DB                 (A5)
    3 #FILE               (A5)
  2 #FORMAT               (A4)
  2 REDEFINE #FORMAT
    3 #DECIMAL-SIGN       (A1)
    3 #THOUSAND-SIGN      (A1)
    3 #KILO-TRANSFORMATION (A1)
    3 #MEGA-TRANSFORMATION (A1)
  2 #NR-RECORDS           (N3)
  2 #FIELD-NAMES    (A16/1:150)
  2 #UNITS           (A2/1:150)
  2 #RESERVE              (A30)
1 #OUTPUT-PARAMETERS
  2 #FIELD-DATA     (A18/1:150)
  2 #ADDITIONS1          (A250)
  2 #ADDITIONS2          (A250)
1 #RETURN
  2 #RETURNCODE           (N2)
  2 #ASF-MSG-NR           (N4)
  2 #ASF-MSG              (A60)
  2 #WRONG-VALUE          (A32)
  2 #PARAM-NO             (N3)
1 #WORK                  (A114)
```

The parameters are described in detail on the following pages.

Parameter 1: *FUNCTION-CODE*

```
1 #FUNCTION-CODE          (A2)
```

The following values are valid for this field:

---

00   Initialize ASFGET01.

01   ASFGET01 returns records in the sorting sequence date/time, database ID, file ID
          (TDF). The number of records returned for each ASFGET01 call is limited physically
          by the size of the ASFGET01 buffer and logically by the value supplied in the
          NR-RECORDS field. The search key for the starting record is composed of the fields

          STORE-TYPE, STORE-PROFIL-ID, FROM-DATE, DB, FILE.

          The key for the last record required is composed of the fields

          STORE-TYPE, STORE-PROFIL-ID, TO-DATE, DB, FILE.

          If TO-DATE is blank, the search continues to the end of the file.

02   ASFGET01 returns records in the sorting sequence database ID, file ID, date/time
          (DFT). The number of records returned for each ASFGET01 call is limited physically
          by the size of the ASFGET01 buffer and logically by the value supplied for the
          NR-RECORDS field. The search key is composed of the fields STORE-TYPE,
          STORE-PROFIL-ID, DB, FILE, FROM-DATE. The key for the last record required
          is composed of the fields STORE-TYPE, STORE-PROFIL-ID, DB, FILE,
          TO-DATE. If TO-DATE is blank, the search continues to the end of the file.

Parameter 2: *INPUT-PARAMETERS*

```
1 #INPUT-PARAMETERS
  2 #SELECTION-CRITERIA   (A67)
  2 REDEFINE #SELECTION-CRITERIA
    3 #FROM-DATE           (A10)
    3 #FROM-TIME           (A5)
    3 #TO-DATE             (A10)
    3 #TO-TIME             (A5)
    3 #DATE-FORMAT-CODE    (A1)
    3 #STORE-PROFILE       (A16)
    3 #STORE-PROFILE-ID    (A5)
    3 #STORE-TYPE          (A2)
    3 #ORIGIN              (A3)
    3 #DB                  (A5)
    3 #FILE                (A5)
  2 #FORMAT               (A4)
  2 REDEFINE #FORMAT
    3 #DECIMAL-SIGN        (A1)
    3 #THOUSAND-SIGN       (A1)
    3 #KILO-TRANSFORMATION (A1)
    3 #MEGA-TRANSFORMATION (A1)
  2 #NR-RECORDS           (N3)
  2 #FIELD-NAMES    (A16/1:150)
  2 #UNITS           (A2/1:150)
  2 #RESERVE             (A30)
```

FROM-DATE, FROM-TIME, TO-DATE, TO-TIME

These fields specify the start and end dates and times for the search. The fields FROM-DATE and TO-DATE must be in the format indicated by the DATE-FORMAT-CODE field. The fields FROM-TIME and TO-TIME can be left blank; the default for FROM-TIME is 00:00 and the default for TO-TIME is 23:59.

DATE-FORMAT-CODE

This field specifies the format of the input and output date fields. The following values are allowed:

"1"	Format YYYY-MM-DD
"2"	Format DD.MM.YYYY

STORE-PROFILE, STORE-PROFILE-ID

The STORE-PROFIL field specifies the name of the Store Profile which was used to store the original ASF records.

The field STORE-PROFIL-ID specifies the internal ID of the Store Profile.

At least one of these fields must be specified. If both are specified, ASFGET01 uses the value in STORE-PROFIL-ID.

STORE-TYPE

ASFGET01 uses the value in this field as a starting value for the search. The value specified does not have to correspond to any of the Store Types actually used — it merely specifies a start value for the search.

ORIGIN

The value specified in this field determines whether nucleus records, trend records or both are returned. The valid values are:

"NU"	nucleus records only
"TR"	trend records only
"ALL"	both nucleus and trend records

If this field is left blank, both nucleus and trend records will be returned.

DB, FILE

DB and FILE specify the starting values for the database ID and file number to be used in the search.

If neither of these fields is specified, ASFGET01 uses the starting values DB=1 and FILE=1. If only DB is specified, ASFGET01 uses the starting value FILE=1. If FILE is specified, DB must also be specified.

DECIMAL-SIGN, THOUSAND-SIGN, KILO-TRANSFORMATION, MEGA-TRANSFORMATION

These optional fields correspond to the fields "Decimal character", "Separating sign", "Kilo if > 1000" and "Mega if > 1000K" respectively in the ASF User Profile. Refer to the section **Define User Profile** in the chapter **The Menu System** for further details.

If you specify values for these fields, numerical data returned by ASFGET01 will be formatted accordingly. This is useful if you want to output the numerical data to a screen or a printer. If, however, you want to use one or more of the numerical values in a subsequent calculation in your application program, they must not be formatted, so you should leave these fields blank.

NR-RECORDS

This field specifies the maximum number of records to be returned per ASFGET01 call, provided that the ASFGET01 buffer is sufficiently large to contain this number of records. If no value is specified for this field, ASFGET01 returns as many records as possible in the ASFGET01 buffer.

Note that there is no way to specify explicitly the total number of records to be returned for a given set of search criteria. The total number of records that will be returned is always determined implicitly by the search criteria.

FIELD-NAMES, UNITS

The field FIELD-NAMES specifies the names of the ASF data fields which are to be retrieved from the records which meet the search criteria. The field UNITS specifies the units of measurement (for example "BL" for blocks) to be used for the retrieved ASF data fields.

Both FIELD-NAMES and UNITS are arrays of dimension 150, so up to 149 ASF data fields per stored record in the ASF database plus 1 key field can be returned for each ASFGET01 call.

The list of names in FIELD-NAMES is terminated by the first blank value or if 150 ASF data fields are specified. If a value in UNITS is blank, the default unit of measurement will be used for the corresponding ASF data field.

The values that are returned by the ASFGET01 call are stored in the field FIELD-DATA.

RESERVE

This field is currently unused.

Parameter 3: *OUTPUT-PARAMETERS*

```
1 #OUTPUT-PARAMETERS
  2 #FIELD-DATA     (A18/1:150)
  2 #ADDITIONS1          (A250)
  2 #ADDITIONS2          (A250)
```

FIELD-DATA

ASF data fields for the records which meet the search criteria are returned in this field. The names of the ASF data fields are specified in the field FIELD-NAMES. For each record, an additional key field is returned, whose format depends on the value specified for FKT-CODE.

If FKT-CODE="01", the key field can be redefined as follows:

Store Type	(A2)
Store Profile ID	(P5)
Date/Time	(T)
Database ID	(P5)
File ID	(P5)

If FKT-CODE="02", the key field can be redefined as follows:

Store Type	(A2)
Store Profile ID	(P5)
Database ID	(P5)
File ID	(P5)
Date/Time	(T)

FIELD-DATA is an array of dimension 150, so up to 149 ASF data fields plus the key field can be returned per record for each ASFGET01 call.

Using the notation FIELD-DATA(n) to represent the nth element in FIELD-DATA, the key field is returned in FIELD-DATA(1), the first ASF data field is returned in FIELD-DATA(2), the second ASF data field in FIELD-DATA(3) etc. This means that, because of the additional key field, the unit of measurement for the value returned in FIELD-DATA(n) is specified in UNITS(n-1).

If a given element FIELD-DATA(n) is filled with question marks ("???...?"), the corresponding name in FIELD-NAMES(n-1) was invalid.

ADDITIONS1, ADDITIONS2

These fields are currently unused.

157

Parameter 4: *RETURN*

```
1 #RETURN
  2 #RETURNCODE          (N2)
  2 #ASF-MSG-NR          (N4)
  2 #ASF-MSG             (A60)
  2 #WRONG-VALUE         (A32)
  2 #PARAM-NO            (N3)
```

RETURNCODE, ASF-MSG-NR, ASF-MSG

The value in RETURNCODE indicates whether the ASFGET01 call was successful. If the value 0 is returned, the call was successful. If the value 1 is returned, an error was detected by ASFGET01.

Further information on the completion status is provided in the fields ASF-MSG-NR and ASF-MSG. The relationship between these two fields and RETURNCODE is shown in the following table:

RETURNCODE	ASF-MSG-NR	ASF-MSG
0	504	Initialization of ASFGET01 completed successfully
	505	end of records reached
	507	not all of the records found could be displaed
	508	work field has been modified
1	501	invalid function code
	506	too many records/ASF data fields requested for a single ASFGET01 call.
	509	field must be numeric. The contents of the incorrect input field are returned in WRONG-VALUE, and the number of the incorrect field is returned in PARAM-NO.

WRONG-VALUE, PARAM-NO

If RETURNCODE is not 0 and the error was caused by incorrectly specifying an input field for the ASFGET01 call, the field WRONG-VALUE contains the content of the input field and the field PARAM-NO contains the number of the incorrect input field (FKTCODE=1, FROM-DATE=2 etc.).

Parameter 5: *WORK*

```
1 #WORK                   (A114)
```

This field is used as working storage by ASFGET01 and must not be modified by the user. It stores information concerning the last record processed, in cases where a single call of ASFGET01 is not sufficient to process all the records which satisfy the search criteria. If ASFGET01 is called again with unchanged input fields, the next records satisfying the search criteria are returned.

If WORK is blank upon completion of the current ASFGET01 call and RETURNCODE is 0, then the records returned in the current ASFGET01 buffer are the last records which satisfy the search criteria. In this case, the field ASF-MSG-NR will contain the value 505.

Note:
When ASFGET01 is called with #FUNCTION-CODE set to "00", WORK is set to blanks.

6

USER-DEFINED FIELDS

Introduction

On the ASF DATA record. there are 20 fields (10 alphanumeric and 10 numeric fields) which are not filled by ASF. Before ASF stores the record, a user-exit is called, where the user can fill these fields with any value. The same user-exit is called before an evaluation. At this point, the user can create so-called "virtual fields". A special user-exit is supplied, where the names of these user fields can be defined.

The ASF User-Exit "ASFUEXIT"

The ASF user-exit "ASFUEXIT" is a NATURAL subprogram which is delivered as source and object module on the ASF library. ASF always expects to find the user-exit, otherwise it fails. If desired, you can edit the source program and replace the object module with your own code.

The ASF user-exit is called twice: once immediately before ASF stores a record, and a second time at an evaluation, when any user-defined field is processed. A field created in the first way is named "real field", because its value is really stored on the ASF DATA record. A field created in the second way is named "virtual field", because its value is only available during the evaluation and is not saved permanently on the ASF file.

The delivered user-exit initializes the user-fields before the store, i.e. it fills the alphanumeric fields with blanks and sets the numeric fields to zero. At the evaluation, it copies the values from the real fields to the virtual fields, so that the values of the real fields are evaluated.

When the ASF user-exit gets control, the input parameters described below are supplied. Input parameters cannot be modified in the ASF user-exit. We describe here only the most important fields of the ASF DATA file. The other fields are described in the "DEFINE DATA" statement of the ASF user-exit delivered.

Level	Name	Format	Description
1	#FIELD-NUMBER	N3	The value of this field is equal to '0' before a store, or equal to the number of the field which will be evaluated.
1	ASF-STAMM		A copy of the full ASF DATA record.

Level	Name	Format	Description
2	TIME	T	Store time or, for synconized records, syncronized store time
2	REAL-STORE-TIME	T	Real store time
2	USER	A8	User id of saver
2	STORE-TYPE	A2	Store type (see the chapter *The Main Menu*, section *Store Nucleus Records*)
2	PROFIL-ID	P5	Profil-ID of the store profile
2	GCB-DBID	P5	Database ID
2	SART-KZ	A2	Record type (NU = nucleus record, TR = trend record)
2	GCB-DBNAME	A16	Name of Database
2	FCB-FNR	P5	File Number
2	FCB-FILENAME	A16	Name of File
2	USER-FIELDS		User fields in the view
3	USER-FIELD-A	A11/1:10	Alphanumeric user fields. - Do not modify these fields -
3	USER-FIELD-P	P11/1:10	Numeric user fields. - Do not modify these fields -

Figure 6-1: ASFUEXIT Input Parameters

When the user-exit returns control, the output parameters described below are given back to ASF. The output parameters can be filled with any value, as long as the corresponding format is respected.

Level	Name	Format	Description
1	#USER-FIELDS		
2	#USER-FIELD-A	A11/1:10	Alphanumeric user-fields. Field-number: 1 - 10
2	#USER-FIELD-P	P11/1:10	Packed user-fields. Field-number: 11 - 20
1	#RSP	N3	Response code.
1	#MSG	A79	Message (not currently used)

Figure 6-2: ASFUEXIT Output Parameters

The input field "#FIELD-NUMBER" indicates why the user-exit has been called. If the field has the value "0", it has been called immediately before ASF stores the data record. All fields of the ASF DATA record are already supplied with their final values, except the user-fields ("USER-FIELDS"),which are still empty. When the user-exit returns control to ASF then, if the response code is set to "0", all user-fields in the DATA record will be overwritten by the corresponding user-fields from the output parameters ("#USER-FIELDS"). If the response code is not equal to "0", the record will not be stored.

If the field "#FIELD-NUMBER" has a value greater then "0", the user-exit has been called during the evaluation. All fields of the ASF DATA record including the user-fields ("USER-FIELDS") are filled with their original stored values. The value of the field "#FIELD-NUMBER" indicates, which of the user-fields ASF is currently evaluating. The field numbers from 1 to 10 point to the alphanumeric fields; the field numbers from 11 to 20 point to the numeric fields. When the user-exit returns control to ASF then, if the response code is set to "0", the returned user-field is used for the evaluation. If the response code is greater than "0", the original user-field from the ASF DATA record is used.

The following table shows which field is used for the evaluation for response code equal to "0":

#FIELD-NUMBER	Field Evaluated
1	#USER-FIELD-A(1)
2	#USER-FIELD-A(2)
...	...
10	#USER-FIELD-A(10)
11	#USER-FIELD-P(1)
12	#USER-FIELD-P(2)
...	...
20	#USER-FIELD-P(10)

Figure 6-3: ASF Virtual Fields

Note that, for an evaluation, only 10 digits of a packed user-field are displayed, because one position is reserved for the sign.

In any case, at the store as well as at the evaluation the ASF DATA record consists of three types of data:

- Database-related data

- File-related data

- Data not related to database/file

The ASF DATA record always contains the third type of data. For example, the technical ASF fields and the user-defined fields are of this type. Additionally to these fields, the database ID and the database name are always given. For the other fields, the field "FCB-FNR" indicates whether they are filled or not. If the FCB-FNR is equal to "0", then the database-related data is given, otherwise the file-related data. Note also that for evaluations of type 1 – 4, the database-related data, for evaluations of type 5 – 8, the file-related data is used, and the third type is used in all evaluations.

The ASF User-Exit "ASFUEXNA"

The ASF user-exit "ASFUEXNA" is a NATURAL subprogram which is delivered as source and object module on the ASF library. ASF always expects to find the user-exit, otherwise it fails. If desired, you can edit the source program and replace the object module with your own code.

The ASF user-exit "ASFUEXNA" defines the names of the user-fields. The delivered program uses the names "USER-FIELD-A(01)" to "USER-FIELD-A(10)" for the alphanumeric fields and "USER-FIELD-P(01)" to "USER-FIELD(10)" for the packed fields. You can edit the user-exit and overwrite the INIT-values of the #NAME variable in the DEFINE DATA area. The specified names are subsequently used when you create an evaluation profile and in every evaluation output.

It is recommended that you use only uppercase characters for the names. The reason for this is that when you specify a field name at the evaluation profile maintenance, all characters are translated into upper case, and a field containing lower case characters would not be found.

Additionally you must not use a field name which is already used by ASF. The names of the ASF fields are outlined in the appendix of the *ASF Examples Manual*.

Example

We want to create a real ASF field which contains a time-dependent value returned by the external subprogram "ANYPROG". This program expects as input a date and a time, and returns as output a packed field of length 11.

Additionally we want to create a virtual field, which contains the sum of the commands in the threads 100 to 199.

First we edit the NATURAL subprogram "ASFUEXNA" and define names for both fields. In the DEFINE DATA area, we replace the lines

```
(11)  <'USER-FIELD-P(01)'>
(12)  <'USER-FIELD-P(02)'>
```

with the lines

```
(11)  <'SPECIAL VALUE   '>
(12)  <'THREAD 100 - 199'>
```

We add the following lines to the LOCAL DATA area of "ASFUEXIT"

```
1 #DATE (A10)
1 #TIME (A8)
```

Then we replace the executable part of the subprogram "ASFUEXIT" with the following:

```
  IF #FIELD-NUMBER = 0            /* before store
*
* Default: Initialize the user fields
*
   FOR #I = 1 TO 10
     MOVE ' ' TO #USER-FIELD-A (#I)
     MOVE  0  TO #USER-FIELD-P (#I)
   END-FOR
*
* Define special field
*
   MOVE EDITED TIME (EM=DD.MM.YYYY) TO #DATUM
   MOVE EDITED TIME (EM=HH:II:SS)   TO #TIME
   CALL 'ANYPROG' #DATE #TIME #USER-FIELD-P(1)
*
  ELSE          /* before evaluation
```

165

```
*
* Default: Move input field to output field
*
    IF #FIELD-NUMBER <= 10          /* alpha field
      #I := #FIELD-NUMBER
      MOVE USER-FIELD-A (#I) TO #USER-FIELD-A (#I)
    ELSE                            /* numeric field
      #I := #FIELD-NUMBER - 10
      MOVE USER-FIELD-P (#I) TO #USER-FIELD-P (#I)
    END-IF
  END-IF
*
* Define virtual field for threads 100 - 199
*
  IF #FIELD-NUMBER = 12
    RESET #USER-FIELD-P (2)
    FOR #I = 100 TO 125            /* thread 100 - 125
      ADD THREAD-NR-CMDS-1 (#I) to #USER-FIELD-P (2)
    END-FOR
    FOR #I = 1 TO 74              /* thread 126 - 199
      ADD THREAD-NR-CMDS-2 (#I) to #USER-FIELD-P (2)
    END-FOR
  END-IF
*
* The store is performed, if #RSP=0.
* The value is used for evaluation, if #RSP=0.
*
  RESET #RSP #MSG                     /* reset response code and message
*
END
```

After we have cataloged both user exits, we start the ASF application. In the Main Menu, we select the code "E" (Evaluation Profile Administration) and then "A" or "M" to add a new Evaluation Profile or to modify an existing Evaluation Profile.

In the "Profile Element: Accumulation" screen, we press the PF5 key to display the "Active help: Select groups" screen. We mark the group "User defined fields" with "X". The "Active help: Select fields" screen is displayed. Here we see the field names that we have specified in the ASFUEXNA subprogram. We select the fields 'SPECIAL VALUE' and 'THREAD 100 – 199' and leave the active help with PF6.

When we run this evaluation, the 'SPECIAL VALUE' is supplied for all records that have been stored since we modified the user-exit. The (virtual) field 'THREAD 100 – 199' is displayed for all records, even if they were stored before the user-exit modification.

INDEX

P

Passive help, 27
PC, downloading to, 23
predefined evaluations, 38, 52
predefined reports, 52
printer, output to, 23
printer line length, in user profile, 105
printer name, in user profile, 105
printer output, 105
PROCESS HELP, direct command, 30
PROFILE, direct command, 30
PROFILE STANDARD, direct command, 31

R

relative date format, 33
reordering fields, 80, 87, 89

S

screen, output to, 23
scrolling
    horizontal and vertical, 24
    on third axis, 26

SELECT, direct command, 31
separating character, in user profile, 104
statistical functions, 83
stay after save, in user profile, 104
STORE, direct command, 31
Store Nucleus Records, selection, 38
Store Profile, 3, 4
Store Profile Administration, selection, 39
Store Program, 3
Store Trend Records, selection, 38
Store Types, 3, 66

T

TRACE, direct command, 31
Trend Evaluation, 4
TRIG PROG, direct command, 31

U

units of measurement, 86
USE PROG, direct command, 31
User Maintenance, selection, 39
User-defined field, 161
User-exit, 161
Utilities, selection, 39

V

VERSION, direct command, 32
Virtual field, 161

W

Workplan, 38, 52
    automatic selection, 106
    selection in Direct Command Line, 31