

Adabas Statistics Facility

Adabas Statistics Facility (ASF) Version 8.1.1 User's Guide

Version 8.1.1

March 2013

Adabas Statistics Facility

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Adabas Statistics Facility (ASF) Version 8.1.1 User's Guide

The following topics are covered:

ASF Overview

Evaluation Reports

Menu System

ASF Utilities and Services

Application Programming Interface (API)

User Fields and User Functions

1 ASF Overview

■ Introduction	2
■ ASF Components	4

This chapter covers the following topics:

Introduction

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 or the Adabas Manager. 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 environment which opens up a new dimension in database monitoring:

- ASF automates the process of database monitoring.
- ASF has no impact on the overall database performance.
- ASF is the long-term Adabas monitor for production environments.

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, the PC or a hardcopy printer. The programs are called Evaluation Programs, and the reports are called Evaluation Reports.

In the evaluation programs, the DBA can

- evaluate the collected data for planning and tuning purpose;
- compare multiple databases in one report;
- report critical database situations (the report can be send as an e-mail);
- extrapolate current trends;
- evaluate extrapolated values; and
- calculate the time when a critical value will be reached.

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.

The primary data collection (counting of commands, etc.) is done in Adabas for ADAREP, AOS and the End Nucleus Statistics anyway. There is no special data collection for ASF in Adabas. Therefore ASF has no impact on the overall database performance!

Database information can be collected with the ASF Store Program 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.

ASF Components

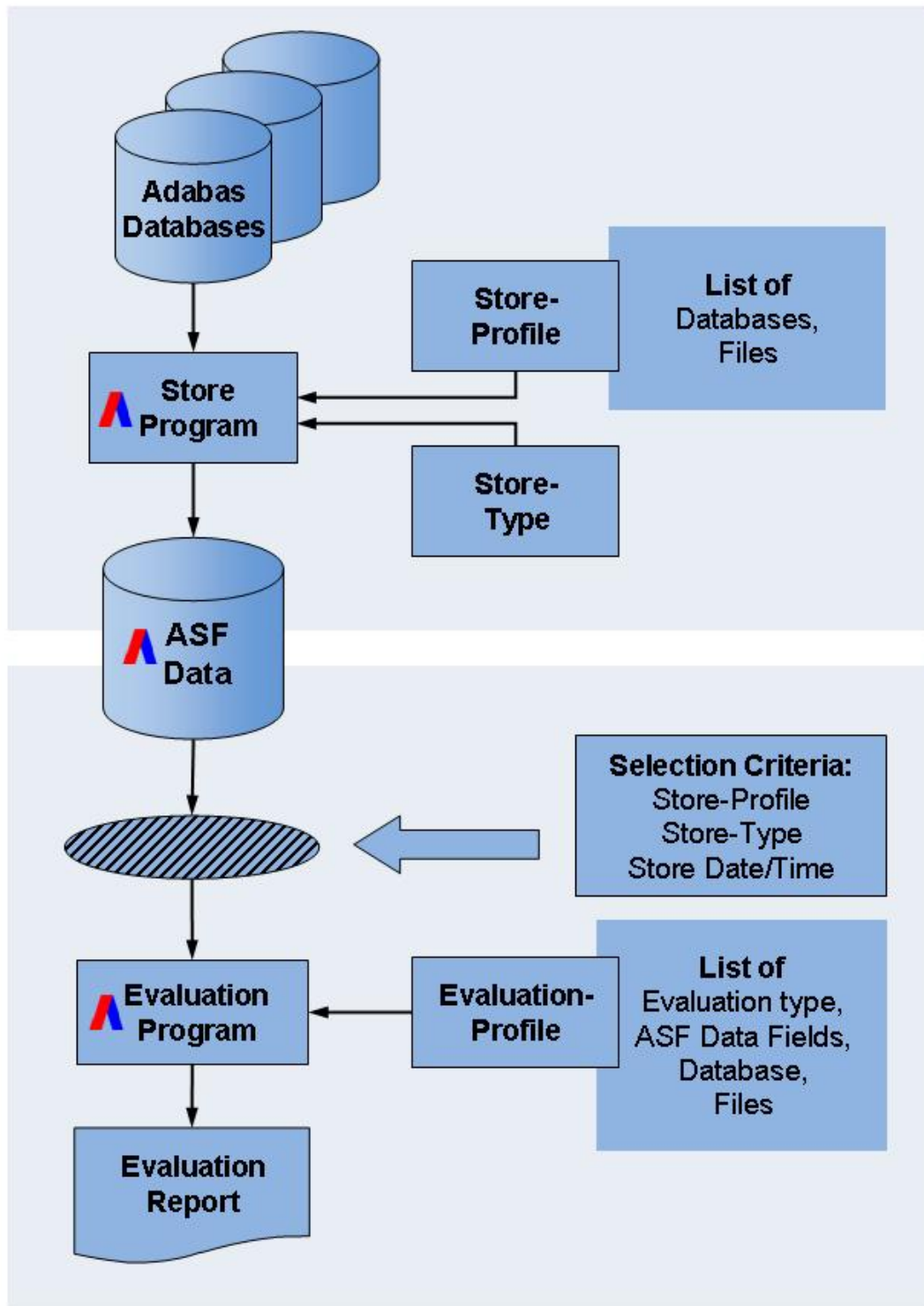


Figure 1-1: The ASF Components

This section 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 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 defined by the DBA using the ASF Online Menu System. In an Evaluation Profile, the DBA specifies the following:

- The Evaluation Type, which is a value in the range 1-10. See the section [Evaluation Reports](#) for details.
- One or more of the available ASF data fields (database monitoring criteria) which are to be analyzed in the Evaluation Report.
- The databases and files to be evaluated which is normally a subset of the databases and files defined in a Store Profile. If no database is specified in the Evaluation Profile, ASF takes all databases and files for which data is stored by the Store Program.
- The units of measurement of the ASF data fields.
- Statistical operations (“accumulation”) to be performed on the report values for General Evaluations.
- Upper and lower values which represent “critical” levels for the data fields for Critical Reports and Critical Trend Reports.

When starting an Evaluation Report, the DBA specifies the name of the Evaluation Profile to be used.

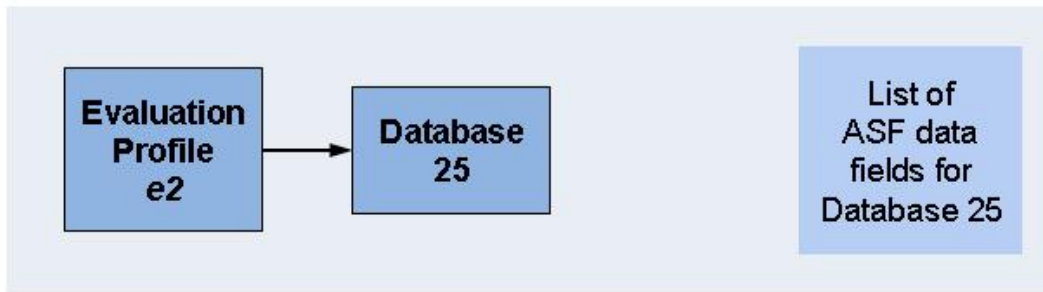
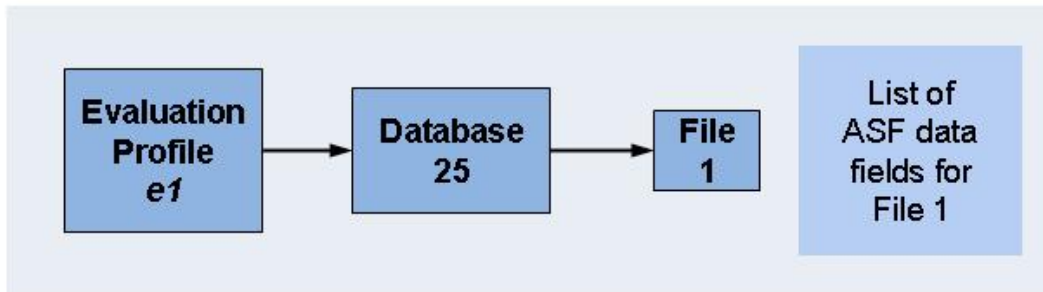
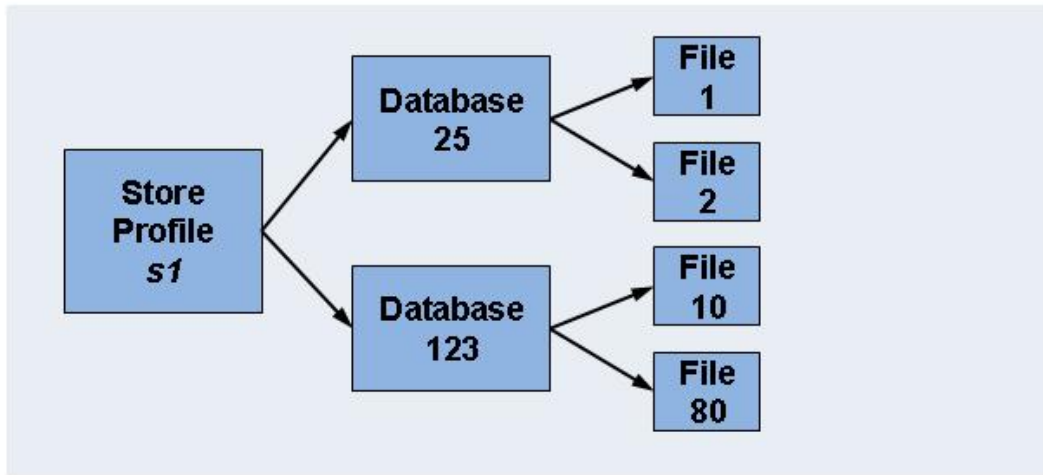


Figure 1-2: Store Profiles, Evaluation Profiles

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 *s1*, 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 *e1* specifies a subset of the data specified by the Store Profile *s1*, namely file 1 in database 25. The Evaluation Profile *e2* specifies a subset of the data specified by the Store Profile *s1*, namely database 25. The Evaluation Profile *e3* does not specify any database. Therefore all databases and files stored are evaluated, i.e. files 1 and 2 in database 25, and files 10 and 80 in database 123.

2 Evaluation Reports

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This chapter covers the following topics:

Introduction

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 1-4 indicates that the report shows database-related data fields only, whereas the text “(FI)” of Evaluation Type 5-8 indicates that the report shows file-related data fields only.

Type	Title	Horizontal Axis	Vertical Axis	Third Axis
1	One DB at point in time (DB)	Times	Fields	DBs
2	DBs in time frame (DB)	DBs	Fields	(cumulated within a time frame)
3	DBs at point in time (DB)	DBs	Fields	Times
4	One field at point in time (DB)	DBs	Times	Fields
5	One DB at point in time (FI)	Times	Fields	Files
6	DBs in time frame (FI)	Files	Fields	(cumulated within a time frame)
7	DBs at point in time (FI)	Files	Fields	Times
8	One field at point in time (FI)	Files	Times	Fields
9	Critical report: List of fields, databases and files	DBs, files, fields, the value reached and the defined limit value.		

Type	Title	Horizontal Axis	Vertical Axis	Third Axis
10	Critical trend: List of fields, databases and files	DBs, files and fields,	the limit value and the date when the limit will be reached.	

Figure 2-1: Overview of the Evaluation Types

General evaluations (type 1 to 8) can display real as well as trend values. A critical report (type 9) displays real values only. A critical trend extrapolates real values into future trends and analysis both.

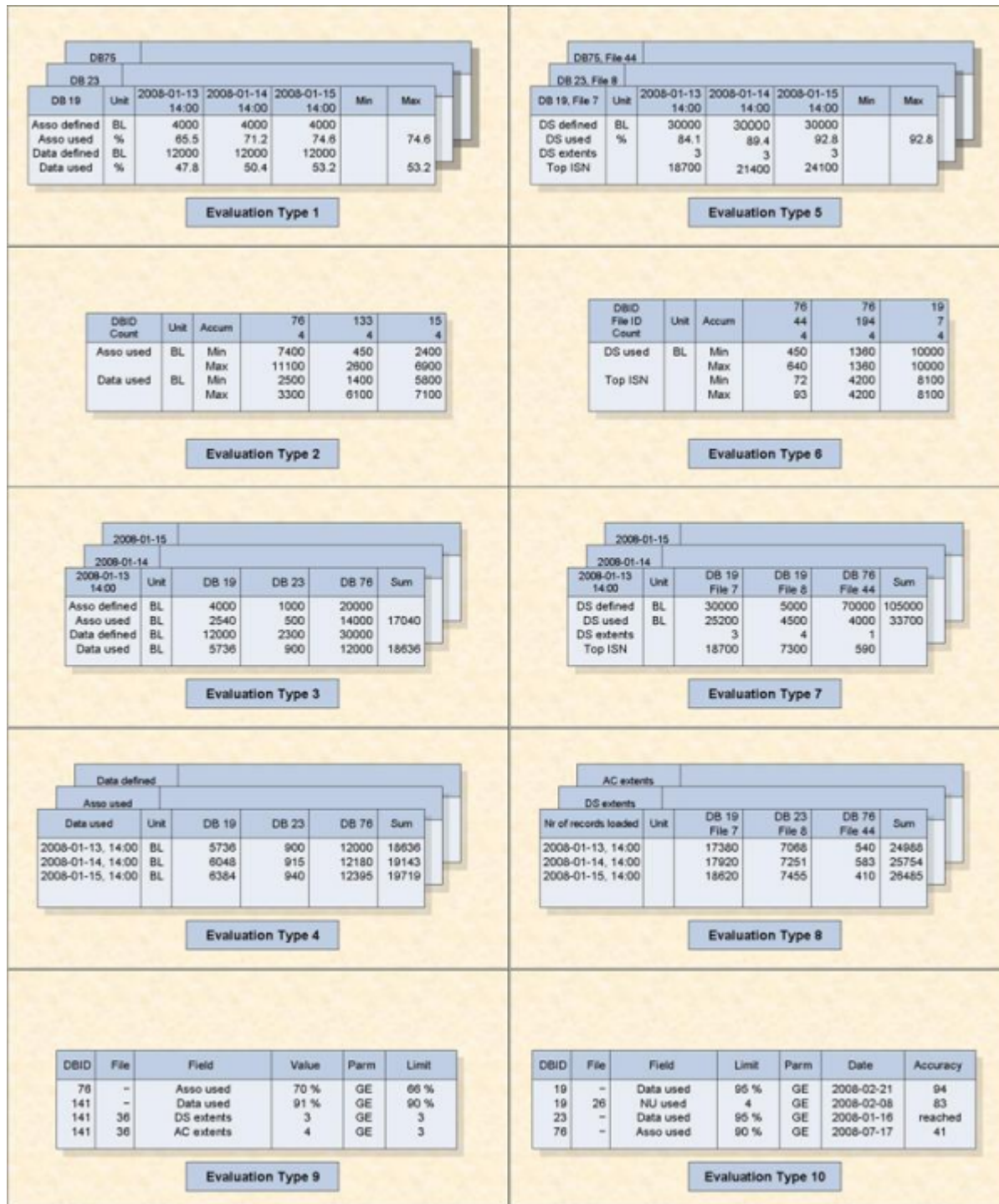


Figure 2-2: Evaluation Type Report Format

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.

ASF Evaluation Types

This section covers the following topics:

- Evaluation Type 1: One DB at point in time (DB) V:Fields H:Times (external accumulation)
- Evaluation Type 2: DBases in time frame(DB) V:Fields H:Databases (internal accumulation)
- Evaluation Type 3: DBases at point in time (DB) V:Fields H:Databases (external accumulation)
- Evaluation Type 4: One field at point in time (DB) V:Times H:Databases (external accumulation)
- Evaluation Type 5: One DB at point in time (FI) V:Fields H:Times (external accumulation)
- Evaluation Type 6: DBases in time frame (FI) V:Fields H:Databases (internal accumulation)
- Evaluation Type 7: DBases at point in time (FI) V:Fields H:Databases (external accumulation)
- Evaluation Type 8: One field at point in time (FI) V:Times H:Databases (external accumulation)
- Evaluation Type 9: Critical report: List of fields, databases and files
- Evaluation Type 10: Critical trend: List of fields, databases and files

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		Unit	2008-01-13 14:00	2008-01-14 14:00	2008-01-15 14:00	Min	Max
Asso defined	BL		4000	4000	4000		74.6
Asso used	%		65.5	71.2	74.6		
Data defined	BL		12000	12000	12000		
Data used	%		47.8	50.4	53.2		53.2

Evaluation Type 1

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 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.

DBID Count	Unit	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

Figure 2-4: Several databases accumulated within a time frame (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 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.

2008-01-13 14:00	Unit	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

Figure 2-5: 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 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	Unit	DB 19	DB 23	DB 76	Sum
2008-01-13, 14:00	BL	5736	900	12000	18636
2008-01-14, 14:00	BL	6048	915	12180	19143
2008-01-15, 14:00	BL	6384	940	12395	19719

Evaluation Type 4

Figure 2-6: 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 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		2008-01-13 14:00	2008-01-14 14:00	2008-01-15 14:00	Min	Max
DS defined	BL	30000	30000	30000		
DS used	%	84.1	89.4	92.8		92.8
DS extents		3	3	3		
Top ISN		18700	21400	24100		

Evaluation Type 5

Figure 2-7: 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 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.

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

Evaluation Type 6

Figure 2-8: Several files accumulated within a time frame (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 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.

		2008-01-15			
		2008-01-14			
2008-01-13 14:00	Unit	DB 19 File 7	DB 19 File 8	DB 76 File 44	Sum
DS defined	BL	30000	5000	70000	105000
DS used	BL	25200	4500	4000	33700
DS extents		3	4	1	
Top ISN		18700	7300	590	

Evaluation Type 7

Figure 2-9: 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 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.

AC extents					
DS extents					
Nr of records loaded	Unit	DB 19 File 7	DB 23 File 8	DB 76 File 44	Sum
2008-01-13, 14:00		17380	7068	540	24988
2008-01-14, 14:00		17920	7251	583	25754
2008-01-15, 14:00		18620	7455	410	26485

Evaluation Type 8

Figure 2-10: One field in various files 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.

DBID	File	Field	Value	Parm	Limit
76	-	Asso used	70 %	GE	66 %
141	-	Data used	91 %	GE	90 %
141	36	DS extents	3	GE	3
141	36	AC extents	4	GE	3

Evaluation Type 9

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.

DBID	File	Field	Limit	Parm	Date	Accuracy
19	-	Data used	95 %	GE	2008-02-21	94
19	26	NU used	4	GE	2008-02-08	83
23	-	Data used	95 %	GE	2008-01-16	reached
76	-	Asso used	90 %	GE	2008-07-17	41

Evaluation Type 10

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.

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).

```

15:23:57      *** A D A B A S  Statistics Facility ***      2008-02-22
USERID      DBID:   16    DB-NAME:  DB016-ALSBACH  1/1      MEV15001

STORE-DATE   ! UNIT!  1992-03-09 !  1992-03-16 !  1992-03-23 !  1992-03-30
STORE-TIME   !      !          17:34 !          23:00 !          23:00 !          22:00
-----+-----+-----+-----+-----+-----+-----
DB-NAME      !      ! DB016-ALSBA ! DB016-ALSBA ! DB016-ALSBA ! DB016-ALSBA
DATE NUC-START !      ! 1992-03-09 ! 1992-03-16 ! 1992-03-23 ! 1992-03-30
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
DATA DEFINED ! CYL !   1,164 !   1,164 !   1,164 !   1,164
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:

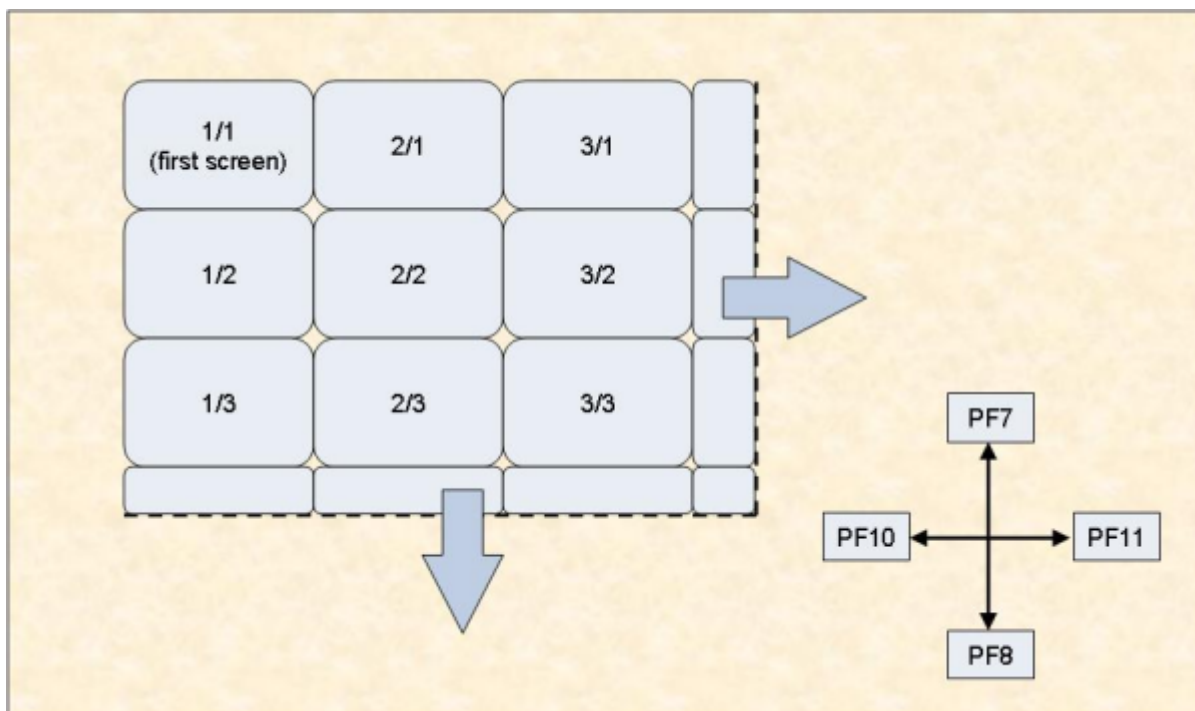



Figure 2-14: Report Page Layout

 **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.

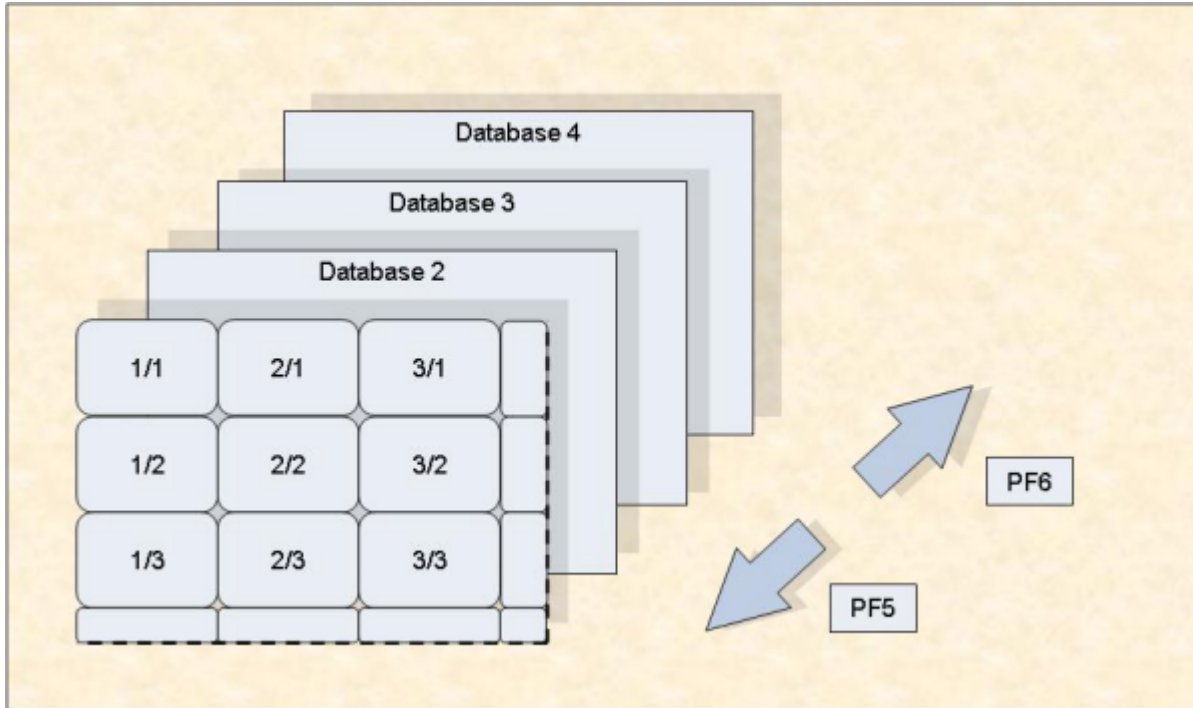


Figure 2-15: Scrolling on the third axis (example for Evaluation Type 1)


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

Figure 2-1 in the *ASF Examples* documentation 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.

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-File 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.

When you download data to the PC, you can specify in the Entire Connection pop-up window the path, name, extension and type of the file. The full (F) and standard (X) download can use any available file type. The CSV (C) download should use the extension “.csv” and leave the file type unspecified.

When you run a Critical Report and the output “Printer” has been selected, ASF checks whether a Con-nect profile has been defined. In this case, ASF sends the report to the specified cabinets and to the printer.

If you run a Critical Report and the PC-File is marked with “E”, the output is written to Workfile 1 in SMTP format and can be sent as e-mail. For more information see the section [Critical Report](#).

Batch Output

In batch, ASF treats the output media “Screen” in the same way like “Printer”. In both cases the output is routed into the Natural print file CMPRT01. If you specify “Screen” as output media for a predefined evaluation, you can test the evaluation online and run it later in batch without any modification.

If an ASF batch job specifies 'PC-File' as output medium, the output is routed into the Natural Workfile 7 (CMWKF07). When the PC-File is marked with “E” for a Critical Report, the output is written to Workfile 1 in SMTP format as described above.

Download to a PC-File

In the General Evaluation, you can mark the field ‘PC-File’ with “X”, “Y”, “C”, or “F” to download data to a PC-file.

PC-File	Format	Layout	Description
X	Standard	2D	Any PC spreadsheet format supported by Entire Connection can be selected. This is the default.
Y	Standard	2D	Same as PC-File=“X” but without header lines.
C	CSV	2D	The data is written as comma-separated-values (CSV).
F	Full	3D	The data is downloaded page by page similar to the screen output. Accumulation values are downloaded.

The 3-dimensional (3D) layout looks like the screen output. The data is processed page by page and downloaded to the PC. The format depends on the evaluation type. The 3rd dimension is added to the bottom of the list. Accumulation values are downloaded as well.

When you mark the PC-File with “X”, “Y” or “C”, the data is downloaded in a 2-dimensional (2D) table. The first column contains the date and time, the second the DBID, and the third the file number (for evaluations 5-8). The other columns contain the data of the ASF data fields. Note that at most 201 columns can be downloaded. The format looks the same for all evaluation types 1 – 8.

Time	DBID	File	DS defined (BL)	DS used (BL)	DS extents	Top ISN
2008-01-13, 14:00	19	7	30000	25200	2	18700
2008-01-13, 14:00	19	26	4000	820	1	613
2008-01-13, 14:00	76	44	70000	4000	1	8200
2008-01-14, 14:00	19	7	30000	27300	2	20400

[Download Format](#)

Figure 2-16: 2D-Layout of standard and CSV download

The 2D layout is much better applicable for evaluations with spreadsheet tools like Excel because each column contains data of one ASF field only. By default the data is sorted by the time. For one point in time, the DBID and files are listed in the sequence of the evaluation profile. The downloaded data can easily be sorted in another sequence, e.g. by specifying DBID, FILE-ID and Time as sort keys to analyze the values belonging to one file.

The 2D layout does not download accumulation values like MIN/MAX. This information is only downloaded with the Full format.

When the CSV download format is selected, ASF generates comma-separated-values. It uses the semicolon as separator. Empty columns and leading spaces are not downloaded. The latter has the advantage that downloaded numeric values are recognized by Excel as numeric which eases the further processing. With the CSV download, the database and file names are downloaded in full length. Critical Reports and Critical Trends can also be downloaded in CSV format.

The download in the Standard format is in general faster than the Full format. Moreover if your target is an Excel file, the CSV format is considerably faster than the Standard format. Therefore it is recommended to use the CSV format if possible. A download performance test is presented in the Planning Guide.

If you want to process the downloaded data with spreadsheet tools like Excel, you should take care that the “Decimal character” setting in your User Profile is the same as in that tool. See the section [User Profile Maintenance](#) for information on how to modify your User Profile.

3 Menu System

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This chapter covers the following topics:

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.
- Perform ASF services.

Starting ASF

To start ASF, log on to the Natural library SYSASF and enter the command "MENU". The ASF Logo screen is displayed first.

```

10:25:44      *** A D A B A S Statistics Facility ***      2008-01-22
USERID              V e r s i o n   8.1.1              MLOG0001

                AAAAAAAAAAAAAA      SSSSSSSSSS      FFFFFFFFFFFFFFFF
                AAAAAAAAAAAAAA      SSSSSSSSSSSS      FFFFFFFFFFFFFFFF
                AAAA      AAAA      SSSS      SSSS      FFFF
                AAAA      AAAA      SSSS      SSSS      FFFF
                AAAA      AAAA      SSSSS      SSSS      FFFF
                AAAAAAAAAAAAAA      SSSSS      SSSSS      FFFFFFFFFF
                AAAAAAAAAAAAAA      SSSS      SSSS      FFFFFFFFFF
                AAAA      AAAA      SSSS      SSSSS      FFFF
                AAAA      AAAA      SSSSSSSSSSSS      FFFF
                AAAA      AAAA      SSSSSSSSSS      FFFF

                ADABAS      STATISTICS      FACILITY

                A P R O D U C T   O F   S O F T W A R E   A G

                ASF Data :      1424 / 14
                ASF Profiles : 1424 / 15

```

Figure 3-1: ASF Logo Screen

The ASF Logo screen shows the ASF version and the file numbers of the ASF system files. You can display the ASF Logo screen from any ASF screen by typing the command `ASFLOGO` in the ASF Direct Command Line. The ASF Logo screen is not displayed when you start ASF from the Adabas Online Services (AOS).



Note: If the ASF systems files are not correctly shown in the ASF Logo screen, verify the Natural LFILE settings (NFILE parameter). As a temporary solution, you can set the logical file numbers of the ASF system files with the ASF direct command “LFILE”.

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.

At the bottom of each passive help screen, ASF informs you which part of the help text is currently displayed on the screen. The two numbers show the line number of the first line of the screen and the total number of lines of the help text.

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.

Enhanced Profile Selection

If you mark a field in the profile selection list or in the active help list with a valid code of the calling mask, the corresponding function is performed. E.g. if you select the function "S" in the "Store profile administration", the "Select store profile from list" screen is displayed. If you mark a profile in this list with an "M", the corresponding profile is edited for modification.

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 will 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.

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 [Main Menu](#) later in this section 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
ASFLOGO	Display the ASF initial Logo screen.
ASFUEX	Display the ASF User Exit Maintenance Menu. The various options available for the ASFUEX direct command are described in the section User Functions.
ASF $vorsnn$	Start a program related to correction ASF $vorsnn$. Whether there is such a program and how to use it, is described in the information delivered with the corresponding correction.
DELETE HELP	Delete the old ASF help texts while performing an upgrade installation.
FETCH $progname$	Call the external program $progname$ via FETCH. Same as "TRIG PROG $progname$ ".
FETCH RETURN $progname$	Call the external program $progname$ via FETCH RETURN. Same as "USE PROG $progname$ ".
FIN	Exit from the NATURAL environment.
FSTORE $profilename$ $storetype dbid$	Run the Store Program but store only database records; any file specified in the Store Profile is ignored. The Store Program is 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.
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 section ASF System File Maintenance 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.
PROFILE	Select the screen "Define User Profile", which is used to modify your working environment for the current session.
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.

Direct Command	Purpose
PROFILE STANDARD	Select the screen "Define User Profile" in a special mode which defines the initial working environment for new users.
RETURN	Exit from the NATURAL environment and pass a return code.
RETURN RESET	Reset the return code (no exit).
RETURN STATE	Write out the current return code (no exit).
RDC	Display the SYSRDC Main Menu.
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 <i>nn</i>	Select the predefined evaluation <i>nn</i> from the list of predefined evaluations in the Workplan.
STORE <i>profilename storetype dbid</i>	Run the Store Program, using the named Store Profile and Store Type. The third parameter (<i>dbid</i>) 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	Display the Trace Maintenance Menu. The various options available for the TRACE direct command are described in the section Tracing ASF .
TRIG PROG <i>progrname</i>	Call the external program <i>progrname</i> via FETCH.
USE PROG <i>progrname</i>	Call the external program <i>progrname</i> via FETCH RETURN.
VERSION	Display the ASF version and the number of the correction last applied.
* comment	Input is ignored by ASF. When a direct command starts with an '*' (asterisk), it is treated as comment. This is helpful when writing batch input streams. When the SYSRDC trace is active, the comment line is written to the trace.



Note: Whenever a direct command is entered, ASF writes a user entry into the SYSRDC trace containing the direct command.

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 below. The following sample shows an extract from a JCL job to run the Store Program in batch mode:

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

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 is included in the JCL job.

Setting a Batch Return Code

The direct command RETURN terminates the ASF session (like “FIN” or “LOGOFF”) and sets a return code. The return code is set to the following values:

Return Code	Reason
0	OK
2	A Critical Report has found critical values.
4	A STORE has stored some but not all DB's/files requested.
8	A STORE has stored no DB/file or the STORE failed with any ASF error (like “Profile not found”).
12	A Natural error occurred.

The following sample shows an extract from a JCL job to run the Store Program in batch mode and to set a return code:

```
,STORE PROFILNAME STORETYP DBID  
,RETURN
```

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 Nov 23, 2007 as one of the following


```
2007-11-23 (US format)
23.11.2007 (European format)
```

depending on the current default format for absolute dates. In general, ASF is generous when interpreting dates. If it finds a date which does not have the standard format, it translates it into the standard as soon as you press ENTER.

You can specify 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 2007, the values from 00 to 56 are interpreted as 2000 to 2056 and the values from 57 to 99 are interpreted as 1957 to 1999.

```
07-11-23 (US format)
23.11.07 (European format)
```

The separators can be omitted if the year is specified with 4 or 2 digits and the day and month with 2 digits each:

```
20071123 (US format, 4-digit year)
231107 (European format, 2-digit year)
```

A date can always be specified as "DD.MM.YYYY" or as "YYYY-MM-DD" regardless of the current selected default date format if all digits are specified and the corresponding separator character is used. A 2-digit year is also possible. ASF translates the date into the current selected default date format. E.g. a predefined evaluation was saved with the date

```
23.11.93 (European format, 2 digit year)
```

If the current date format is YYYY-MM-DD (US), ASF translates the date as soon as you press ENTER into

```
1993-11-23 (standard US format, 4 digit year)
```

In **relative format**, you specify the date as a number of days, weeks or months relative to the current date. A relative count from first or last record is also possible. The valid formats are described in the following table:

Format	Description
$\pm nnnD$	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 $\pm nnnD$, but ASF sets the corresponding input time field in the menu automatically to the current time of day. Example:

Format	Description
	+1 means: Tomorrow, at the current time.
$\pm nnnWd$	<p>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.</p> <p>Example:</p> <p>+0W2 means: Tuesday of the current week.</p>
$\pm nnMdd$	<p>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.</p> <p>Examples:</p> <p>+1M15 means: the 15th day of next month.</p> <p>-1M3 means: the 3rd day of the previous month.</p>
$\pm nnnnR$	<p>The date of the $nnnn$-th record (time-stamps) counted from the first record for '+', or from the last record for '-'. '± 0' is interpreted as '± 1', i.e. first or last record, respectively. The valid range for $nnnn$ is 0-9999.</p> <p>Example:</p> <p>-1R means: last record.</p> <p>+3R means: 3rd record.</p>



Note: If you use the format $\pm nnn$ 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.

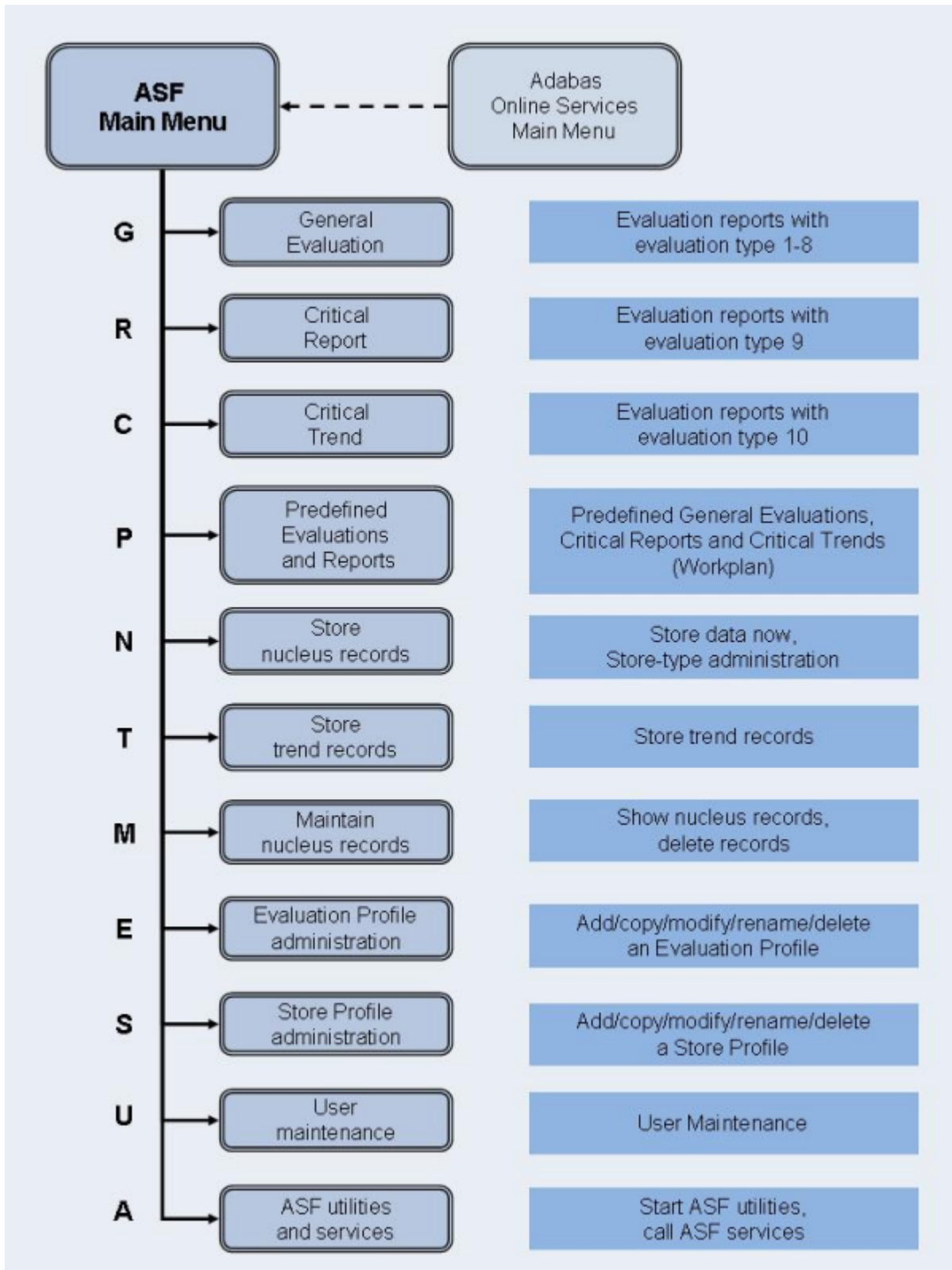


Figure 3-2: ASF Main Menu Functions

Main Menu

```

10:42:29      *** A D A B A S Statistics Facility ***      2008-01-22
USERID              - 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 utilities and services
      ./?    Terminate / Help
-----
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 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 past and 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, to store data and 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 Step 5: Setting up User Security in the ASF Installation documentation for details.*

Code A: ASF utilities and services

This option selects the screen for the ASF Utilities and Services.

Input field description

Enter code:

Enter the code of the service you wish to activate.

General Evaluation

```

10:55:38          *** A D A B A S Statistics Facility ***          2008-01-22
USERID          - 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 : __ Nucleus records
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. These reports show the past and current status of databases and files, generated future trend values and the results of statistical operations. They do not include information concerning critical values.

Screen selection

This menu is reached when you select the service code "G" in the main menu. In this case, the PF6 key is labeled "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 labeled "MODnn", where nn is the number of the predefined evaluation. See the section [Workplan: Predefined Evaluations and Reports](#) for more information.

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](#).



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](#).

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.

You can mark PC-File with an “X” for standard, “Y” for standard without header lines, “C” for CSV or “F” for a full download. See the section [Download Format](#) for more details.

Critical Report

```

11:20:11          *** A D A B A S Statistics Facility ***          2008-01-22
USERID          - 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. A Critical Report lists the data fields which, according to the most recently stored data, have reached or exceeded their critical values.

Screen selection

This screen is reached by selecting the service code “R” in the main menu. In this case, the PF6 key is labeled “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 labeled “MODnn” instead of “Capt”, where nn is the number of the predefined evaluation. See the section [Workplan: Predefined Evaluations and Reports](#) for more information.

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.

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 PC-File with an "X", the report is downloaded in standard format to the PC-File. If you mark PC-File with "C", the report is downloaded as comma-separated-values (CSV). If you mark PC-File with "E", the output is written in SMTP format to Workfile 1 which can be used for sending e-mails.



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

```

13:33:08          *** A D A B A S  STATISTICS FACILITY ***          2008-01-22
USERID          Critical report based on: 1992-04-13 23:12          MACR0001
  Evaluation profile: PROD-LIMIT-YELL Store profile: TEST-DB-ALL Type: WE
                                                                < ALL >
  DB !   File ! Field          !           Value !Unit!Parm!           Limit !Unit
  ---+-----+-----+-----+-----+-----+-----+-----+-----+
  16 !       ! DATA USED      !           92.8 ! PC ! GE !           85 ! PC
    !   122 ! NI EXTENTS      !             3 !   ! GE !             3 !
  17 !       ! DATA USED      !           99.7 ! PC ! GE !           85 ! PC
    !   39 ! DS EXTENTS      !             3 !   ! GE !             3 !
    !   71 ! DS EXTENTS      !             3 !   ! GE !             3 !
  26 !       ! DATA USED      !           97.3 ! PC ! GE !           85 ! PC
    !   44 ! AC EXTENTS      !             3 !   ! GE !             3 !
    !  185 ! NI EXTENTS      !             5 !   ! GE !             3 !
    !       ! DS EXTENTS      !             4 !   ! GE !             3 !
    !       ! AC EXTENTS      !             3 !   ! GE !             3 !
  37 !       ! 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          -      +                               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.

Sending a Critical Report to Con-nect Cabinets

To send a Critical Report to Con-nect cabinets, perform the following steps:

- Verify that the Con-nect environment and the ASF interface to Con-nect are set up correctly. See the section Step 8: Setting up Con-nect in the *ASF Installation* documentation for details.
- Define a Con-nect profile (code "P" in the ASF Utilities and Services Menu). Specify at least one Cabinet as receiver. See the section [Define User Profile](#) for details.
- Define the Critical Report and write it to the screen as a test.

- Unselect the Output Medium “Screen” and select “Printer” instead but do not submit it.
- Capture the report as Predefined Report by pressing PF6. Specify the description of the new Predefined Report and save it. Remember the number of the Predefined Report.
- Set up a batch job calling the Predefined Report with the input statement

```
,SELECT nn
```

where *nn* is the number of the new Predefined Report. Take care that the job runs under the same user Id as the Con-nect profile.

- The report is send to the in-basket of the cabinets specified in the Con-nect profile. A copy is in the out-basket of the SYSASF cabinet and in the Natural print file of the job.

You can send a Critical report also online to Con-nect cabinets. In this case the copy is routed to the printer.

Sending a Critical Report as e-Mail

To send a Critical Report as e-mail, perform the following steps:

- Define an e-Mail profile (code “P” in the ASF Utilities and Services Menu). Specify the domain name, the e-mail addresses of the receiver(s) and sender and a standard text. See the section [User Profile Maintenance](#) for details.
- Define a Critical Report and write it to the screen as a test.
- Unselect the Output Medium “Screen” and mark “PC-File” with an “E” instead but do not submit it.
- Capture the report as Predefined Report by pressing PF6. Specify the description of the new Predefined Report and save it. Remember the number of the Predefined Report.
- Set up a batch job calling the Predefined Report with the input statement

```
,SELECT nn
```

where *nn* is the number of the new Predefined Report. Take care that the job runs under the same user Id as the e-Mail profile.

- Define Workfile 1 (CMWKF01) in the job. ASF writes the report into this work file in SMTP format.
- Add an SMPT step to the job. Use as input the Workfile 1 defined in the ASF step. The SMPT JCL for z/OS looks like (similar for other operating systems):

```
//MESSAGE EXEC PGM=IEBGENER
//SYSIN DD DUMMY
//SYSPRINT DD SYSOUT=X
//SYSUT2 DD SYSOUT=(B,SMTP),DEST=(domain)
//SYSUT1 DD DSN=ASF.WORK1,DISP=SHR
```

- The SMTP server sends the Critical Report as e-mail to all receivers specified in the e-Mail profile. Errors found by SMTP are reported to the 'From'-address which is also used as sender address of the e-mail.

Critical Trend Report

```
15:35:19          *** A D A B A S Statistics Facility ***          2008-01-22
USERID          - 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 labeled "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 labeled "MOD nn ", where nn is the number of the predefined evaluation. See the section [Workplan: Predefined Evaluations and Reports](#) for more information.

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](#).



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.

If you mark PC-File with an “X”, the report is downloaded in standard format to the PC-File. If you mark PC-File with “C”, the report is downloaded as comma-separated-values (CSV).

Description of Output

```
15:59:14          *** A D A B A S   STATISTICS FACILITY   ***          2008-01-22
USERID   Crit-trend-base: 1992-03-01 - 1992-04-15 limit: 1992-09-30 MACT0001
Evaluation profil: PROD-LIMIT-TREND Store profil: TEST-DB-ALL Type: WE wee
                                         < ALL >
 DB !  File !  Field          !          Limit !Unit!Parm! Date          ! Accur.
 ---+-----+-----+-----+-----+-----+-----+-----+-----+-----
 16 !  122 !  NI EXTENTS          !           5 !      ! GE ! 1992-04-14 !  n/a
      !      !  AC EXTENTS          !           5 !      ! GE ! 1992-04-15 !  n/a
 17 !      !  DATA USED          !          99 ! PC ! GE ! 1992-04-13 !  reache
 26 !      !  ASSO USED          !          99 ! PC ! GE ! 1992-04-29 !  91
      !      !  DATA USED          !          99 ! PC ! GE ! 1992-04-12 !  87
 27 !      !  DATA USED          !          99 ! PC ! GE ! 1992-09-16 !  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 January 22nd, is based on data stored between March 1st and April 15th, and that the trend was extrapolated to September 30th (the original delivered sample data is from 1992). 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.

For the file-extent related fields, the critical date is calculated in a special procedure using the Adabas formula for calculating the standard size of further extents. For these fields the accuracy cannot be calculated and is listed as "n/a".

Fields which have already reached the critical value with the last record of the base period are indicated in the "Accuracy" column as "reached".

When you download the report to the PC, an additional column "Last Base" lists the value of the last record of the base period.

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 4th ASF data field listed in Figure 3-8.

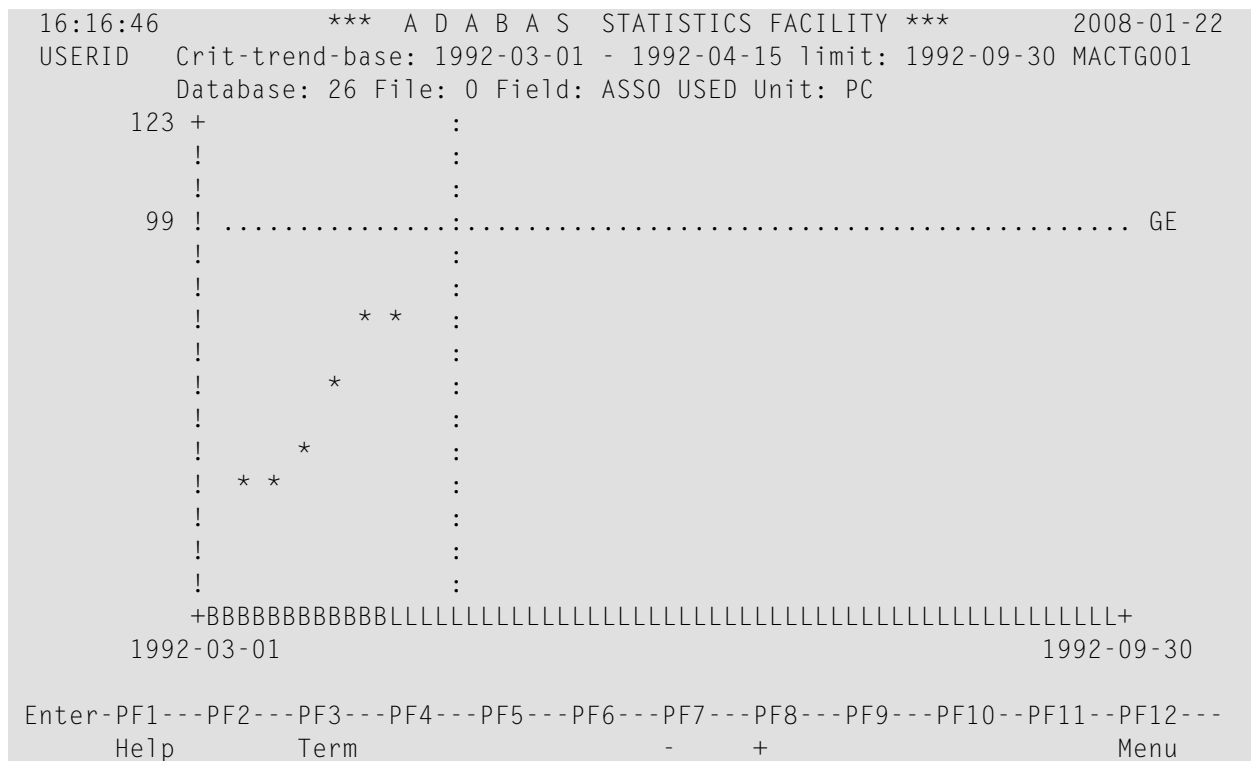


Figure 3-9: Sample graphical output for Critical Trend Report

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 labeled "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.

If you want to generate a similar graph on the PC, perform the following steps:

- Store trend records. Use the same times as in the critical trend reports as base period. The generate time should include the critical time reported by the Critical Trend.
- Run a General Evaluation. Use the same fields as in the Critical Trend. The time should include the base period as well as the generated future times. Origin must be set to "ALL".
- Download the General Evaluation to the PC and process the data with a spreadsheet tool like Excel.

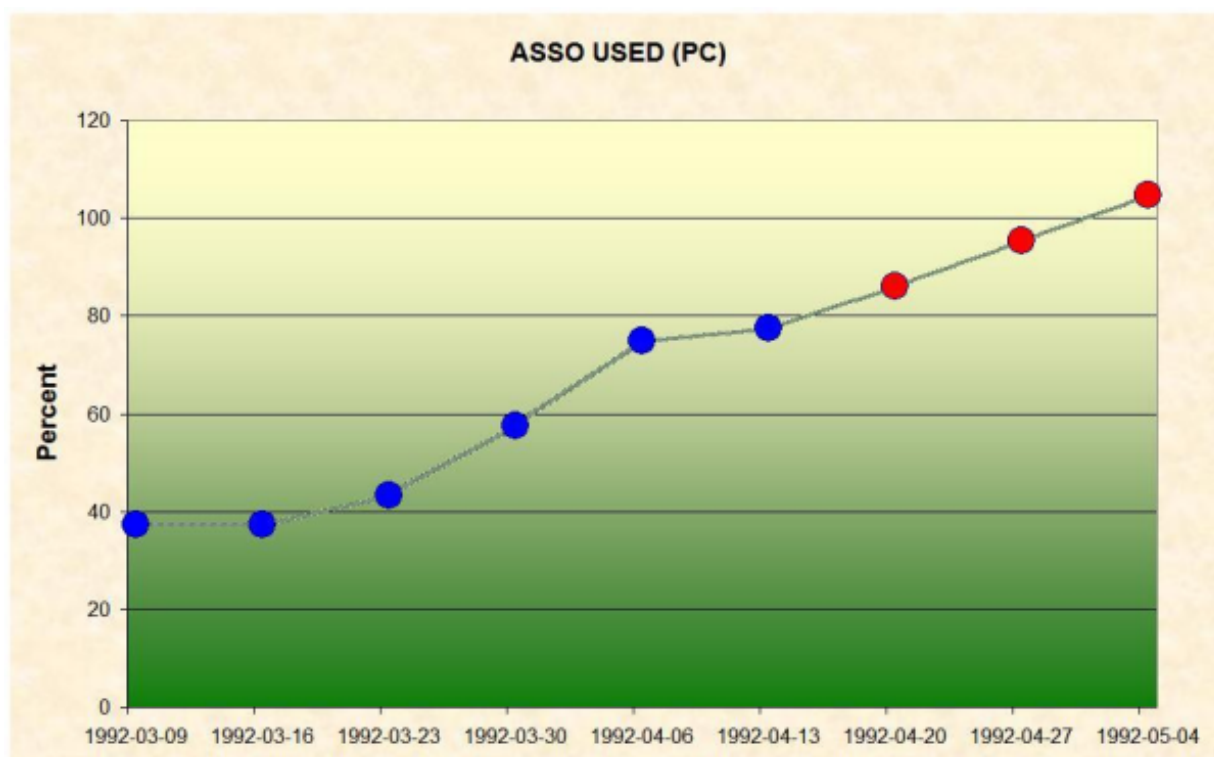


Figure 3-9a: Sample graphical output for Trend Data

In this graph the original nucleus values are indicated as blue points, the calculated trend values are red points. The critical 99 % will be reached in the last week of the diagram. A percentage

above 100 indicates that more space for the Associator (used) will be required than currently available (Associator defined).

Workplan: Predefined Evaluations and Reports

```

ASF330 'S'tart for evaluation or 'I'nfo,'M'odify,'D'elete,'*','.'
16:25:54          *** A D A B A S Statistics Facility ***          2008-01-22
USERID          - 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 or with the direct command

```
SELECT nn
```

where *nn* is the number of the predefined evaluation. The numbers of the predefined evaluations are listed in the first column of the Workplan.

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 sample Predefined Evaluations are listed in the section Supplied Predefined Evaluations in the *ASF Examples* documentation, the corresponding Evaluation Profiles are in the section Supplied Evaluation Profiles in the same documentation.

You can add your own predefined evaluations to this list (up to 96 predefined evaluations are allowed). You can also modify or 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.

A predefined evaluation can only be modified or deleted if the user is authorized to modify evaluation profiles.

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 labeled "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. You must confirm the deletion in a pop-up window.

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.

Function	Description
.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 number 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”, and then moved with “MX-Y”.

Store Nucleus Records

```

14:03:40      *** A D A B A S  Statistics Facility ***      2008-01-23
USERID        - 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                               Msg                               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, and then it 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 a 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. An overview of all predefined Store Types is provided in the section Supplied Store Types.

Start Nucleus (SN)

This Store Type is used when the Store Program is run directly after the Nucleus startup.

End Nucleus (EN)

This Store Type is used when the Store Program is run immediately before ending the nucleus session.

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. 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.

Daily Storage (DA)

This Store Type is used when the Store Program is run on a daily basis.

Weekly Storage (WE)

This Store Type is used when the Store Program is run on a weekly basis.

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.

Test Storage (TE)

This Store Type is used when the Store Program is run for test purpose.

Store Types for Utilities

Several Store type are predefine for the ASF Condense Nucleus Records utility. These Store types start with "+", "&" or "#". They are described in detail in the sections [Condense Records to Average Records](#) and [Condense Records to Delta Records](#).

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 not affected by this procedure.

Another example of the use of additional Store Types is to store records at monthly intervals. A suitable name for such a Store Type would be "MO". Evaluation Reports could then be generated, based only on the data stored in these records. .

Display Messages of the Store

While the Store Program runs, an informational message for each database and file processed is listed on the screen indicating whether the store was successful or not. After the run you can press PF9 ("Msg") to list the error messages in more details. In batch, the error messages are listed always by default. The error message list looks like:

DB	File	AOS-Pgm	Response
177	4	AB8FCB	Rsp 017 - File not found
50151	61	AB8FCB	Rsp 017 - File not found
50151	62	AB8FCB	Rsp 017 - File not found
111		ABSOPN2	Rsp 148 - DB not active ↵

Store Trend Records

```

14:38:16          **** A D A B A S Statistics Facility ****          2008-01-23
USERID          - Store trend data -                               MGTS0001

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

Trends based on : from: _____ , 00:00   to: _____ , 23:59
Generate trend  : from: _____ , 00:00   to: _____ , 23:59
Steps of days  : 7__
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 behavior 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. Before new trend records are generated, all previously stored trend records with the same store profile and store type are deleted automatically. For a specific store profile and store type you will therefore find only the trend records generated last.

Screen selection

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

Service Codes

Code S: Store Trend Data Now

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](#).

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 7.

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. If the Evaluation Profile does not contain databases, the corresponding Store Profile should be used.



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

```

15:15:44          *** A D A B A S Statistics Facility ***          2008-01-23
USERID           - 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 : _____ , 00:00 to _____ , 23:59
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.



Caution: 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).

The external work file must be defined with the following Natural parameter:

```
WORK=((1),OPEN=ACC)
```

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](#).

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

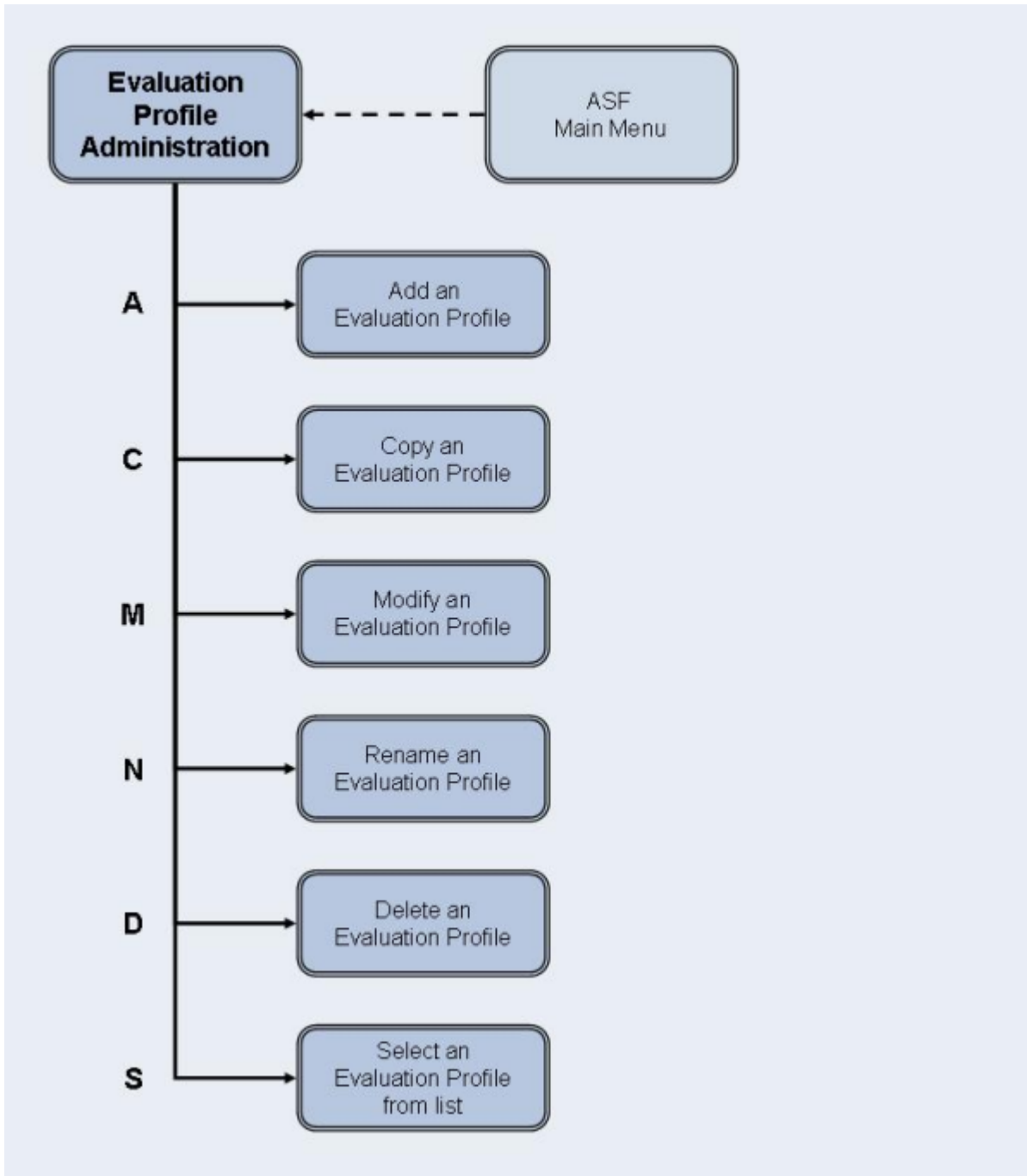


Figure 3-14: Evaluation Profile Administration Menu**Screen Layout for Evaluation Profile Administration**

```

15:43:45          *** A D A B A S  Statistics Facility ***          2008-01-23
USERID           - 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 More 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.

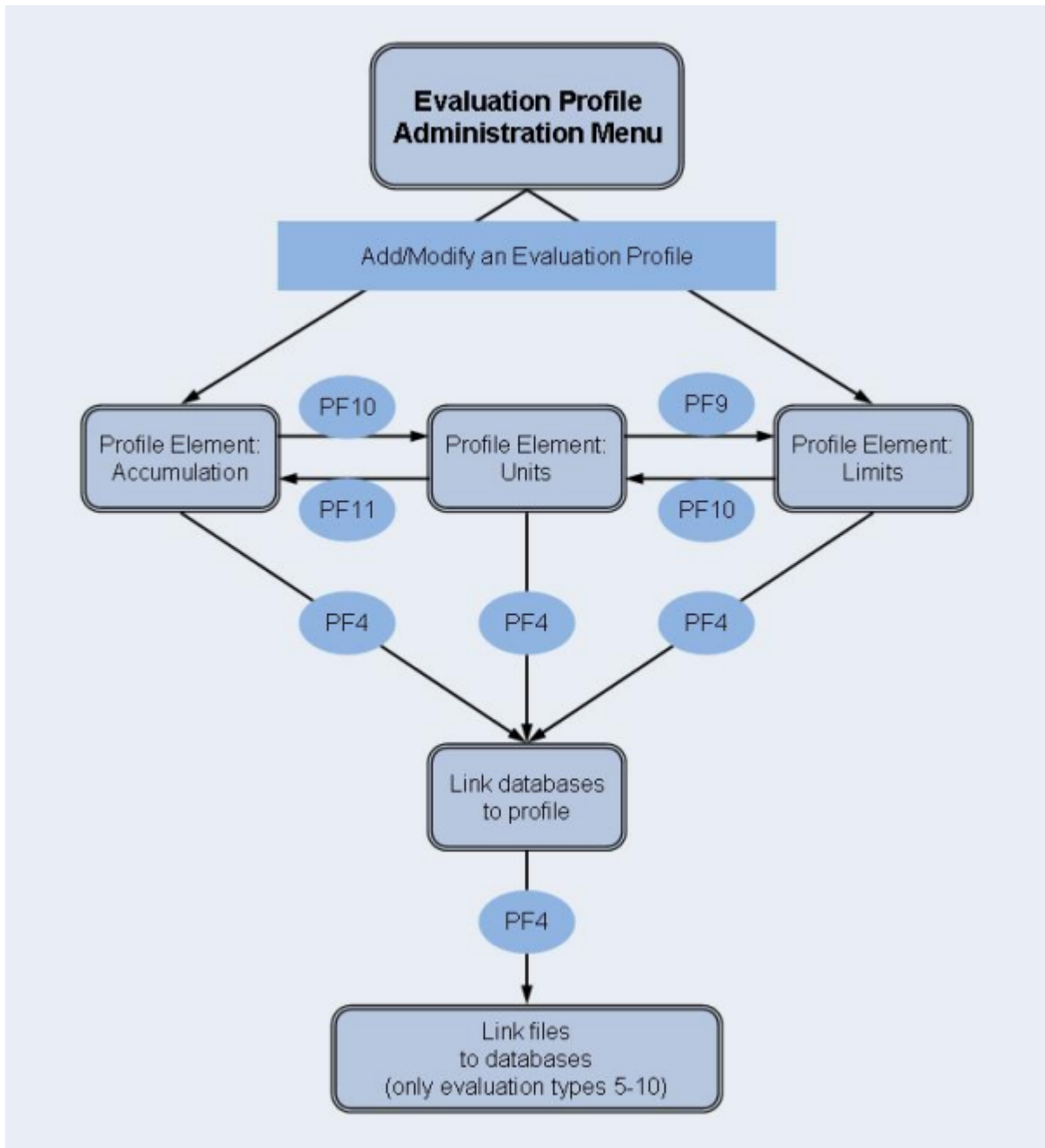


Figure 3-16: Adding/Modifying an Evaluation Profile

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 and 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

```

16:28:04          **** A D A B A S Statistics Facility ****          2008-01-23
USERID           - Profile element : Accumulation -                MPXK0001

Prof.: EVAL-01          1 One DB in point in time (DB) V:Fields H:Times

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 More Term DBs  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.
- Instead of the field name, you can also type the internal field number as short cut for the field. The internal field numbers are listed in the "Nr." column in the Select Fields screen. Note that internal field numbers can change with new ASF releases.
- 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 below in more detail. 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.

```

16:44:59          **** A D A B A S Statistics Facility ****          2008-01-23
                  - 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  ! >
!  ___  2  Session Informatio         0  16 !  ___  13  Tech. ASF fields             0  17 !
!  ___  3  Physical DB-Layout          0  9  !  ___  14  User defined field          0  20 !
!  ___  4  IO-Data                     0  9  !
!  ___  5  Cmd distr. source            0  4  !
!  ___  6  Cmd distr. thread            0 251 !
!  ___  7  Cmd distr. type              0  22 !
!  ___  8  User calls                   0  6  !
!  ___  9  Run time info                0  7  !
!  ___ 10  Call duration (mil           0  21 !
!
!                                     Total ..... 415 !
+-----+

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”). The total number of the selected and available fields is also displayed.

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.

```

16:44:59          **** A D A B A S Statistics Facility ****          2008-01-23
                   - Profile element : Accumulation -                MPXK0001

+---< Select fields of group 2: 'Session Information' page 1 >--< ALL >--+
!
!  Mk Nr. Field name          State  !  Mk Nr. Field name          State  !
!  -----+-----
!  __  29 DBID                 !  __  39 DURATION             ! >
!  __  30 DB-NAME              !  __  40 WAIT-TIME           !
!  __  31 SVC                  !  __  41 CPU-TIME            !
!  __  32 NUCID                !  __  42 DATE NUC-START     !
!  __  33 VERSION              !  __  43 TIME NUC-START     !
!  __  34 DATE LOADED          !  __  44 NUC-RUN-TIME       !
!  __  35 TIME LOADED          !                               !
!  __  36 MAXNR OF FILES       !                               !
!  __  37 NR FILES LOADED      !                               !
!  __  38 CURR. LOG TAPE       !                               !
!                               !                               !
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
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 “State” 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. After the last group, the group selection screen is displayed again. If you press here PF6 again, 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.

The number “Nr.” indicates the internal field number which can be used as abbreviation when selecting fields in the “Profile element : Accumulation” screen.

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 for the field in question is required.
Max	The maximum value recorded 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 value recorded of the field. For evaluations of type 2 or 6 an additional line lists this value. For the other evaluation types, the recorded data is listed anyway. Therefore no additional column is displayed.
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).

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

Profile Element: Limits

```

17:14:49          **** A D A B A S Statistics Facility ****          2008-01-23
USERID          - Profile element : Limits -                          MPXL0001

Prof.: EVAL-09          9 Critical report : List of fields, databases and f

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 DBs  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 numerical value, which you type in the “Limits” column.
- A unit of measurement, which you type in the “Unit” column.
- 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, the limit values are joined with an “OR”. 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. In general, you can only specify a unit which results in a numeric value, e.g. you can not use the units “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. The usual mathematical relational operators can be used as well.

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.

```

14:23:59          **** A D A B A S Statistics Facility ****          23.11.2007
USERID           - 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

```

17:50:57          **** A D A B A S Statistics Facility ****          2008-01-23
USERID           - Profile element : Units -                          MPXU0001

Prof.: EVAL-09          9 Critical report : List of fields, databases and f

Field Name          !      !          !      ! Da ! Hr ! Se !      !      ! 1/call
                   ! 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 More Term DBs Add Save - + Limit 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

Available units

The selectable units are listed in the following table. Some columns are used for two different units. It depends on the field specified which of them is used.

Unit	Meaning	Description
Bl	Blocks	The size value is displayed in units of blocks.
Cy	Cylinders	The size value is displayed in units of cylinders.
MB	Megabytes	The size value is displayed in units of megabytes (millions of bytes).
BY	Bytes	The size value is displayed in units of bytes.
Se	Seconds	Some data fields represent a time 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.
Hr	Hours	The time value is displayed as “hours:minutes:seconds”.
Da	Days	The time value is displayed as “days:hours:minutes”.
%	Percent	The value is displayed as percentage. The basic value used for the percentage calculation can be found in the section ASF Fields in the <i>ASF Examples</i> documentation.
Nom	Actual Value	The actual value of the field. This is also the default if no column is selected.
1/min	Per Minute	Some data fields represent the number of times a particular event occurred since the Adabas nucleus was started. 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 “1/min” is marked, the output report will express this value as an average number of occurrences per minute.
1/call	Per Call	Call duration fields (e.g. DUR-L9) represent the time in milliseconds the nucleus spent to perform a specific type of call (e.g. all L9 calls) since nucleus start. If the column “1/call” is marked, the output report will express this value as an average time spent per call.

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 unit columns is marked with an "x", then the corresponding ASF field will appear in the output report in the appropriate format.

If you press ENTER 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.

Not all units are applicable for all fields. If you select a unit which is not allowed for the given field, ASF displays an error message. The units available for each field are listed in the section ASF Fields in the *ASF Examples* documentation.

For evaluations of type 9 or 10, only one unit can be selected per 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 section [User Profile Maintenance](#)), the screen will be automatically deselected.

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

```
18:51:14          **** A D A B A S Statistics Facility ****          2008-01-23
USERID              - Profile administration -                      MPXXD001

+-----< link databases to profile >-----< ALL >--+
!                               Profile :   EVAL-05                               !
!                               !                               !
!   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.

For Evaluation Profiles, the definition of databases is optional. Specifying databases restricts the evaluation to the given values. If you do not specify any database, the databases and files are linked dynamically to the profile when the evaluation is performed. In this case, all databases and files found in the data are used.

For Store Profiles, the definition of databases is mandatory.

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.

For a Store Profile or an Evaluation Profile of type 5-10, you can select files by positioning the cursor to the corresponding database entry and pressing PF4. You can also type “.F” in the DB-ID field or “F” in the “dyn” field. The “Link Files to Database” screen is displayed.

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, 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 or Store Profile. Furthermore, if you have specified “N” in the “Stay after SAVE” field in the User Profile (see the section "[User Profile Maintenance](#)"), the screen will be automatically deselected.

Link Files to Profile

```


18:52:25          **** A D A B A S Statistics Facility ****          2008-01-23
USERID          - Profile administration -                          MPXXDF01

+-----< link databases to profile >-----< ALL >--+
! +-----< link files to database >-----< ALL >--+
! !      DB :   1424 Database 01424          Profile :   EVAL-05      !
! !                                         !
! ! File      Name                          File      Name          !
! ! -----  -----                        -----  -----      !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
! ! _____                               _____                 !
+- ! _____                               _____                 !
+-----+
Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help More Term          Add Save - +          Prev Next 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 by positioning the cursor on a database entry in the screen "Link databases to profile" and pressing PF4 or by typing ".F" in the DB-ID field or "F" in the "dyn" field.

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.

When you press PF10 or PF11, the files of the previous or next DBID listed in the "Link Databases to Profile" function are displayed. Before the next/previous database is displayed, ASF saves the changes of the current database automatically.

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.

```

18:52:25          **** A D A B A S Statistics Facility ****          2008-01-23
USERID          - Profile administration -                          MPXXDF01

+-----< link databases to profile >-----< ALL >--+
!  +--< Select Files of DB 1424 ==> Row      1 of      10 >-< ALL >--+ LL >--+
!  !
!  ! Mk  File  Name                Mk  File  Name                !      !
!  ! -----                -----                !      !
!  !   ___    1 Checkpoint-file          !      !
!  !   ___    5 NAT-FNAT                  !      !
!  !  X_     6 NAT-USER                   !      !
!  !   ___    7 NDV-SYSF                  !      !
!  !   ___    8 NAT-SECU                  !      !
!  !   ___   14 ASF-DATA                  !      !
!  !   ___   15 ASF-PROFILE               !      !
!  !  X_   101 Employees                  !      !
!  !  X_   102 Miscellaneous              !      !
!  !  X_   103 Vehicles                   !      !
+- ! 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

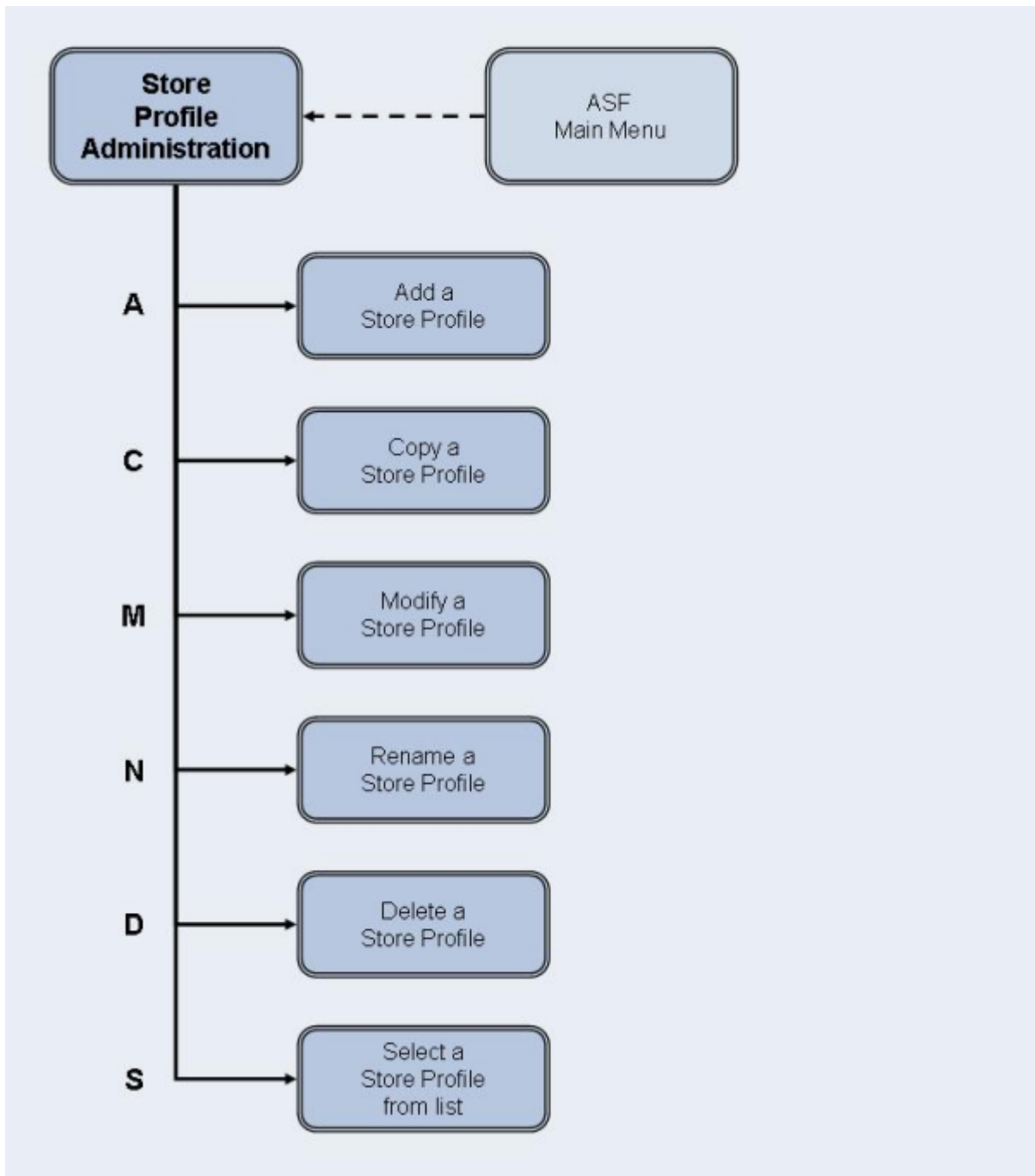


Figure 3-26: Store Profile Administration Menu

Screen Layout for Store Profile Administration

```

18:55:02          *** A D A B A S Statistics Facility ***          2008-01-23
USERID           - 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  More  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:

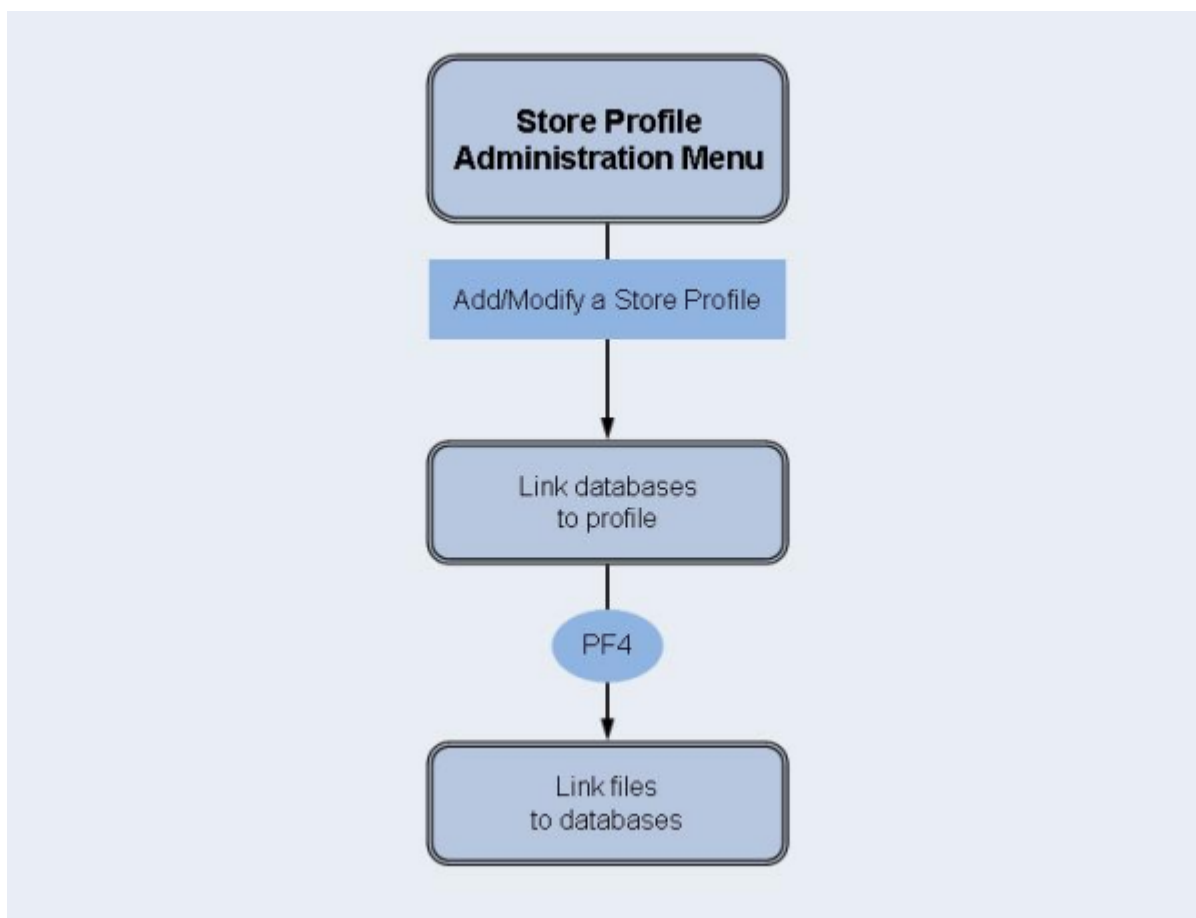


Figure 3-28: Adding/modifying a Store Profile

The “Link databases to profile” and “Link files to database” screens are described in the section [Evaluation Profile Administration](#).

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 and 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.



Caution: 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



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 Step 5: Setting up User Security in the *ASF Installation* documentation for details.

```

18:56:41          **** A D A B A S Statistics Facility ****          2008-01-23
USERID          - Security maintenance -                          MPA00001

                                     !mod. !mod. !      !
                                     !store!eval.!      !
No  ! User-ID  ! Name                                     !prof.!prof.!store!evaluate
-----+-----+-----+-----+-----+-----+-----+< ALL >
1   ! ASFADMIN ! ASF Administrator          ! X  ! X  ! X  ! X
2   ! BATCH    ! Batch ASF                      ! X  ! X  ! X  ! X
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, store data 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, store data 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. The “Modify Evaluation Profiles” authorization includes also the authorization to modify Predefined Evaluations. When you have finished, press PF6 to save the changes.

ASF Utilities and Services

```

18:59:42      *** A D A B A S  Statistics Facility ***           2008-01-23
USERID        - ASF Utilities and Services 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
      V      ASF Version Information
      F      ASF System File Maintenance
      P      Profile Maintenance
      X      Userexit Maintenance
      I      ASF Application Program Interface
      1/2    API Example 1/2
      R/M    SYSRDC Debugger / ASF Trace Maintenance
      ./?   Terminate / Help
-----
Enter code:  _

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

```

Figure 3-33: Menu for ASF Utilities and Services

Purpose

The menu lists the available ASF Utilities and Services. You can select one of the listed utilities or services by typing the corresponding one-letter code in the “Enter code” field. When you have entered the input data, press ENTER to activate the corresponding utility or service.

Screen selection

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

Description

The ASF Utilities and Services are described in detail in the section [ASF Utilities and Services](#).

4 ASF Utilities and Services

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This chapter covers the following topics:

Introduction

The ASF Utilities and Services are a set of functions which can be started from the ASF Utilities and Services Menu (Main Menu option "A").

The ASF Utilities are used for the management of an ASF system. This includes:

- "Condensing" of nucleus records to generate averages and/or differences.
- Transferring (loading) records from a foreign ASF system.
- Synchronizing the store times of ASF records.
- Maintenance of the user exits such as the displaying of delta values instead of cumulative values.
- Demonstrate the use of the Application Programming Interface (API).

The ASF Services are used for the maintenance of an ASF environment. This includes:

- Display the ASF version and correction status.
- Maintain the ASF System file settings.
- Maintain the User Profiles.
- The diagnosis of ASF with the SYSRDC debugger or with the ASF internal trace facility.

ASF Utilities and Services Menu

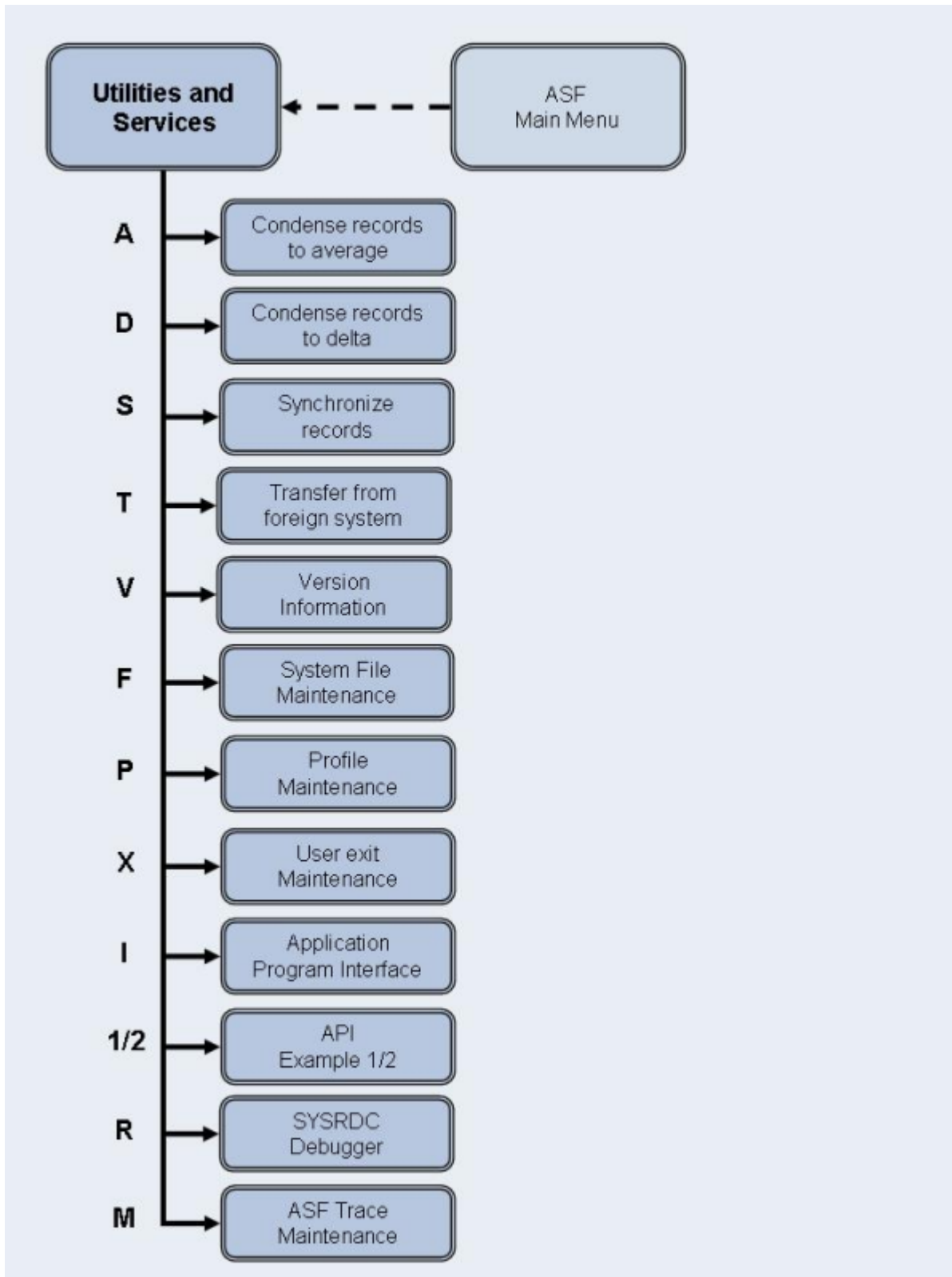


Figure 4-1: ASF Utilities and Services

```

18:59:42      *** A D A B A S Statistics Facility ***      2008-01-23
USERID        - ASF Utilities and Services 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
      V      ASF Version Information
      F      ASF System File Maintenance
      P      Profile Maintenance
      X      Userexit Maintenance
      I      ASF Application Program Interface
      1/2    API Example 1/2
      R/M    SYSRDC Debugger / ASF Trace Maintenance
      ./?   Terminate / Help
-----

Enter code:  _

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

```

Figure 4-2: Menu for ASF Utilities and Services

Purpose

The menu lists the available ASF Utilities and Services. You can select one of the listed items by typing the corresponding one-letter code in the “Enter code” field. When you have entered the input data, press ENTER to activate the function.

Screen selection

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

Description

The following table lists the utilities and services available.

Code	Description
A	Condense records to average or modified average records on a daily, weekly or monthly basis.
D	Condense records to difference records on a daily, weekly or monthly basis.
S	Synchronize the store times of nucleus records, or regenerate the original store times in records which were previously synchronized.
T	Transfer (load) records from a foreign ASF system.
V	Receive information about the current installed ASF version, the last correction applied, the ASF system file numbers, and more.

Code	Description
F	Switch to another ASF environment by changing the ASF system file settings (ASF Data and ASF Profiles).
P	Maintain the General User Profile, the e-Mail Profile and the Connect Profile.
X	Maintain the ASF User Exits such as "Display delta values". The ASF User Exit menu is described in the section User Exit Maintenance Menu .
I	Test the Application Programming Interface (API) subprogram ASFGET01 to retrieve and display ASF records.
1	Run the API example 1.
2	Run the API example 2.
R	Analyze ASF with the SYSRDC debugger.
M	Debug ASF with the ASF Trace Facility.

Condensing Nucleus Records

General

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.

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*. 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.

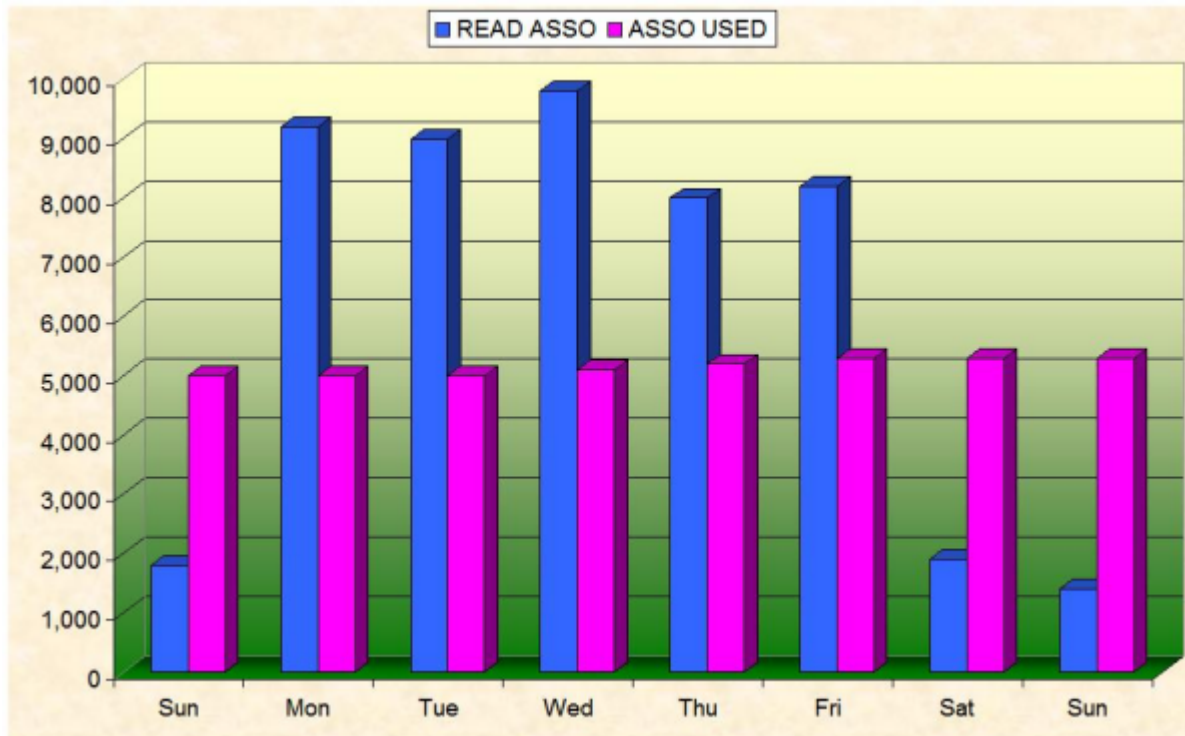
Example 1: Daily Nucleus Shutdown**Figure 4-3: Example with daily nucleus shutdown.**

Figure 4-3 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 Associator 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* (also called *delta records*).

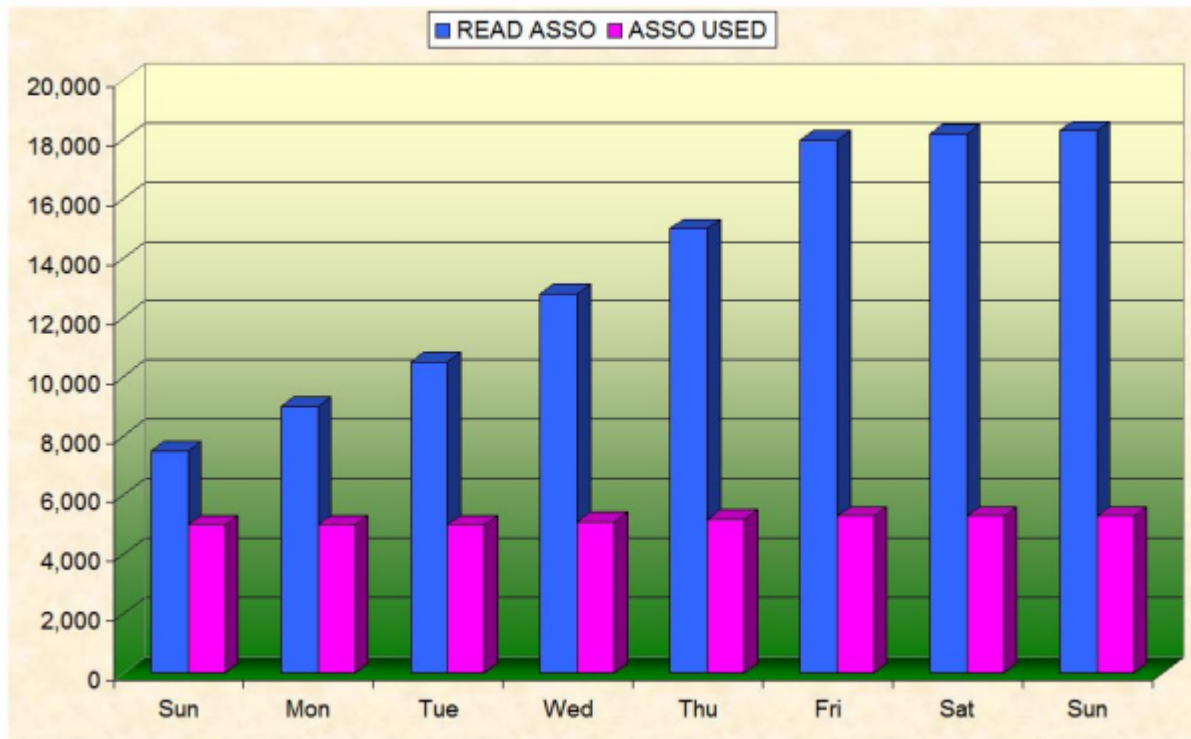


Figure 4-4: Example for 24-hour environment (no daily nucleus shutdown).

Figure 4-4 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 Associator 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 and 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 and 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 section).

Delta values displayed by the User Exit

When you activate the first user function of ASFUEX01, delta (difference) values are displayed in every evaluation. This function is described in details in the section [Displaying Delta Values](#). We outline here the difference between condensing records and the values displayed with the user exit ASFUEX01:

- The user exit shows the difference of two succeeding ASF record. It does not “condense” multiple records into one.
- The user exit shows only *virtual* values, i.e. the values are calculated while the evaluation runs. No records are stored on the ASF Data file.
- The user exit processes only cumulative values. Non-cumulative values remain and are displayed as they are.
- The user exit works as-is for daily shut down and 24-hour environments. It can compare databases of both types in one evaluation.
- The user exit can be modified, e.g. to display differences of non-cumulative fields. But in general, the delivered user exit should be sufficient.
- No special procedure is required for the generating of the delta values with the user exit. It is just a “switch on and see”.

Condense Records to Average Records

```

18:21:41      *** A D A B A S Statistics Facility ***      2008-01-24
USERID      - 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 4-5: 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 section, generates a third type of condensed record, namely difference records.*

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

ASF Data Field	Description
	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](#).

The time frame should be big enough for the condensing period selected. For a condensing period "DA" it should cover the next day, for "WE" the next Monday, for "MO" the first day of the next month.

Store profile:

The Store Type 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

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".

Condense Records to Delta Records

```

18:22:45          *** A D A B A S Statistics Facility ***          2008-01-24
USERID          - 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 : EN end nucleus      <= 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 4-6: 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](#).

The time frame should be big enough for the condensing period selected. For a condensing period "DA" it should cover the next day, for "WE" the next Monday, for "MO" the first day of the next month.

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 differ-

entiate 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

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".

Synchronize Store Times of Nucleus Records

```

18:23:39      *** A D A B A S Statistics Facility ***      2008-01-24
USERID      - 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 4-7: 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 system).

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](#).



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.

Transfer from Foreign ASF System

```

18:25:17          *** A D A B A S  Statistics Facility ***          2008-01-24
USERID           - 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 4-8: 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.

It is recommended to 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 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.

ASF Version Information

```

Product .....: ADABAS Statistics Facility (ASF)
Version .....: 8.1.1
Catalog Date ...: 2008-01-17

Last Correction : ASF81101
Last Corr. Date : 2008-01-21

User .....: USERID
Library .....: SYSASF
Natural Version : 04.02.04
ASF Data .....: 1424 / 14
ASF Profiles ...: 1424 / 15
    
```

Figure 4-9: ASF Version Information

Purpose

This screen provides information about the current installed ASF version and environment.

Screen selection

This screen is reached

- by selecting the service code “V” in the ASF Utilities and Services menu;
- by typing the command “VERSION” in the direct command line of any screen;
- by starting the Natural program “VERSION” in the SYSASF library.

Description

The following information is provided in the ASF Version Information screen:

Code	Description
Product	Product name and abbreviation.
Version	Current used ASF version.
Catalog Date	Catalog date of the current used version.
Last Correction	Name of the last correction applied to ASF. See the section ASF Corrections in the <i>ASF Installation</i> documentation for more information on ASF corrections.
Last Corr. Date	Catalog date of the last correction applied.
User	Current user Id.
Library	Current library.
Natural Version	Natural version in use.

Code	Description
ASF Data	DBID and file number of the ASF Data system file.
ASF Profiles	DBID and file number of the ASF Profiles system file.

ASF System File Maintenance

```

17:17:35          *** A D A B A S Statistics Facility ***          2008-01-25
USERID          - System File Maintenance -                      MLFILE

Current values ....:      ASF Data      1424 / 14
                          ASF Profiles  1424 / 15

New values .....:        ASF Data      _1424 / 14__
                          ASF Profiles  _1424 / 15__

Enter the new DBID / FNR combinations.

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

```

Figure 4-10: 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 the section Step 1: Customizing Natural in the *ASF Installation* documentation). 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 selecting the service code “F” in the ASF Utilities and Services menu;

- by typing the command "LFILE" in the direct command line of any 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.

This function may also be used as temporary solution if ASF has been started and the ASF system files are not yet defined in the Natural parameter module.

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.

User Profile Maintenance

Purpose:

The User Profile defines a set of defaults which affect the behavior of ASF. Three screens are available for defining the User Profile:

- In the General User Profile you specify general default parameters.
- In the e-Mail Profile you specify information required for sending Critical Reports as e-mails.
- In the Con-nect Profile you specify information required for sending Critical Reports as memos to Con-nect cabinets (if you are using Con-nect).

Screen selection

The General User Profile is reached by selecting the service code "P" in the ASF Utilities and Services menu or by typing the command "PROFILE" in the direct command line of any screen. From here you reach the e-Mail Profile by pressing PF7 and the Con-nect Profile by pressing PF8.

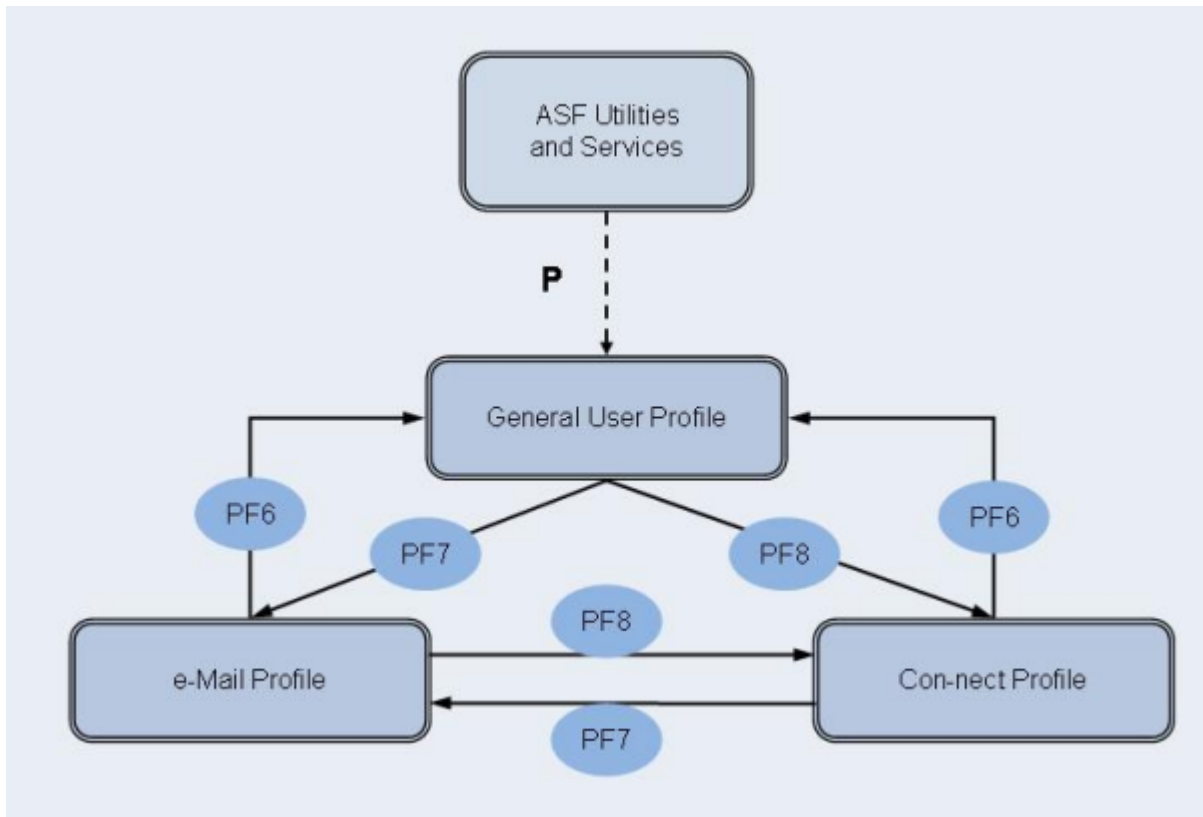


Figure 4-11: User Profile Navigation

This section covers the following topics:

- General User Profile
- E-Mail Profile
- Con-nect Profile

General User Profile

```

18:26:26      *** A D A B A S Statistics Facility ***      2008-01-25
USERID      - ASF Utilities and Services Menu -      MUM00001

+-----< Define user-profile for user STANDARD >-----+
!
! Date format      : 2      (1=YYYY-MM-DD,2=DD.MM.YYYY) !
! Decimal character : .      Separating sign : ,      !
! Kilo if > 1000   : N (Y/N)  Mega if > 1000 k : N (Y/N) !
! Stay after save  : Y (Y/N)  Keep environment : Y (Y/N) !
!
! Printer name     : PDEFAULT Char. per line   : 80_   !
! Left margin      : 3__      Print one document: Y (Y/N) !
! Batch output     : 2      (1=seqfile,2=sysout) !
!
! Limit CPU-units  : 1800__   Limit ADA-calls   : 1800__ !
! Get Num.rec.loaded : Y (Y/N) Accuracy level    : 10    !
! Not used         : N (Y/N)  Start with menu    : Y (Y/N) !
!
En +-----+

Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help More Term                        User eMail CONNE                        Menu

```

Figure 4-12: Menu for General User Profile Maintenance

Screen selection

The General User Profile is reached

- by selecting the service code “P” in the ASF Utilities and Services menu;
- by typing the command “PROFILE” or “PROFILE STANDARD” or “PROFILE *username*” in the direct command line of any screen;
- by pressing PF6 in the e-Mail Profile or in the Con-nect Profile.

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 (US format), or type 2 to get the format DD.MM.YYYY (European format).

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. If you leave the field empty, no separating sign will be used.

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 gives 26 K, whereas 25499 gives 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 gives 3 M, whereas 2 499 000 gives 2 M.

Stay after save:

This allows you to control the behavior of the SAVE function (PF6 key) in all subsequent screens. If you specify “N”, then pressing 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 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.

E-Mail Profile

```

18:32:23          *** A D A B A S Statistics Facility ***          2008-01-25
USERID          - ASF Utilities and Services Menu -          MUM00001

+-----< Define e-Mail Profile for user STANDARD >-----+
!
! Critical reports are written in SMTP format to Workfile 1
! (if output medium 'PC-File' is marked with 'E').
!
! Sending Domain Name:
! From :
! To(1):
! To(2):
! To(3):
! Only if the critical report contains fields:
! Standard text in the mail:
!
!
!
En !
+-----+
Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help More Term                User eMail CONNE                Menu

```

Figure 4-13: Menu for Define e-Mail Profile

Screen selection

The e-Mail Profile is reached by pressing PF7 in the General User Profile or in the Con-nect Profile.

Purpose

When you run a Critical Report with the input field “PC-File” marked with an “E”, ASF writes the output in SMTP format into the Workfile 1. Beside the report itself, the receiver(s) and sender address and a standard text as specified in the e-Mail Profile are supplied. The e-mail addresses are used by SMTP to mail the report. For more details, see the section [Sending a Critical Report as e-Mail](#).

Input field description:

Sending Domain Name

This specifies the domain name of the SMTP server. It must be the same as given in the “DEST” field in the SMTP job. Ask your system administrator for the SMTP domain name used in your environment.

From

This e-mail address is used in the mail as sender address. Error messages from the e-mail system (delivery failed etc.), are returned to this address as well.

To (1-3)

You can specify up to three receiver addresses. How to specify the “@” (at) sign, depends on your local codepage. Ask your system administrator for the character corresponding to the at-sign in your environment.

Only if the critical report contains fields

If you mark this field, the output of a Critical Report is sent as e-mail only if at least one critical field is reported in the Critical Report.

Standard text in the mail

When a Critical Report is sent as e-mail, the text specified for this field is sent as an accompanying note.

Con-nect Profile

```

18:32:23          *** A D A B A S Statistics Facility ***          2008-01-25
USERID           - ASF Utilities and Services Menu -             MUM00001

+-----< Define CONNECT Profile for user STANDARD >-----+
!
! Critical reports are to be sent as memos to 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                User eMail CONNE                               Menu
    
```

Figure 4-14: Menu for Define Con-nect Profile

Screen selection

The Con-nect Profile is reached by pressing PF8 in the General User Profile or in the e-Mail Profile.

Purpose

When you run a Critical Report with the input field “printer” marked (see the section [Sending a Critical Report to Con-nect Cabinets](#)) 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. A copy of the memo can be found in the out-basket of the cabinet “SYSASF”.

Input field description:

Cabinets

You can specify up to three 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.

User Exit Maintenance

The User Exit maintenance is described in the section [User Exit Maintenance Menu](#).

ASF Application Program Interface (API) Test Menu

```

18:27:12          *** A D A B A S Statistics Facility ***          2008-01-24
USERID           - API test interface -                          MAT00001

Enter code : __ (00=INIT,01=TDF,02=DFT)
Store type : __
Store profile name/id : _____
Time interval : _____ , 00:00 to _____ , 23:59
DB/File : _____
Origin : _____
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 4-15: Menu for testing the API

Purpose

This menu allows you to try out some features of the Application Program Interface (API). 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 section 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 and 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 and 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 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 ASFGGET01 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.

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 4-16: 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:

```

***** ADABAS Statistics Facility (ASF) *****
* Program ....: PEXAMPL1
* Description : DEMONSTRATION OF THE API (ASFGET01):
*              SPACE USED FOR SELECTED DATABASES
*****
* (C) COPYRIGHT 2007 by SOFTWARE AG, Darmstadt (Germany)
*****
DEFINE DATA
LOCAL
1 #P-FKTCODE          (A2)
1 #P-INPUT-PARAMETER
2 #P-SELECTION-CRITERIA (A67)
2 REDEFINE #P-SELECTION-CRITERIA
3 #P-FROM-DATE        (A10)
3 #P-FROM-TIME        (A5)
3 #P-TO-DATE          (A10)
3 #P-TO-TIME          (A5)
3 #P-DAT-FORMAT-CODE (A1)
3 #P-STORE-PROFILE    (A16)
3 #P-STORE-PROFILE-ID (A5)
3 #P-STORE-TYPE       (A2)
3 #P-ORIGIN           (A3)
3 #P-DB               (A5)
3 #P-FILE             (A5)
2 #P-FORMAT           (A4)
2 REDEFINE #P-FORMAT

```

```

3 #P-DECIMAL-SIGN      (A1)
3 #P-THOUSAND-SIGN    (A1)
3 #P-KILO-TRANSFORMATION (A1)
3 #P-MEGA-TRANSFORMATION (A1)
2 #P-NR-RECORDS       (N3)
2 #P-FIELD-NAMES      (A16/1:150)
2 #P-UNITS             (A2/1:150)
2 #P-RESERVE          (A30)
1 #P-OUTPUT-PARAMETER
2 #P-FIELD-DATA       (A18/1:150)
2 #P-ADDITIONS1      (A250)
2 #P-ADDITIONS2      (A250)
1 #P-RETURN
2 #P-RETURNCODE       (N2)
2 #P-ASF-MSG-NR       (N4)
2 #P-ASF-MSG          (A60)
2 #P-WRONG-VALUE      (A32)
2 #P-PARAM-NO         (N3)
1 #P-WORK              (A114)
1 #P-TRACE            (A5)
*
1 #M-ASSO              (N7/1:7)
1 #M-DATA              (N7/1:7)
1 #M-DATE              (A10)
1 #M-DB                (A5/1:7)   INIT <'16','17','19','26','27','36','37'>
1 #M-DBNAME           (A16/1:7)
1 #M-SUM               (N7/1:7)
1 #M-TOTAL-SUM        (N7)
1 #M-TEXT              (A75)
*
1 #I-DB                (P3)
*
END-DEFINE
*
* MOVE 'TRACE' TO #P-TRACE /* trace asfget01 if desired
*
FOR #I-DB 1 TO 7
*
MOVE '00' TO #P-FKTCODE
CALLNAT 'ASFGET01' #P-FKTCODE #P-INPUT-PARAMETER
      #P-OUTPUT-PARAMETER #P-RETURN #P-WORK #P-TRACE
*
MOVE '02'              TO #P-FKTCODE
MOVE '1993-03-15'      TO #P-FROM-DATE /* SAG201097
MOVE '00:00'           TO #P-FROM-TIME
MOVE '1993-03-15'      TO #P-TO-DATE   /* SAG201097
MOVE '1'               TO #P-DAT-FORMAT-CODE
MOVE 'NEW-TEST-DB-ALL' TO #P-STORE-PROFILE
MOVE 'DA'              TO #P-STORE-TYPE
MOVE 'NU'              TO #P-ORIGIN
MOVE #M-DB(#I-DB)     TO #P-DB
MOVE 1                 TO #P-NR-RECORDS

```



```

MOVE 'DB-NAME'          TO #P-FIELD-NAMES(1)
MOVE 'ASSO USED'       TO #P-FIELD-NAMES(2)
MOVE 'DATA USED'      TO #P-FIELD-NAMES(3)
MOVE 'BL'              TO #P-UNITS(2)
MOVE 'BL'              TO #P-UNITS(3)
*
CALLNAT 'ASFGET01' #P-FKTCODE #P-INPUT-PARAMETER
        #P-OUTPUT-PARAMETER #P-RETURN #P-WORK #P-TRACE
*
IF #P-RETURNCODE = 1
  IF #P-ASF-MSG <> ' '
    COMPRESS 'ASF' #P-ASF-MSG-NR
      INTO #M-TEXT LEAVING NO
    COMPRESS #M-TEXT #P-ASF-MSG
      INTO #M-TEXT
  ELSE
    MOVE 'Please change sample program PEXAMPL1 according '-
      'to your collected ASF data.'
      TO #M-TEXT
  END-IF
  ESCAPE BOTTOM
END-IF
*
MOVE #P-FIELD-DATA(2)   TO #M-DBNAME(#I-DB)
COMPUTE #M-ASSO(#I-DB) = VAL(#P-FIELD-DATA(3))
COMPUTE #M-DATA(#I-DB) = VAL(#P-FIELD-DATA(4))
COMPUTE #M-SUM(#I-DB) = VAL(#P-FIELD-DATA(3)) +
  VAL(#P-FIELD-DATA(4))
ADD #M-SUM(#I-DB) TO #M-TOTAL-SUM
*
END-FOR
*
MOVE #P-FROM-DATE TO #M-DATE
INPUT USING MAP 'MEXAMPL1'
*
END

```

API Example 2

```

*** 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
-----
1992 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
1993 Jan          2.300.059              1.777.810
      Feb          2.177.879              1.388.148
-----
                          13.690.851          9.412.227

```

Figure 4-17: 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:

```

***** ADABAS Statistics Facility (ASF) *****
* Program ....: PEXAMPL2
* Description : DEMONSTRATION OF THE API (ASFGET01):
*              OVERVIEW OF DISK SPACE AND IO FOR
*              A SIX MONTH PERIOD
*****
* (C) COPYRIGHT 2007 by SOFTWARE AG, Darmstadt (Germany)
*****
DEFINE DATA
LOCAL
1 #P-FKTCODE          (A2)
1 #P-INPUT-PARAMETER
2 #P-SELECTION-CRITERIA (A67)
2 REDEFINE #P-SELECTION-CRITERIA
3 #P-FROM-DATE       (A10)
3 #P-FROM-TIME       (A5)
3 #P-TO-DATE         (A10)
3 #P-TO-TIME         (A5)
3 #P-DAT-FORMAT-CODE (A1)
3 #P-STORE-PROFILE   (A16)
3 #P-STORE-PROFILE-ID (A5)

```

```

3 #P-STORE-TYPE      (A2)
3 #P-ORIGIN         (A3)
3 #P-DB             (A5)
3 #P-FILE           (A5)
2 #P-FORMAT         (A4)
2 REDEFINE #P-FORMAT
3 #P-DECIMAL-SIGN   (A1)
3 #P-THOUSAND-SIGN  (A1)
3 #P-KILO-TRANSFORMATION (A1)
3 #P-MEGA-TRANSFORMATION (A1)
2 #P-NR-RECORDS     (N3)
2 #P-FIELD-NAMES    (A16/1:150)
2 #P-UNITS          (A2/1:150)
2 #P-RESERVE        (A30)
1 #P-OUTPUT-PARAMETER
2 #P-FIELD-DATA     (A18/1:150)
2 #P-ADDITIONS1     (A250)
2 #P-ADDITIONS2     (A250)
1 #P-RETURN
2 #P-RETURNCODE     (N2)
2 #P-ASF-MSG-NR     (N4)
2 #P-ASF-MSG        (A60)
2 #P-WRONG-VALUE    (A32)
2 #P-PARAM-NO       (N3)
1 #P-WORK           (A114)
*
1 #M-IO             (N8/1:6)
1 #M-SPACE          (N8/1:6)
1 #M-SUM-IO         (N8)
1 #M-SUM-SPACE     (N8)
1 #M-YEAR           (A4/1:6) INIT <'1992',' ',' ',' ',' ','1993',' ' >
1 #M-MONTH          (A3/1:6) INIT <'Sep','Oct','Nov','Dec','Jan','Feb'>
1 #M-TEXT           (A75)
*
1 #I-MONTH          (P3)
1 #I-DB             (P3)
*
1 #W-DBS           (A5/1:7) INIT <'16','17','19','26','27','36','37'>
1 #W-MONTHS        (A2/1:6) INIT <'09','10','11','12','01','02'>
1 #W-YEAR           (A4/1:6) INIT <'1992','1992','1992','1992','1993','1993'>
*
END-DEFINE
*
*
F. FOR #I-MONTH 1 TO 6
*
  FOR #I-DB 1 TO 7
  *
    MOVE '00' TO #P-FKTCODE
    CALLNAT 'ASFGET01' #P-FKTCODE #P-INPUT-PARAMETER
      #P-OUTPUT-PARAMETER #P-RETURN #P-WORK
  *

```

```

MOVE '02'          TO #P-FKTCODE
COMPRESS #W-YEAR(#I-MONTH) '-' #W-MONTHS(#I-MONTH) '-01'
  INTO #P-FROM-DATE LEAVING NO
MOVE '1'          TO #P-DAT-FORMAT-CODE
MOVE 'NEW-TEST-DB-ALL' TO #P-STORE-PROFILE
MOVE '#M'        TO #P-STORE-TYPE
MOVE 'NU'        TO #P-ORIGIN
MOVE #W-DBS(#I-DB) TO #P-DB
MOVE 1           TO #P-NR-RECORDS
MOVE 'ASSO USED'  TO #P-FIELD-NAMES(1)
MOVE 'DATA USED' TO #P-FIELD-NAMES(2)
MOVE 'READ ASSO' TO #P-FIELD-NAMES(3)
MOVE 'READ DATA' TO #P-FIELD-NAMES(4)
MOVE 'READ WORK' TO #P-FIELD-NAMES(5)
MOVE 'WRITE ASSO' TO #P-FIELD-NAMES(6)
MOVE 'WRITE DATA' TO #P-FIELD-NAMES(7)
MOVE 'WRITE WORK' TO #P-FIELD-NAMES(8)
MOVE 'BL'        TO #P-UNITS(1)
MOVE 'BL'        TO #P-UNITS(2)
*
CALLNAT 'ASFGET01' #P-FKTCODE #P-INPUT-PARAMETER
  #P-OUTPUT-PARAMETER #P-RETURN #P-WORK
*
IF #P-RETURNCODE = 1
  IF #P-ASF-MSG <> ' '
    COMPRESS 'ASF' #P-ASF-MSG-NR
      INTO #M-TEXT LEAVING NO
    COMPRESS #M-TEXT #P-ASF-MSG
      INTO #M-TEXT
  ELSE
    MOVE 'Please change sample program PEXAMPL1 according '-
      'to your collected ASF data.'
      TO #M-TEXT
  END-IF
  ESCAPE BOTTOM (F.)
END-IF
*
COMPUTE #M-SPACE(#I-MONTH) =
  #M-SPACE(#I-MONTH) +
  VAL(#P-FIELD-DATA(2)) +
  VAL(#P-FIELD-DATA(3))
*
COMPUTE #M-IO(#I-MONTH) =
  #M-IO(#I-MONTH) +
  VAL(#P-FIELD-DATA(4)) +
  VAL(#P-FIELD-DATA(5)) +
  VAL(#P-FIELD-DATA(6)) +
  VAL(#P-FIELD-DATA(7)) +
  VAL(#P-FIELD-DATA(8)) +
  VAL(#P-FIELD-DATA(9))
*
END-FOR

```

```
*  
  ADD #M-SPACE(#I-MONTH) TO #M-SUM-SPACE  
  ADD #M-IO(#I-MONTH) TO #M-SUM-IO  
*  
END-FOR  
*  
INPUT USING MAP 'MEXAMPL2'  
*  
END
```

Interface to SYSRDC

The Natural Data Collection Utility SYSRDC supplies monitoring and accounting data for certain events within Natural. The SYSRDC utility is described in detail in the Natural Utilities Manual for Mainframes. Please refer to this manual for any question regarding the installation or activation of SYSRDC, or the meaning of the various event types and data fields collected by SYSRDC.

The SYSRDC trace buffer records the data in wrap-around mode. You will therefore find only the last events in the buffer. The number of events which fit in the buffer depends on the setting of the corresponding Natural parameter.

For the monitoring of ASF, there are some services available. The corresponding programs which are used as interface to SYSRDC are on the delivered SYSASF library.

When the SYSRDC buffer is allocated, the data collection is performed automatically at the start of Natural by default. ASF writes user records into the SYSRDC buffer when it starts, when a Natural error occurs and for each direct command entered. In case of a failure of ASF, you can provide Software AG support with information collected by SYSRDC, e.g., you can download the requested data and send it to your Software AG technical support representative.

Although the ASF SYSRDC Interface is primarily intended for debugging ASF failures, you may use it for other Natural applications as well.

```

18:35:26          ***** NATURAL SYSRDC UTILITY *****          2008-01-25
User USERID          - Main Menu -          XRDCMAIM
Trace started

          Code   Function
          R     Restart trace
          S     Stop trace
          I     Show record information
          L     List trace records
          E     Select trace events
          D     Download trace records
          P     Print trace records
          ?     Help
          .     Exit

Code ..... _
From record .. 1_____ to record .. 999999

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit Start Stop Flip Info List EvSel Down Print Canc
    
```

Figure 4-18: The SYSRDC Main Menu

Purpose

This screen is used to maintain the Natural SYSRDC utility. The current status of SYSRDC is displayed. SYSRDC can be started, stopped and the SYSRDC event types can be set. The SYSRDC buffer data can be listed on the screen, printed or downloaded to the PC.

Screen selection

This screen is reached

- by selecting the service code “R” in the ASF Utilities and Services menu;
- by typing the command “RDC” in the direct command line of any screen;
- by starting the Natural program “RDC” in the SYSASF library.

Input field description

Code:

Enter the code of the service you wish to activate. The codes available and their meaning are listed below.

From record ... to record:

Each record in the SYSRDC buffer has a sequence number, starting with "1" for the oldest record. The event selection does not affect the line numbers. You specify here the range of SYSRDC records to be downloaded or printed. If you list the SYSRDC records, the list will start with the "from record". Nevertheless you can view all records by paging up or down. When the SYSRDC debugging is stopped, the "to record" field contains the number of the last record in the buffer by default.

Command:

The SYSRDC Interface uses its own set of direct commands. Move the cursor into the "Command" field and press PF1, to receive the list of direct command supplied and their meaning.

Service Codes**R: Restart trace**

Select this service to (re-)start the SYSRDC data collecting. Before the SYSRDC data collecting is started, the SYSRDC buffer is cleared automatically. You have to confirm this action in a pop-up window, so that you do not accidentally clear the buffer. If only specific SYSRDC event types should be collected, select these types with the service "E" before restarting the trace.

S: Stop trace

Select this service to stop the SYSRDC data collecting. You have to confirm this action in a pop-up window, so that you do not accidentally stop the data collecting.

I: Show record information

This service displays detailed information on the record specified in the "From record" field. Before the record is displayed, the SYSRDC trace recording is stopped automatically. You have to confirm this action in a pop-up window, so that you do not accidentally stop the recording.

L: List trace records

Select this service to list the content of the SYSRDC buffer. Beside the General Information and the Time Information, there is one tab for the information concerning each event type. Before the SYSRDC buffer is listed, the SYSRDC trace recording is stopped automatically. You have to confirm this action in a pop-up window, so that you do not accidentally stop the recording.

E: Select trace events

Select this service to select the SYSRDC events to be traced or listed.

D: Download trace records

Download the SYSRDC buffer to the PC. You have to confirm this action in a pop-up window, so that you do not accidentally download data.

P: Print trace records

Print the SYSRDC buffer. You have to confirm this action in a pop-up window, so that you do not accidentally print data. Additionally you must specify the printer environment. This is because the SYSRDC interface has no access to the SYSASF settings.

Tracing ASF

ASF provides an internal trace facility which offers up to 16 different types of debugging (not all are used so far). Various direct commands are available to perform trace functions like start a specific trace type or stop the tracing. These direct commands are described later in detail. The same trace functions can be performed from the ASF Trace Maintenance menu.

When the ASF internal trace is activated, it writes additional information on the screen. This information helps Software AG support to analyze failures of ASF.

```

18:34:53          *** A D A B A S Statistics Facility ***          2008-01-25
USERID          - Trace Maintenance -                          MTRACE01

Mk  Nr Description          Mk  Nr Description
-----
-   1 Program trace          -   9 N/A
-   2 General trace information - 10 N/A
-   3 Overflow and error situations - 11 N/A
-   4 Formatted trace information - 12 N/A
-   5 Special Debugging      - 13 N/A
-   6 Full store trace       - 14 N/A
-   7 User exit trace        - 15 N/A
-   8 N/A                    - 16 N/A

Program to be traced : ALL
Program counter.....: 0000000

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

Figure 4-19: Menu for the ASF Trace Maintenance

Purpose

This screen is used to maintain the ASF internal trace facility. Selected trace types can be started or stopped, the ASF program to be traced can be specified and the trace counter can be set.

Screen selection

This screen is reached

- by selecting the service code “M” in the ASF Utilities and Services menu;
- by typing the command “TRACE” in the direct command line of any screen;
- by starting the Natural program “RDC” in the SYSASF library.

Description

The ASF Trace Maintenance menu outlines the possible trace types of the ASF internal trace facility. You can activate a selected trace type by marking it with an “X”. You can switch on all trace types by pressing PF5, or switch off all trace types by pressing PF4.

The following traces are available:

1. **Program trace** – ASF displays the name of each Natural object that it executes. Additionally the counter, the object type (e.g. “program”), and the level are displayed.
2. **General trace information** – ASF displays various information about the currently performed task. For example when reading the ASF Data file for an evaluation, the value searched and the value found are displayed.
3. **Overflow and error situations** – In some calculations where an overflow occurs (number too large), the overflow is caught by ASF and the highest possible number (depending on the format) is substituted. When trace level 3 is activated, ASF displays the real value together with the substitute.
4. **Formatted trace information** – Some specific trace data is displayed in a formatted output.
5. **Special Debugging** – Selected information is displayed only.
6. **Full store trace** – The value of most ASF fields is displayed when ASF performs the store function.
7. **User exit trace** – You can use this trace type to debug the user exit ASFUEX01. In the program, the parameter #P-TRACE is true when this trace type is set

The other trace levels are currently not used.

When the ASF trace has been activated, the trace information is written to the screen. Page through this information by pressing ENTER until you reach the next ASF screen.

When you have marked the desired trace types, press PF6 for the selection before pressing PF3, otherwise ASF ignores your changes and returns to the calling screen.

The tracing remains active until you deactivate it in the ASF Trace Maintenance, with the direct command “TRACE OFF”, or until the end of the Natural session. Other ASF users are not affected, when you activate or deactivate the trace facility.

Input field description

Program to be traced:

The tracing can be restricted to a specific ASF program by specifying the program name in this field. If you specify "ALL", all ASF programs will be traced, which is the default.

Program counter:

If any ASF trace level is activated, the ASF internal trace counter is increased as soon as an ASF program is started. This counter is displayed with the Program Trace (type 1). You can set the counter to any value by overwriting this field.

Direct Commands and Programs

There are several Direct Commands available for tracing ASF. Additionally there are some programs delivered in the SYSASF library to maintain the ASF trace facility from "outside", i.e. before you start ASF itself.

Direct Command	Program	Purpose
TRACE		Display the Trace Maintenance Menu.
TRACE ?		Display the current status of the trace mode.
TRACE COUNT		Reset the trace program counter.
TRACE NAME <i>prog</i>		Restrict the tracing to the program <i>prog</i> . If <i>prog</i> is omitted or set to ALL, all programs will be traced.
TRACE OFF	TRACEOFF	Stop the trace mode. All trace types (1 to 16) are deactivated. The trace counter is reset.
TRACE ON	TRACE-ON	Start the trace mode. All trace types (1 to 16) are activated.
TRACE PROG	TRACE-P	Start the "Program" trace level. ASF writes the name of each Natural program, subprogram, subroutine etc. that it executes. This is the same as "TRACE 1".
TRACE <i>n</i>	TRACE-N	Start the trace type <i>n</i> , where <i>n</i> is the trace type number from 1 to 16 as described above. When you start the program TRACE-N, it will ask you which trace type (mode) should be started.
TRACE OFF		Stop the trace. All trace types (1 to 16) are deactivated. The trace counter reset.

5 ASF Services

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This chapter covers the following topics:

Introduction

The ASF Services are a set of functions which can be started from the ASF Utilities and Services Menu (Main Menu option “A”). The ASF Services are used for the maintenance of an ASF environment. They contain functions for displaying the ASF version and correction status. They provide services to maintain the ASF System files, the User Profiles and the User Exits. They offer functions for the diagnosis of ASF with the ASF internal trace facility or with the SYSRDC debugger.

ASF Services Menu

```

18:59:42      *** A D A B A S  Statistics Facility ***          2008-01-23
USERID      - ASF Utilities and Services 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
      V      ASF Version Information
      F      ASF System File Maintenance
      P      Profile Maintenance
      X      Userexit Maintenance
      I      ASF Application Program Interface
      1/2    API Example 1/2
      R/M    SYSRDC Debugger / ASF Trace Maintenance
      ./?   Terminate / Help
-----
Enter code:  _

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

Figure 5-1: Menu for ASF Utilities and Services

Purpose

The menu lists the available ASF Services (and Utilities). You can select one of the listed services 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 corresponding service.

Screen selection

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

Description

The following table lists the services available. Note that the ASF Utilities are described in the section [ASF Utilities](#).

Code	Description
V	Receive information about the current installed ASF version, the last correction applied, the ASF system file numbers, and more.
F	Switch to another ASF environment by changing the ASF system file settings (ASF Data and ASF Profiles).
P	Maintain the User, e-Mail and Con-nect Profiles.
X	Maintain the ASF User Exits such as “Display delta values”. The ASF User Exit menu is described in the section ASF User Exits and User-defined fields.
R	Analyze ASF with the SYSRDC debugger.
M	Maintain the ASF Trace Facility.

ASF Version Information

```

Product .....: ADABAS Statistics Facility (ASF)
Version .....: 8.1.1
Catalog Date ...: 2008-01-17

Last Correction : ASF81101
Last Corr. Date : 2008-01-21

User .....: USERID
Library .....: SYSASF
Natural Version : 04.02.04
ASF Data .....: 1424 / 14
ASF Profiles ...: 1424 / 15

```

Figure 5-2: ASF Version Information

Purpose

This screen provides information about the current installed ASF version and environment.

Screen selection

This screen is reached

- by selecting the service code “V” in the ASF Utilities and Services menu;
- by typing the command “VERSION” in the direct command line of any screen;
- by starting the Natural program “VERSION” in the SYSASF library.

Description

The following information is provided in the ASF Version Information screen:

Code	Description
Product	Product name and abbreviation.
Version	Current used ASF version.
Catalog Date	Catalog date of the current used version.
Last Correction	Name of the last correction applied to ASF. See the section ASF Corrections in the <i>ASF Installation</i> documentation for more information on ASF corrections.
Last Corr. Date	Catalog date of the last correction applied.
User	Current user Id.
Library	Current library.
Natural Version	Natural version in use.
ASF Data	DBID and file number of the ASF Data system file.
ASF Profiles	DBID and file number of the ASF Profiles system file.

ASF System File Maintenance

```

17:17:35          *** A D A B A S Statistics Facility ***          2008-01-25
USERID          - System File Maintenance -                      MLFILE

Current values . . . . :      ASF Data      1424 / 14
                        ASF Profiles  1424 / 15

New values . . . . . :      ASF Data      _1424 / 14__
                        ASF Profiles _1424 / 15__

Enter the new DBID / FNR combinations.

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12

```

Figure 5-3: 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 the section Step 1: Customizing Natural in the *ASF Installation* documentation). 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 selecting the service code “F” in the ASF Utilities and Services menu;
- by typing the command “LFILE” in the direct command line of any 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.

This function may also be used as temporary solution if ASF has been started and the ASF system files are not yet defined in the Natural parameter module.

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.



Note: *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.*

User Profile Maintenance

Purpose

The User Profile defines a set of defaults which affect the behavior of ASF. Three screens are available for defining the User Profile:

- In the General User Profile you specify general default parameters.
- In the e-Mail Profile you specify information which ASF requires for sending Critical Reports as e-mails.
- In the Con-nect Profile you specify information which ASF requires for sending Critical Reports as memos to Con-nect cabinets (if you are using Con-nect).

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 5-3) 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 General User Profile is reached

- by selecting the service code “P” in the ASF Utilities and Services menu;
- by typing the command “PROFILE” or “PROFILE STANDARD” or “PROFILE *username*” in the direct command line of any screen;
- by pressing PF6 in the e-Mail Profile or in the Con-nect Profile.

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*.

The e-Mail Profile is reached

- by pressing PF7 in the General User Profile or in the Con-nect Profile.

The Con-nect Profile is reached

- by pressing PF8 in the General User Profile or in the e-Mail Profile.

General User Profile

```

18:26:26          *** A D A B A S Statistics Facility ***          2008-01-25
USERID          - ASF Utilities and Services Menu -          MUM00001

+-----< Define user-profile for user STANDARD >-----+
!
! Date format      : 2          (1=YYYY-MM-DD,2=DD.MM.YYYY) !
! Decimal character : .          Separating sign      : ,          !
! Kilo if > 1000   : N (Y/N)    Mega if > 1000 k   : N (Y/N)    !
! Stay after save  : Y (Y/N)    Keep environment   : Y (Y/N)    !
!
! Printer name     : PDEFAULT    Char. per line    : 80_         !
! Left margin      : 3__         Print one document: Y (Y/N) !
! Batch output     : 2          (1=seqfile,2=sysout) !
!
! Limit CPU-units  : 1800__     Limit ADA-calls   : 1800__   !
! Get Num.rec.loaded : Y (Y/N)   Accuracy level    : 10         !
! Not used         : N (Y/N)    Start with menu   : Y (Y/N)    !
!
En +-----+
Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
Help More Term          User eMail CONNE          Menu

```

Figure 5-4: Menu for General User Profile Maintenance

Screen selection

The General User Profile is reached

- by selecting the service code "P" in the ASF Utilities and Services menu;
- by typing the command "PROFILE" or "PROFILE STANDARD" or "PROFILE *username*" in the direct command line of any screen;
- by pressing PF6 in the e-Mail Profile or in the Con-nect Profile.

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 (US format), or type 2 to get the format DD.MM.YYYY (European format).

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 gives 26 K, whereas 25499 gives 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 gives 3 M, whereas 2 499 000 gives 2 M.

Stay after save:

This allows you to control the behavior of the SAVE function (PF6 key) in all subsequent screens. If you specify "N", then pressing 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 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.

E-Mail Profile

```

18:32:23          *** A D A B A S  Statistics Facility ***          2008-01-25
USERID          - ASF Utilities and Services Menu -          MUM00001

+-----< Define e-Mail Profile for user STANDARD >-----+
!
! Critical reports are written in SMTP format to Workfile 1
! (if output medium 'PC-File' is marked with 'E').
!
! Sending Domain Name:
! From :
! To(1):
! To(2):
! To(3):
! Only if the critical report contains fields:
! Standard text in the mail:
!
!
!
En !
+-----+
Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
Help More Term          User eMail CONNE          Menu

```


Figure 5-5: Menu for Define e-Mail Profile

Input field description:

Cabinets

When you run a Critical Report with the input field "printer" marked (see the section [Critical Report](#)) 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. 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.

Con-nect Profile

```

18:32:23          *** A D A B A S  Statistics Facility ***          2008-01-25
USERID           - ASF Utilities and Services Menu -             MUM00001

+-----< Define CONNECT Profile for user  STANDARD >-----+
!
! Critical reports are to be sent as memos to 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                User  eMail CONNE                Menu

```

Figure 5-6: Menu for Define Con-nect Profile

Input field description:**Cabinets**

When you run a Critical Report with the input field “printer” marked (see the section **Critical Report**) 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.

Tracing ASF

```

18:34:53          *** A D A B A S Statistics Facility ***          2008-01-25
USERID          - Trace Maintenance -                          MTRACE01

Mk  Nr Description          Mk  Nr Description
-----
-   1 Program trace          -   9 N/A
-   2 General trace information -  10 N/A
-   3 Overflow and error situations - 11 N/A
-   4 Formatted trace information -  12 N/A
-   5 Special Debugging      -  13 N/A
-   6 Full store trace       -  14 N/A
-   7 User exit trace        -  15 N/A
-   8 N/A                    -  16 N/A

Program to be traced : ALL
Program counter.....: 0000000

Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help More Term Off  On   Selct                               Menu ←

```

Figure 5-7: Menu for Define Con-nect Profile

The Menu System is the interactive component of ASF, and allows you to Direct commands for tracing ASF

Direct Command	Purpose
TRACE	Display the Trace Maintenance Menu.
TRACE ?	Display the current status of the trace mode.
TRACE COUNT	Reset the trace program counter.
TRACE NAME <i>prog</i>	Restrict the tracing to the program <i>prog</i> . If <i>prog</i> is omitted or set to ALL, all programs will be traced.
TRACE OFF	Stop the trace mode. All trace levels (1 to 16) are deactivated. The trace counter is reset.
TRACE ON	Start the trace mode. All trace levels (1 to 16) are activated.
TRACE PROG	Start the "Program" trace level. ASF writes the name of each NATURAL program, subprogram, subroutine etc. that it executes. TRACE PROG is equivalent to TRACE 1.
TRACE <i>n</i>	Start trace level <i>n</i> , where <i>n</i> is a number from 1 to 16. The meaning of the various trace levels is displayed in the Trace Maintenance Menu.

Direct Command	Purpose
TRACE OFF	Stop the trace mode. All trace levels (1 to 16) are deactivated.

Interface to SYSRDC

```

18:35:26          ***** NATURAL SYSRDC UTILITY *****          2008-01-25
User USERID          - Main Menu -          XRDCMAIM
Trace started

          Code   Function
          R     Restart trace
          S     Stop trace
          I     Show record information
          L     List trace records
          E     Select trace events
          D     Download trace records
          P     Print trace records
          ?     Help
          .     Exit

Code ..... _
From record .. 1_____ to record .. 999999

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit Start Stop Flip Info List EvSel Down Print Canc
    
```

Figure 5-8: Menu for Trace

Purpose

This screen is used to ...

Screen selection

This screen is reached by selecting the service code “*” in the *ASF Utilities and Services* menu.

6 Application Programming Interface (API)

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- ASFGET01 Usage 156
- ASFGET01 Parameters 158

This chapter covers the following topics:

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). The ASF 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 and Services 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 and Services Menu*.

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.

For FKTCODE "01", ASF sorts the records in the sequence date/time, database ID, file ID. ASF returns the data of all databases and files within the given time frame. The database and file ID specified are used to establish a starting and an ending point. Nevertheless in most cases the first DB/file values returned are the lowest possible values and not the specified ones. This is because ASF stores the time internally more precisely than the units of minutes offered by the API. This means the time value returned is already higher than the specified time and the start values of the DB/file are meaningless. If you use the " $\pm nnnnR$ " (relative records) notation for the date, the returned values start always with given DB/file values. This is because in this case ASF uses the exact internal time stamp for establishing the starting position. See the section [Absolute and Relative Date Format](#) for more information on specifying date formats.

For FKTCODE "02", ASF sorts the records in the sequence database ID, file ID, date/time. ASF returns the data of the given database and file for the time frame specified.

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

- $150 / (\text{number of required ASF fields per record} + 1 \text{ key field}).$

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

- $150 / (2 \text{ ASF data fields} + 1 \text{ key field}) = 50 \text{ records.}$
- Example 2

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

- $150 / (39 \text{ ASF data fields} + 1 \text{ key field}) = 3 \text{ complete records}$

can be processed per ASFGET01 call. Since 3 records require

- $3 * (39 + 1) = 120 \text{ elements,}$

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, and then sets RETURN CODE 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 RETURN CODE 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.

Diagnostic Features

If #TRACE contains the value "TRACE", the ASF trace facility is started. All trace types are activated in this case. The ASF Trace Facility is described in the section Tracing ASF. The #TRACE parameter is optional. If it is omitted when ASFGET01 is called, the trace is not activated.

ASFGET01 Parameters

The call of ASFGET01 in a Natural module has the format

```
CALLNAT 'ASFGET01' #FUNCTION-CODE
                #INPUT-PARAMETERS
                #OUTPUT-PARAMETERS
                #RETURN
                #WORK
                #TRACE /* optional
```

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)
1 #TRACE                (A5) BY VALUE OPTIONAL

```

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	<p>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</p> <p>STORE-TYPE, STORE-PROFIL-ID, FROM-DATE, DB, FILE.</p> <p>The key for the last record required is composed of the fields</p> <p>STORE-TYPE, STORE-PROFIL-ID, TO-DATE, DB, FILE.</p> <p>If TO-DATE is blank, the search continues to the end of the file.</p>
02	<p>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.</p>

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 [Define User Profile](#) in the section 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.

The available field names and units are listed in the section ASF Group and Field Names in the *ASF Examples* documentation. .

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.

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.
0	505	End of records reached.
0	507	Not all of the records found could be displayed.
0	508	Work field has been modified.
1	501	Invalid function code.
1	506	Too many records/ASF data fields requested for a single ASFGET01 call.
1	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.

Parameter 6: TRACE

1 #TRACE (A5) BY VALUE OPTIONAL

If this parameter is specified and contains the value "TRACE", all ASF internal trace types are activated.

If it contains the value "PROG", the ASF program trace is activated.

7 User Fields and User Functions

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This chapter covers the following topics:

Introduction

ASF offers functionalities to define additionally data fields and to combine the reported data in new ways. These functions are performed by user-written routines called *user exits*.

There are 20 fields on the ASF Data record which can be filled by the user. These fields are named *user fields*. Before ASF stores a record on the ASF Data file, the user exit ASFUEXIT is called, where the user fields can be supplied with data. The same user exit is called at every evaluation before the data is displayed. The user exit can fill the user fields with data which is then displayed in the evaluation. In the user exit ASFUEXNA, names of the user fields can be defined.

The user exit ASFUEX01 offers *user functions* to alter the ASF data values displayed in any evaluation. The user exit can contain up to 20 user functions. Two functions are already coded as described in the sections [Displaying Delta Values](#) and [Evaluation within a Time Frame](#). Each user function can be switched on and off in the ASF User Exit Maintenance or by direct commands. In the user exit ASFUEXN1, short descriptions of the user functions can be defined which are then displayed in the User Exit Maintenance.

User Exit Programming

The ASF user exits are Natural subprograms delivered in source and catalog format in the library SYSASF. The executable user exits are named ASFUEX xy ; the delivered source members are named XXXUEX xy , in which xy identifies the user exit. The source name differs from the catalog name, so that new delivered sources do not overwrite members modified by the user.

The following ASF user exits are available:

User Exit	Source	Description
ASFUEXIT	XXXUEXIT	Supply data for user fields before ASF stores the record or when an evaluation runs.
ASFUEXNA	XXXUEXNA	Define the names of the user fields.
ASFUEX01	XXXUEX01	Define user functions which operate on the ASF data when an evaluation runs.
ASFUEXN1	XXXUEXN1	Define the short descriptions of the user functions.

If you want to modify a user exit, perform the following steps:

- Edit the XXXUEX xy subprogram in SYSASF and save it as ASFUEX xy .
- Do *not* modify XXXUEX xy ! It will be overwritten whenever a new ASF release is installed.

- Edit ASFUEX_{xy} and modify it as desired. Stow the modified subprogram.

You should not remove the executable user exit programs from the SYSASF library. ASF always expects to find them, otherwise it fails.

When a user exit (ASFUEXIT or ASFUEX01) is called, the ASF Data record is supplied as input parameter. The ASF Data record consists of three types of data:

- General data
- Database-related data
- File-related data

The ASF Store Program stores one record for a database and one record for each file. Thereby it supplies always the general data. This comprises the technical ASF fields like the store time, the user fields and the database Id and name. Database related data like High-Water-Marks, is only supplied if the FCB-FNR field contains 0, i.e. for a DB record. File related data like TOP-ISN is only supplied if the FCB-FNR field contains a value greater 0, i.e. for a file record. Note that for evaluations of type 1-4 only DB records, for evaluations of type 5-8 only file records, and for Critical Reports and Critical Trends (type 9 and 10) all records are processed.

FCB-FNR	Record	General Data	DB Data	File Data	Evaluation Type
0	DB record	Yes	Yes	No	1-4, 9, 10
≥ 1	File record	Yes	No	Yes	5-8, 9, 10

The following table lists the most important fields of the ASF Data record (ASF-STAMM). The other fields are described in the "DEFINE DATA" statement of the ASF user exit delivered.

Level	Name	Format	Description
1	ASF-STAMM		Full ASF Data record.
2	TIME	T	Store time or synchronized store time (for synchronized records).
2	INV-DATE	P13	Inverted time.
2	REAL-STORE-TIME	T	Real store time.
2	USER	A8	User Id of saver.
2	STORE-TYPE	A2	Store type like "AH" or "DA".
2	PROFIL-ID	P5	Profile 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.

Level	Name	Format	Description
3	USER-FIELD-A	A11/1:10	Alphanumeric user fields.
3	USER-FIELD-P	P11/1:10	Numeric user fields.

User Fields

There are 20 *user fields* in the ASF Data record, 10 alphanumeric and 10 numeric (packed) fields. The user exit ASFUEXIT is provided to fill these fields with data before ASF stores or displays a record.

This section covers the following topics:

- [ASF User Exit ASFUEXIT](#)
- [ASF User Exit ASFUEXNA](#)
- [Example](#)

ASF User Exit ASFUEXIT

The ASF user exit ASFUEXIT is a Natural subprogram which is delivered as source and object module on the SYSASF library. The delivered source is named XXXUEXIT.

The ASF user exit is called twice: once immediately before ASF stores a record, and a second time at the evaluation, when any user field is processed. Field values which are created at the evaluation time are named *virtual fields*, in contrary to *real fields* which are stored on the ASF data record. Real fields are saved permanently on the ASF file; virtual fields are only available during an evaluation.

When you run an evaluation accessing a real field, data is only supplied for records which have been stored after the user exit modification. Virtual fields can be viewed for any kind of data, even before the modification, because the value is calculated at evaluation time.

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 displayed.

When the ASF user exit ASFUEXIT gets control, the input parameters described below are supplied. Input parameters cannot be modified in the ASF user exit.

Level	Name	Format	Description
1	#FIELD-NUMBER	N3	Before a store (create real field): 0 At evaluation (create virtual field): the field number of the user field to be evaluated, i.e. 1-10 for alphanumeric fields, 11-20 for numeric fields.
1	ASF-STAMM		A copy of the full ASF Data record as described above. Do not modify the user fields in ASF-STAMM!

When the user-exit returns control, the output parameters described below are returned 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		User field group
2	#USER-FIELD-A	A11/1:10	Alphanumeric user-fields.
2	#USER-FIELD-P	P11/1:10	Packed user-fields.
1	#RSP	N3	Response code.
1	#MSG	A79	Message (currently not used).

The input field #FIELD-NUMBER indicates why the user exit has been called. If the field has the value "0", the exit has been called immediately before ASF stores the data record, i.e. it is going to create a real field. The fields of the ASF Data record are supplied with their final values by ASF, except the user fields, which are still empty. When the user exit returns control to ASF and 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 than "0", the user-exit has been called during an evaluation, i.e. it is going to create a virtual field. 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 user fields ASF is currently evaluating. The field numbers from 1 to 10 correspond to the alphanumeric fields; the field numbers from 11 to 20 correspond to the numeric fields.

The following table shows lists the ASF user fields as given at an evaluation:

#FIELD-NUMBER	Field Evaluated
1	#USER-FIELD-A(1)
2	#USER-FIELD-A(2)
...	...
10	#USER-FIELD-A(10)
11	#USER-FIELD-P(1)

#FIELD-NUMBER	Field Evaluated
12	#USER-FIELD-P(2)
...	...
20	#USER-FIELD-P(10)

For an evaluation, only 10 digits of a packed user-field are displayed, because one position is reserved for the sign.

When the user exit returns control to ASF and 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 lists the response codes of ASFUEXIT and their meaning at a store and at an evaluation:

Response	Store	Evaluate
0	The record is stored including the user fields supplied by the user exit.	The user field value calculated in the user exit is displayed.
> 0	The record is not stored.	The user field value stored in the ASF Data record is displayed.

Thus, for a store, all user fields are returned to ASF, whereas for an evaluation only one user field is returned, namely the one indicated in the field #FIELD-NUMBER.



Note: *The delivered user exit ASFUEX01 uses the user fields #USER-FIELD-A(1), #USER-FIELD-A(2), #USER-FIELD-A(3) and #USER-FIELD-A(10). See the section [User Functions](#) for more details.*

ASF User Exit ASFUEXNA

The ASF user exit ASFUEXNA is a Natural subprogram which is delivered as source and object module on the SYSASF library. The delivered source is named XXXUEXNA.

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. 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 is not found.

Do not use field names already used by ASF. The names of the ASF fields are outlined in the section ASF Group and Field Names in the *ASF Examples* documentation.

Example

We create a real ASF field containing 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 create a virtual field containing the sum of the commands in the threads 100 to 199.

First copy the Natural subprogram XXXUEXIT to ASFUEXIT, and XXXUEXNA to ASFUEXNA.

Edit ASFUEXNA and define names for both fields. In the DEFINE DATA area, replace the lines

```
(11) <'USER-FIELD-P(01)'\>
(12) <'USER-FIELD-P(02)'\>
```

with the lines

```
(11) <'SPECIAL VALUE  '\>
(12) <'THREAD 100 - 199'\>
```

Edit ASFUEXIT and add the following lines to the LOCAL DATA area:

```
1 #DATE (A10)
1 #TIME (A8)
```

Then replace the executable part of 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
*
* 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 = 126 TO 199    /* 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.

User Functions

The user exit 01 (default name: ASFUEX01) offers up to 20 *user functions* to alter the ASF data values displayed in any evaluation. Each user function can be switched on and off in the ASF User Exit Maintenance or by direct commands as described later in this section.

Two functions are already coded in ASFUEX01 as described in the sections [Displaying Delta Values](#) and [Evaluation within a Time Frame](#). These functions can be used as they are but may also serve as samples how to code a user function.

In the user exit ASFUEXN1, the name of the user exit 01 can be altered and short descriptions of the user functions can be defined. These descriptions are listed in the [User Exit Maintenance](#).

This section covers the following topics:

- [User Exit Maintenance Menu](#)
- [Direct Commands](#)
- [ASF User Exit ASFUEX01](#)
- [ASF User Exit ASFUEXN1](#)

User Exit Maintenance Menu

```

11:04:27          *** A D A B A S  Statistics Facility ***          2008-02-01
USERID          - User Exit Maintenance -                          MUEX0001

Mk  Nr Description          Mk  Nr Description
-----
_   1 Delta values (End-Nuc=EN)    _   11 N/A
_   2 Time frame: 12:00 to 18:00  _   12 N/A
_   3 N/A                          _   13 N/A
_   4 N/A                          _   14 N/A
_   5 N/A                          _   15 N/A
_   6 N/A                          _   16 N/A
_   7 N/A                          _   17 N/A
_   8 N/A                          _   18 N/A
_   9 N/A                          _   19 N/A
_  10 N/A                          _   20 N/A

User Exit Name .....: ASFUEX01
User Exit Savearea .....: EN12001800_____
Savearea Layout .....: ENhmmhmm

      Direct command ==> _____
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help More Term Off  On   Selct                               Menu

```

Figure 6-1: User Exit Maintenance menu

Purpose

This screen lists the user functions available. Selected user functions can be activated or deactivated and the name of the user exit 01 program can be altered. The value of the user exit save area can be modified.

Screen selection

This screen is reached

- by selecting the service code "X" in the ASF Utilities and Services menu;

- by typing the command “ASFUEX” in the direct command line of any screen

Description

The ASF User Exit Maintenance lists the user functions. You can activate a function by marking it with an “X” or any other non-blank character. The function itself is coded in the user exit 01 program as described in the section [ASF User-Exit ASFUEX01](#). The short description of each function which is displayed on the screen can also be defined in a user exit as described in the section [ASF User-Exit ASFUEXN1](#). The same section describes how to set the default name of the user exit 01 program and the initial value and layout of the user exit save area.

The ASF user exit 01 is called if at least one function in the User Exit Maintenance is marked with a non-blank value. The values of the marks are given to the user exit in the parameter data array #UEX (1:20).

If you want to use another program as user exit 01, you can overwrite the “User Exit Name” field. Make sure that your user exit 01 subprogram uses the same parameter data area as ASFUEX01, otherwise ASF will fail.

The sub-program ASFUEX01 is already delivered with two user functions coded. The function “Delta values” is described in the section [Displaying Delta Values](#). The function “Time frame” is described in the section [Evaluation within a Time Frame](#). Both functions use a part of the user exit save area. This is also described in the corresponding sections.

You can switch on (mark with “X”) all functions of the ASF user exit 01 by pressing PF5, or switch off (mark with blank) all functions by pressing PF4.

When you have marked the desired functions or modified any value on the screen, press PF6 for the selection before pressing PF3, otherwise ASF ignores your changes and returns to the calling screen.

The user function remains active until you deactivate it in the User Exit Maintenance or with the direct command “ASFUEX OFF”, or until the end of the Natural session. Other ASF users are not affected, when you activate or deactivate a user function.

Direct Commands

The following direct commands are available for the maintenance of the ASF user functions:

Direct Command	Purpose
ASFUEX	Display the ASF User Exit Maintenance Menu.
ASFUEX ?	Display the current status of the ASF user functions.
ASFUEX OFF	De-activate all ASF user functions.
ASFUEX ON	Activate all ASF user functions.
ASFUEX <i>n</i>	Activate ASF user function <i>n</i> , where <i>n</i> is a number from 1 to 20.

ASF User Exit ASFUEX01

The ASF user exit 01 is a Natural subprogram which is delivered as source and object module on the SYSASF library. The default name of the user-exit is ASFUEX01. The delivered source is named XXXUEX01.

You can also use another Natural subprogram as user exit 01 by changing the default user exit name in the program ASFUEXN1 or by specifying the name in the ASF User Exit Maintenance. If any function in the ASF User Exit Maintenance is marked, but the specified user exit cannot be found, the evaluation will fail with the message

```
Invalid command, or object does not exist in library.
```

In this case check whether you have specified the user exit name correctly.

The ASF user exit 01 is called immediately after ASF has read the data record from the ASF Data file and before it is displayed on the screen, printed or downloaded to a PC. It gets control before the ASF user exit ASFUEXIT is called, which fills the user fields. Because the ASF user exit 01 can modify any ASF data field, the content of the modified fields are in the responsibility of the user. Thus if a user function is activated, the content of the ASF data fields can differ from what is described in the section ASF Group and Field Names in the *ASF Examples* documentation.

When the ASF user exit 01 gets control, the parameters described below are supplied. Input parameters (I) are filled by ASF and cannot be modified. Input/output parameters (I/O) are filled by ASF and can be modified in the user exit. Output parameters (O) are given back from the user exit to ASF. The modifiable parameters can be filled with any value, as long as the corresponding format is respected.

Type	Level	Name	Format	Description
I	1	#EVAL_TYPE	P2	Evaluation type: 1-10
I	1	#P_SATZART	P2	Value of ORIGIN field: NU, TR, ALL
I/O	1	#UEX	A1/1:20	User function marks as specified in the User Exit Maintenance.
I/O	1	#UEX_ANY	L	User exit flag, true if any user function is activated.
I/O	1	#UEX_SAVE	A32	Save area for the user exit.
I/O	1	ASF-STAMM		The ASF Data record as described in the section User Exit Programming .
O	1	#RETURN_CODE	N2	Response code from the user exit.

The #EVAL_TYPE parameter indicates which type of evaluation is currently performed. Possible evaluation types are 1 – 10.

The array #UEX(1:20) contains the user function marks as specified in the User Exit Maintenance. In general, a function is not performed if the corresponding mark is not set (blank). The mark is forwarded unchanged to the user exit, i.e. it can contain a code to perform specific sub-functions

of the user function. You can set and reset the marks in the user exit itself if, for example, the function should be deactivated after a certain event.

The flag #UEX_ANY is set to TRUE if any user function has been activated in the ASF User Exit Maintenance. When control is given to the user exit, this flag is always TRUE, because the exit is only called under this condition. You may set the flag to FALSE at a certain event, to prevent a further calling of the exit.

The field #UEX_SAVE can be used to save values between two succeeding calls to the user-exit. Note that the first user function of ASFUEX01 uses the first two bytes of #UEX_SAVE and the second user function uses the bytes 3 through 10. The values in the save area can be overwritten in the User Exit Maintenance.

The group ASF-STAMM contains the complete ASF Data record as read in from the ASF Data file. The field FCB-FNR contains the Adabas file number. If it is equal to "0" the ASF Data record contains database-related data, otherwise file-related data.

In the delivered ASFUEX01 the user field USER-FIELD-A(10) is filled with the value "UEX_ACTIVE" if any user function is activated. When you add this field to an evaluation profile, it can easily be determined whether a user function has been activated during the evaluation or not.

On return to ASF, the field #RETURN_CODE contains the response code from the user exit. The meaning is as follows:

Response	Meaning
0	The returned values of ASF-STAMM are used for the evaluation.
4	The record is suppressed, i.e. it is not displayed in the evaluation.
8	The evaluation is finished as if the end of the data has been reached.

ASF User Exit ASFUEXN1

The ASF user exit ASFUEXN1 is a Natural subprogram which is delivered as source and object module on the SYSASF library. The delivered source is named XXXUEXN1.

The ASF user exit ASFUEXN1 defines initial values used by the ASF User Exit Maintenance or by the user-exit itself. You can overwrite the initial values as required.

Field	Description
#UEX_PROG	The default name of the ASF user exit 01 program. The value can be overwritten at run-time in the ASF User Exit Maintenance. In the delivered member this name is set to "ASFUEX01".
#UEX_NAME	Short description of the user functions. The descriptions are displayed in the ASF User Exit Maintenance.
#UEX_SAVE	The user exit save area can be used to forward any information to the user exit or to save some values between succeeding calls to the user-exit.

Field	Description
#UEX_SAVE_N	This field describes the layout of the user exit save area. It is displayed in the User Exit Maintenance.

Displaying Delta Values

With the first user function in the delivered user exit ASFUEX01, so-called *delta values* (or *difference values*) can be displayed. When the user function gets control, it reads the previous ASF Data record in the sequence of the time. For all cumulative values like “Number of L9 commands”, it calculates and returns the difference between the two values (current - previous).

Example:

An evaluation has shown the following values for the field “CMD L9”:

TIME	8:00	9:00	10:00	11:00	12:00
CMD L9	110	180	230	240	350

After the activation of the user function “Delta values” in the ASF User Exit Maintenance, the same evaluation would show the following values for the field “CMD L9”:

TIME	8:00	9:00	10:00	11:00	12:00
CMD L9	40	70	50	10	110

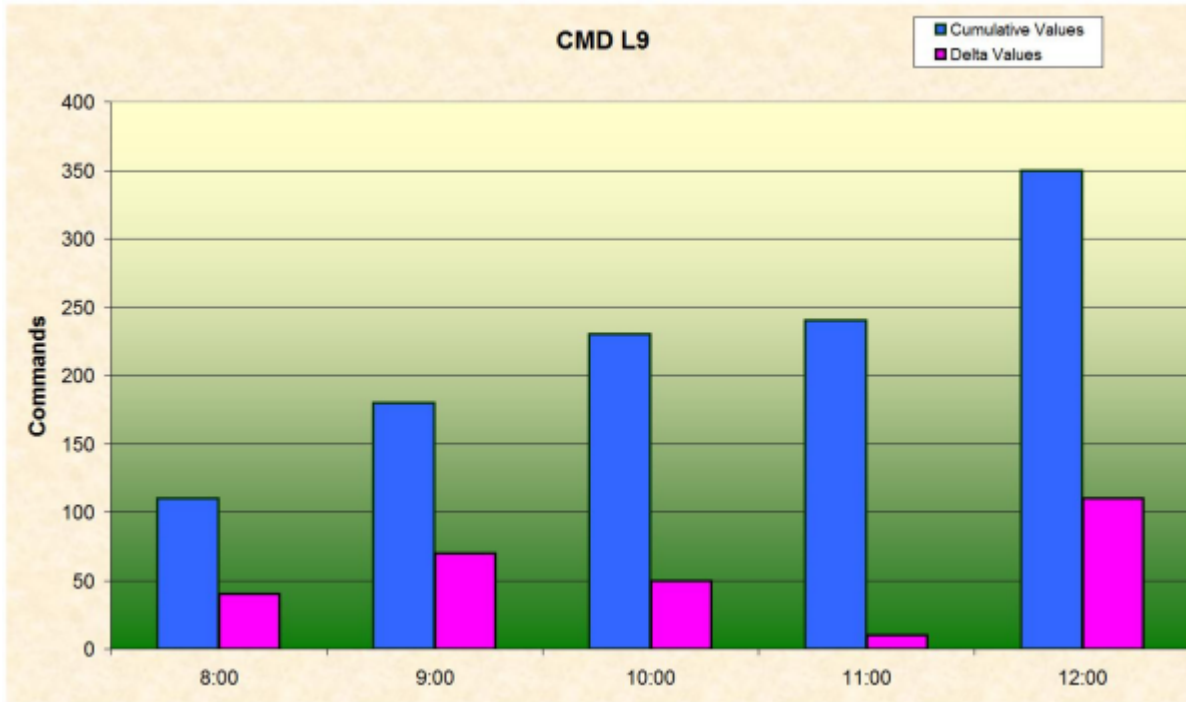


Figure 6-2: Cumulative and delta values

The ASF user function reads one record back, even for the first record displayed. Thus it has found a record (7:00) with 70 L9 commands, giving a difference of 40 commands. If there is no record before the first one, the output of the first record is suppressed, i.e. #RETURN_CODE is set to '4'. In the example there would be no column of "8:00" in this case.

If the Adabas nucleus has been restarted between the two points in time which are used for the calculating, the result of a simple subtraction is not correct (probably a negative value). For this reason the user function compares the values of the nucleus-start-time in both records. In case they are different, it reads all "End-Nucleus" record between the 2 points in time. The store type of the End-Nucleus record can be defined in the ASF User Exit Maintenance by overwriting the first two characters of the user exit save area. The values found are used to correct the delta values calculated before.

The user function uses the first three user fields for returning some additional information:

Field	Description
USER-FIELD-A(01)	The date of the additionally read ASF Data record used for the calculating of the difference.
USER-FIELD-A(02)	The time of the additionally read ASF Data record used for the calculating of the difference.
USER-FIELD-A(03)	Indicates, whether the nucleus has been restarted. Nucleus has been restarted and end-nucleus record found: "EN-Rec_fnd"

Field	Description
	Nucleus has been restarted but end-nucleus record not found: "No_EN-Rec"
	Nucleus has not been restarted: Field is empty



Note: *The differences between the user function "Displaying Delta Values" and the ASF utility "Condense records to delta records" are described in the section [Delta values displayed by the User Exit](#).*

Evaluation within a Time Frame

With the second user function in the delivered user exit ASFUEX01, evaluations can be restricted to a specific time frame. The specified time frame is from 12:00 to 18:00. If this user function is activated, only those values are used in the evaluation, which have been stored in the time from 12:00 to 18:00.

You can define your own default time frame by overwriting the corresponding initial values in the user exit ASFUEXN1. At runtime you can modify the time frame in the ASF User Exit Maintenance. Just overwrite bytes 3 to 6 in the user exit save area with the From-Time (*hhmm*) and bytes 7 to 10 with the To-Time (*hhmm*).

If the From-Time is smaller than the To-Time, the values between the both times are displayed (daytime). If the From-Time is bigger than the To-Time the values outside of the range are displayed (nighttime).

Example

If the user exit save area looks like

```
EN09001800
```

only values between 9 a.m. and 6 p.m. are used in the evaluation.

If the user exit save area looks like

```
EN18000900
```

only values between 6 p.m. and 9 a.m. of the following day are used in the evaluation.

