software AG

Adabas SAF Security

Adabas SAF Security Online Services

Version 7.4.2

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Adabas SAF Security

This document applies to Adabas SAF Security Version 7.4.2 and to all subsequent releases.

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

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1 Adabas SAF Security Online Services

This section describes the use of the AAF Online Services.

AAF Online Services is provided to help set up and monitor the operation of ADASAF. The administrator can view information about the current parameter settings and resource utilization of ADASAF in a given Adabas nucleus. The information can also be accessed using ADASAF operator commands.

The information provided is useful for tuning ADASAF. It includes statistics at both the nucleus and user level. A list of maintenance ZAPs that have been applied, as well as diagnostic information, also can be displayed.

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●	**About SAF Security**	Display overview information about Adabas SAF Security.

2 Using Adabas SAF Security Online Services

Online Services Main Menu

AAF Online Services is available from a Natural application installed in library SYSAAF.

> **Note:** Because of the sensitive nature of ADASAF, you are advised to ensure that the Natural application SYSAAF is well protected using Natural Security.

▶ **to invoke Adabas SAF Security Online Services**

■ select Adabas SAF Security (option 9) from the AOS main menu,

Or:

log on to SYSAAF and enter the command MENU.

The Main Menu screen will then appear:

```
09:15:03    *****  A D A B A S SAF SECURITY SERVICES  7.4.2   *****    2003-05-06
                      - Main Menu -                                    A1000M1

                          Code    Options
                          ----    -----------------------
                           1      System Statistics
                           2      User Statistics
                           3      Zap Display
                           4      Storage Display
                           5      System Tracing
                           6      Server Restart
                           8      System Parameters
                           9      About SAF Security
                           .      Exit
                          ----    -----------------------
              Code......   : ___              You can easily switch around the
              Database ID  : 153              tools for Fastpath, Vista, etc., by
              Nucleus ID   : ___              use of the PF Keys shown, or use
  System Coordinator Node : ___              the codes COR, AFP, AVI, AAF,ATM
              User ID      : ___              as commands - anytime.
Command ==>
  Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help        Exit              COR   AFP   AVI         ATM         Vers
```

To select an option, enter a code and a Database ID. To communicate with ADASAF in a particular nucleus running as part of an ADAPLEX II or ADASMP cluster, enter the Nucleus ID as well as the Database ID. Alternatively, if you do not know the available Nucleus IDs, enter the Database

ID and the node number of the Adabas System Coordinator daemon for that cluster to obtain a list of active Nucleus IDs for the database, from which you may select one.

For User Statistics (option code 2), also enter a User ID if you wish to view statistics for an individual user without first displaying the list of active users.

From the main menu, you may switch to the online systems of Adabas System Coordinator (PF6), Adabas Fastpath (PF7), Adabas Vista (PF8), or Adabas Transaction Manager (PF10), by pressing the appropriate PF key. You may also switch from any screen with a `Command ==>` line by entering the appropriate three-character code as a command.

PF12 can be used to display a list of installed versions of SYSAAF. To select the required version, mark it with any non-blank character. The default is to use the latest installed version. The ADASAF demo INPL is supplied with Adabas and is converted to full licensed mode by installing the INPL dataset supplied with ADASAF. If any of the versions on the screen are followed by (D), it indicates that only the demo INPL was installed for that version. The online services version selected will work with the same or later versions of ADASAF in a protected nucleus.

The following options are available:

Option	Description
System Statistics	Provides statistics at the database level.
User Statistics	Provides statistics for users.
Zap Display	Display zap information.
Storage Display	Display internal storage information.
System Tracing	Display trace information.
Server Restart	Restart server.
System Parameters	Display system parameters.
About SAF Security	Display product overview information.

Navigation

- Navigation

- Entering Commands

Navigation

From the main menu, you enter an option code, an ADASAF-protected Database ID, and an optional user ID. To move from one option to another, you can return to the main menu using PF12 , or enter the number of the desired target option in the command line.

Entering Commands

The command line in the SYSAAF screens is useful for jumping quickly from one function to another. For example, entering the value 2 on the command line will invoke the User Statistics option. If you enter an invalid number, you are returned to the main menu.

You can also use the command line to change the ID of the database that you are monitoring without returning to the main menu. Enter the `dbid=nnnnn` (this can be abbreviated to `db=`). For example, `dbid=12345` or `db=12345`. Alternatively, you can change the Database ID by simply overtyping it on any screen.

Any other command is passed to Natural.

Using PF Keys

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

In list functions, PF7 (Up) and PF8 (Down) scroll up and down the list, PF6 (Top) returns to the top of the list, and PF9 (Bttm) goes to the end of the list. PF9 is available only in the system trace display.

Help Information

▶ **To invoke help information**

■   Press PF1.

The help screen that appears applies to the current screen and may comprise several pages. From each help screen, you can access lower level options or return to previous, higher levels.

3 Database Level Statistics

This option provides statistics at the database level.

```
09:18:08   *****   A D A B A S SAF SECURITY SERVICES  7.4.2   *****   2003-03-10
                     -  Database Level Statistics  -                  A1100M1

                   Database :  153
              Buffer Size (k):  128        Address:     10241000
              System initialized on: 2000-09-07 at:     08:53:56

SAF Statistics:
 Authorization    Check (+ve)  Check (-ve)  Check Saved   Overwrites    Lngth
 ADABAS  (Normal)        2          0            6            0         17
 ADABAS  (Xlevel)        2          0            4            0         17

 Active Users :   1        Overwrites  : 0          Max Users : 2
 Free Users   : 179        Allocations : 2

Cached File Area Statistics:
 Address      : 10167248    High Water : 101672F8    Max Used  : 2
 First Free   : 101672F8    Last Used  : 10167248    Curr Used: 1
 Files/entry  : 10          Overwrites : 0           Saved    : 2

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help       Exit                                                Menu
```

The following information is provided:

Field	Description
Database	The database number.
Buffer	The amount of storage (in kilobytes) to be used for caching user information related to the security system. For more information, see the parameter `GWSIZE`.
Address	Address in memory of the SAF Server cache.
System initialized	Date and time system was last initialized.
SAF Statistics:	Effectiveness of the SAF Server cache. Shows information for normal and cross-level checks:
Authorization	Indicates type of authorization (normal or cross-level).
Check (+ve)	The number of successful authorizations against the external security system.
Check (-ve)	The number of failed authorizations against the external security system (access denied).
Check Saved	The number of times the SAF Server satisfied an authorization request from its cache, without calling the external security system.
Overwrites	The number of times the SAF Server had to overwrite a previously cached authorization request. If this number is high, consider increasing `DBNCU` and/or `NWNCU`.
Lngth	The length of the resource profile names.
Active Users	The current number of active users.
Overwrites	The number of active entries that had to be overwritten.
Max Users	The maximum number of active users.
Free Users	The number of free user areas.
Allocations	The number of times a user area was allocated.
Cached File Area Statistics	Effectiveness of ADASAF's Cached File Area (CFA)
Address	Address in memory of the CFA.
High Water	The highest used address in the CFA.
Max Used	Maximum used CFA entries.
First Free	Address of first free CFA entry.
Last Used	Address of highest used CFA entry.
Curr Used	Current number of used CFA entries.
Files/entry	Number of files cached in each CFA entry.
Overwrites	The number of times ADASAF had to overwrite a previously cached file. If this number is high, consider increasing `MAXFILES`.
Saved	The total number of times ADASAF satisfied an authorization request without calling the SAF Server or the external security system.

4   **User Statistics**

This option provides information on active users.

List of Active Users

Selecting code 2 from the main menu causes a list of active users to be displayed (unless a User ID parameter was also specified, in which case the User Statisitics screen will be displayed).

```
09:18:54   *****    A D A B A S SAF SECURITY SERVICES 7.4.2    *****   2003-03-10
                     -  User List For Database:  153  -                 A12000M1

                    C     User ID      Date           Time
                    -     UKSJU        2003-03-07    09:01:17
                    -     DAEFCODE     2003-03-07    09:07:19
                    -     UKKXM        2003-03-07    09:07:19




Mark with S(tatistics), C(ached Files), R(eset), L(ogoff)
Top of List
 Command  ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
     Help        Exit  Refr                                              Menu
```

In the Command (C) column, enter S to view a user's statistics, C to view a user's cached file details, R to reset that user's statistics, or L to log the user off, which will discard the user's cached security information.

User Statistics

The user statistics screen shows the number of times that the security system was called for the selected user and gives information on the number of successful and unsuccessful verifications made against the external security system. It also shows the number of verifications satisfied from the resource profile cache, the number of times an entry for this user was overwritten, and the current number of cached checks for this user.

```
09:19:37   *****   A D A B A S SAF SECURITY SERVICES 7.4.2   *****  2003-03-10
                  - User Statistics For Database: 153  -            A12100M1

     User ID: DAEFCODE

     Initialized from:  Adabas Cross-Level    on: 2003-03-07  At:  09:01:17


Authorization     Check (+ve)  Check (-ve)  Check Saved  Overwrites    Active
ADABAS (Normal)            2            0            0            0         0
ADABAS (Xlevel)            0            0            4            0         2




Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
     Help        Exit        Lgoff                                       Menu
```

Pressing PF5 will remove this user and associated security information from ADASAF.

User Cached Files

This screen shows, for a given SAF user, the Adabas Internal ID for the user, the Cross Level ID under which the user is operating, the effectiveness of ADASAF's cache for this user, as well as the cached files and access levels currently held for the user.

A SAF user may have more than one cache entry, for example when accessing a database from different jobs. PF10 can be used to scroll through the cache entries for that user.

```
09:20:40   *****   A D A B A S SAF SECURITY SERVICES 7.4.2   *****  2003-03-10
                  - User Cached Files for Database: 153 -           A12100M1

Communication ID:  000D710020640014040404040404040404000F7AA00EE2D1E44040404F2
SAF User ID    :  UKKXM
Cross Level ID :  DAEFCODE

Saved Checks   : 288
Number of Files : 3
Last File Access: 5
Overwrites     : 0

File Details
 File L   File L  File L  File L  File L  File L  File L  File L
```

```
    5 R      11 R     12 R



Command  ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
     Help       Exit                                      Next       Menu
```

5 ZAP Display

This option can be used to display a list of applied ZAPs. This information may be requested by your Software AG technical support representative for problem diagnosis.

```
09:22:10   *****    A D A B A S SAF SECURITY SERVICES  7.4.2  *****    2003-03-10
                 -   SAF Zaps applied To Database: 153  -              AI3000M1


    1  ---     3  ---   ---    6  ---    8  ---   ---   ---   ---   ---   ---   ---   ---
  ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---
  ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---
  ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---
  ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---




  Command  ==>
  Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
               Exit                                                        Menu
```

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6 Internal Storage Display

This option is used to display certain ADASAF internal storage areas. You can scroll the display or position to a given location by entering it in the `Address` field.

```
09:22:42        *****   A  D  A  B  A  S  SAF SECURITY SERVICES 7.4.2 *****      2003-03-10
                        -   Display Storage for Database: 153   -            A14000M1


 Address       <-----------Memory Contents---------> Offset       Characters
 00000000 *   034A5000 I D5C1F2E2 C9C1F3F1 AD1FF257 ADEB7211 I  NA2SIA310?2 O   ?
 00000010 *   034A5010 I 00003000 034A5000 034A5000 034A8000 I    ? ?$& ?$& ?$
 00000020 *   034A5020 I 000A2B00 034A5E28 034A7C64 00000000 I   ??   ?$;??$@a
 00000030 *   034A5030 I 00000000 00000000 00000000 00000000 I
 00000040 *   034A5040 I 00000000 00000000 00000000 00000000 I
 00000050 *   034A5050 I 00000000 00000000 00000000 00000000 I
 00000060 *   034A5060 I 00000000 00000000 00000000 00000000 I
 00000070 *   034A5070 I 410000F2 00000000 01240008 0000000C I  [  2     ?? ?    ?
 00000080 *   034A5080 I 00040002 00020002 00020001 00000000 I  ? ? ? ? ? ?
 00000090 *   034A5090 I 00080020 000D0018 00080020 00000000 I  ? ? ? ? ? ?
 000000A0 *   034A50A0 I 0034004C 0024003C 001C0028 00000000 I  ? < ? ? ? ?
 000000B0 *   034A50B0 I 00E00114 01600184 01C001DC 02040204 I  \???-?d?{? ????
 000000C0 *   034A50C0 I 00000002 00000000 00000000 00000002 I   ?        ?
 000000D0 *   034A50D0 I 00000000 00000000 00000000 00000000 I
 000000E0 *   034A50E0 I 00000002 00000000 00000000 00000005 I   ?        ?
 000000F0 *   034A50F0 I 00000000 00000000 00000000 00000000 I
    Address  :


 Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
     Help        Exit                            Fwd                      Menu
```

7 Trace Display

This option can be used to display the last 256 trace points taken. You may be asked to provide this information by your Software AG technical support representative.

```
09:24:24  *****  A D A B A S SAF SECURITY SERVICES 7.4.2  *****  2003-03-10
              -  Display Trace For Database: 153   -             A15000M1


   Pos  ID Description of Trace Point
   177  3F LOGGING ROUTINE COMPLETED
   178  90 STORAGE REQUEST - ENTERED
   179  9F STORAGE REQUEST COMPLETE
   180  30 LOGGING ROUTINE ENTERED
   181  3F LOGGING ROUTINE COMPLETED
   182  90 STORAGE REQUEST - ENTERED
   183  9F STORAGE REQUEST COMPLETE
   184  30 LOGGING ROUTINE ENTERED
   185  3F LOGGING ROUTINE COMPLETED
   186  90 STORAGE REQUEST - ENTERED
   187  9F STORAGE REQUEST COMPLETE
   188  30 LOGGING ROUTINE ENTERED
   189  3F LOGGING ROUTINE COMPLETED
   190  A0 USER LIST - REQUEST ENTERED
   191  A1 USER LIST - BEGIN AT START
   192  A3 USER LIST - PAGE OF USERS RETURNED OR END OF LIST



 Command ==>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Refr                  FWD  Bot                Menu
```

8   Server Restart

This option can be used to restart ADASAF in the specified nucleus. It results in the discarding of any cached security information, rereading security parameters, and restarting security operation. This option is useful if you need to change any security parameters without stopping and restarting the database.

9 System Parameters

This option can be used to display the system parameters in effect for this nucleus.

```
09:51:15    *****    A D A B A S SAF SECURITY SERVICES  7.4.2    *****   2003-03-10
                   - SAF System Configuration Parameters  -            A18000M1

Assembled:  02-12-02  Version:  07.04.01

 Database:  153

Authorization       Class/Type    Universal     Max Kept       SMF Log
ADABAS (Normal)      ADASEC          N              10              0
ADABAS (Xlevel)      ADAXLV          N              10              0


Buffer(k) : 128     Message Level .:  3  Caching....:  Y   Warn  Mode:  F

Ciphers   : N       Cached files...: 10  Xlevel.....:  2   ET Data ..:  Y

Passwords : N       Max Cipher/Pwds: 10  Logoff.....:  N   Remote    : POPUP

ABS.......: 2       DBID/Fnr format: 1   Notoken....:  N


Command  ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help       Exit                                                   Menu
```

The following information is provided:

Field	Description
Assembled / Version	The date and time when the parameter module was assembled.
Database	The database number.
Authorization	Indicates type of authorization (normal or cross-level).
Class/Type	The security class being used. For more information, see the parameters `DBCLASS` and `NWCLASS`.
Universal	Whether or not universal access is allowed.
Max Kept	The number of files for which security information is to be cached for each user. For more information, see the parameters `DBNCU` and `NWNCU`.
SMF Log	Not used.
Buffer	The amount of storage (in kilobytes) to be used for caching user information related to the security system. For more information, see the parameter `GWSIZE`.
Message Level	The tracing level for database security checks. For more information, see the parameter `GWMSGL`.
Caching	Indicates whether or not caching of security information is in effect.
Warn Mode	Warn mode (warning or fail).
Ciphers	Indicates whether or not ADASAF should extract Adabas cipher codes from RACF and apply them to the relevant Adabas commands. For more information, see the parameter `CIPHER`.
Cached Files	The number of files for which security information is to be cached for each user. For more information, see the parameter `MAXFILES`.
Xlevel	The type of database cross-level security checking to be performed For more information, see the parameter `XLEVEL`.
ET Data	Indicates whether or not ADASAF should protect commands that access or create `ET` data. For more information, see the parameter `ETDATA`.
Passwords	Indicates whether or not ADASAF should extract Adabas passwords from RACF and apply them to the relevant Adabas commands. For more information, see the parameter `PASSWORD`.
Max Cipher/Pwds	The maximum number of passwords and cipher codes to be extracted from RACF for the current Adabas nucleus. For more information, see the parameter `MAXPCC`.

Field	Description
Logoff	Indicates when ADASAF should log off users from the SAF security system. For more information, see the parameter `LOGOFF`.
Remote	The mechanism ADASAF should use to protect calls from remote users. For more information, see the parameter `REMOTE`.
ABS	The level of Adabas Basic Services protection. For more information, see the parameter `ABS`.
DBID/Fnr format	The format of the Database ID and file number in resource profiles. For more information, see the parameter `DBFLEN`.
Notoken	Indicates whether or not calls from unsecured mainframe clients are to be allowed. For more information, see the parameter `NOTOKEN`.

10 About ADASAF Security Services

This option can be used to display an overview of Adabas SAF Security Services. This screen can also be displayed by pressing PF1 on the main menu.

```
09:26:43  *****   A D A B A S SAF SECURITY SERVICES  7.4.2   *****  2003-03-10
                  -   About Adabas SAF Security   -               A19000M1


Welcome to Adabas SAF Security
This Adabas option allows you to integrate Adabas with a central security
repository such as RACF, CA-ACF2 or CA-TopSecret.

ADASAF provides all the safeguards you would expect for:
* Database nuclei                       * Database files
* Database access/update commands     * Adabas utilities
* Console operator commands


In addition ADASAF provides:

* Optional consideration of the originating job as well as user, known as
  Cross-level Checking, allowing differentiation between a user running in
  production and that same user running in development
* Protection of transaction data for ET, RE, OP and CL commands
* Storing of Adabas passwords and cipher codes in the security repository
* Adabas Fastpath compatibility and utility sensitivity


                 Press any key to continue
```

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