# **Adabas SAF Security Configuration Parameters**

This document describes the Adabas SAF Security configuration parameters.

#### **Caution:**

Because of the sensitivity of SAF security, the ability to change the configuration module or the DDSAF dataset must be tightly controlled by the external security system.

- ADASAF Parameters Specified in Configuration Module SAFCFG
- Overriding ADASAF Parameters Using DDSAF Data Set
- ADASAF Daemon Parameters Specified in Configuration Module SAFCFG

# ADASAF Parameters Specified in Configuration Module SAFCFG

This section describes the site-dependent parameters which are used by ADASAF when operating in an Adabas nucleus or utility. These parameters are specified using an assembled configuration module SAFCFG. SAFCFG is supplied as part of the SAF Security Kernel on the Adabas limited libraries.

#### Note:

The default value for each ADASAF parameter is underlined in the parameter syntax definition.

- AAFPRFX: Use Resource Name Prefix
- ABS: Adabas Basic Services Level Protection
- ADASCR: Use Logon ID of Security Package as Adabas Security Password
- CIPHER: Extract Adabas Cipher Codes from RACF
- DBCLASS: Database Resource Class Name
- DBFLEN: Format of Database ID and File Number in Resource Profiles
- DBNCU: Number of Database Checks to be Buffered Per User
- DBUNI: Allow Access to Undefined Adabas Resources
- DELIM: Delimiter Usage for Entity Names
- ETDATA: Protect Commands Which Access or Create ET Data
- FILETAB: Name of Load Module Containing Grouped Resource Names
- GROUP: Use Group ID for Resource Authorization Checking

- GWMSGL: Trace Level for Database Security Checking
- GWSIZE: Storage Size for Caching User Information
- GWSTYP: Adabas SAF Security Type
- HOLDCMD: Access Requirement For Commands Which Place Records On Hold
- LFPROT: Protect LF (Read FDT) Command
- LOGOFF: Logging Off ADASAF Users
- MAXFILES: Maximum Number of Files to be Cached Per User
- MAXPCC: Maximum Number of Passwords and Cipher Codes
- NOTOKEN: Allow Calls from Unsecured Mainframe Clients
- NWCLASS: Class Name for Cross-Level Checking
- NWNCU: Number of Database Checks to be Buffered per Cross-Level User
- NWUNI: Allow Access to Undefined Adabas Resources for Cross-Level Checking
- NWUSRW: User ID for Security Checking for Workstation Users
- PASSWORD: Extract Adabas Passwords from RACF
- PCPROT: Protect PC (Invoke Stored Procedure) Command
- REMOTE: Mechanism for Protecting Calls from Remote Users
- SAFPRINT: Security Check Trace Message Printing
- WTOCASE: Mixed or Upper Level Case for ADASAF Prefix Messages
- XLEVEL: Type of Database Cross-Level Security Checking

## **AAFPRFX: Use Resource Name Prefix**

Parameter	Description	Syntax
AAFPRFX	Enter a 1 to 8 character prefix which will be used as the first element of any resource profile names checked by Adabas SAF Security.	AAFPRFX=xxxxxxxx
	For example, specifying AAFPRFX=TEST, DBFLEN=1, DELIM=Y will cause accesses to database 153, file 12 to be checked against a resource profile named TEST.CMD00153.FIL00012.	
	The default is no prefix.	
	<b>Note:</b> The prefix specified in SAFCFG may be overridden by DDSAF input. However, because DDSAF is not used for utilities, the nucleus and utility start checks are performed using the prefix defined in SAFCFG.	

## **ABS: Adabas Basic Services Level Protection**

Parameter	Description	Syntax
ABS	Level of protection for Adabas Basic Services:	
	• 0: disables ADASAF protection for Adabas Basic Services	ABS={0  1   2 }
	• 1: ADASAF is to protect main functions only	
	• 2: ADASAF is to protect both main and subfunctions	
	See also the section Adabas Basic Services.	

# ADASCR: Use Logon ID of Security Package as Adabas Security Password

Parameter	Description	Syntax
ADASCR	Indicates whether or not the Logon ID of the security package is to be used as the Adabas Security password.	$ADASCR=\{\underline{N}   Y   G \}$
	• N: the Logon ID of the security package is not to be used as the Adabas Security password	
	• Y: the Logon ID is placed in the Additions 3 field of the Adabas control block for use by Adabas	
	• G: the caller's SAF group is placed in the Additions 3 field of the Adabas control block for use by Adabas.	

Parameter	Description	Syntax
CIPHER	Indicates whether or not ADASAF should extract Adabas cipher codes from RACF and apply them to the relevant Adabas commands.	$CIPHER=\{\underline{N}   Y \}$
	• N: ADASAF should not extract Adabas cipher codes from RACF and apply them to the relevant Adabas commands	
	• Y: ADASAF will extract Adabas cipher codes from RACF and apply them to the relevant Adabas commands	

#### **CIPHER: Extract Adabas Cipher Codes from RACF**

#### **DBCLASS: Database Resource Class Name**

Parameter	Description	Syntax
DBCLASS	The name of the ADASAF database resource class name. The name can be up to eight alphanumeric characters.	DBCLASS={ name   <u>ADASEC</u> }

#### **DBFLEN:** Format of Database ID and File Number in Resource Profiles

Parameter	Description	Syntax
DBFLEN	The format of the Database ID and file number in resource profiles:	DBFLEN={ 0   <u>1</u>   2 }
	• 0: 3 digits with leading zeroes	
	• 1: 5 digits with leading zeroes	
	• 2: up to 5 digits with leading zeroes suppressed	
	The default value is recommended to simplify reporting and maintenance of security profiles; to allow for the large Database IDs and file numbers introduced with Adabas version 6; and to allow for ET data protection, if required.	

#### **DBNCU:** Number of Database Checks to be Buffered Per User

Parameter	Description	Syntax
	The number of database checks to be buffered per user, in the cache defined by GWSIZE. These buffered checks are used to avoid repeated SAF calls for a user when LOGOFF=NEVER or LOGOFF=TIMEOUT is specified.	DBNCU=0

Parameter	Description	Syntax
DBUNI	<ul> <li>Indicates whether or not access to undefined Adabas resources should be allowed. The normal mode of operation is to prevent access to resources not defined to the security system. Profiles representing Adabas resources are added to the security repository with either a default access or by granting access to specific users and groups.</li> <li>N: access to undefined Adabas resources is not allowed</li> <li>Y: access to undefined Adabas resources is allowed</li> <li>Note:</li> <li>This option does not permit access to resources defined with universal access "none".</li> <li>Note:</li> <li>DBUNI is ignored when checking whether a nucleus or utility is allowed to execute.</li> </ul>	DBUNI={ <u>N</u>   Y }

#### **DBUNI:** Allow Access to Undefined Adabas Resources

#### **DELIM: Delimiter Usage for Entity Names**

Parameter	Description	Syntax
DELIM	<ul> <li>Use of delimiter when defining an entity name.</li> <li>N: the entity name begins with ACC for access commands and UPD for update commands and does not contain a full stop (period) delimiter</li> </ul>	DELIM={ N   Y}
	• Y: the entity name begins with CMD and has a full stop (period) delimiter between the Database ID and file number	

### **ETDATA: Protect Commands Which Access or Create ET Data**

Parameter	Description	Syntax
ETDATA	Indicates whether or not ADASAF should protect commands that access or create ET data.	ETDATA={ N   $\underline{Y}$ }
	• N: ADASAF should not protect commands that access or create ET data	
	• Y: ADASAF should protect commands that access or create ET data	
	This parameter is only honored if fixed-length Database IDs and file numbers are used in the resource profile names (that is, the DBFLEN parameter specifies 0 or 1). File number 00000 (DBFLEN=1) or 000 (DBFLEN=0) is checked for the relevant database. RE commands need read access; OP commands with Command Option 2 set to E need read access; ET, CL, and C3 commands with Command Option 2 set to E need update access.	

# FILETAB: Name of Load Module Containing Grouped Resource Names

Parameter	Description	Syntax
FILETAB	The name of the load module containing grouped resource names for this nucleus. Grouped resource names can be used instead of database/file number when checking access to an Adabas file. The load module is created using the AAFFILE macro (see Defining Grouped Resource Names with AAFFILE in the section Accessing and Changing Database Data) and its name must be a valid load module name of up to 8 characters. The default is not to use grouped resource names.	FILETAB=XXXXXXXX

## **GROUP: Use Group ID for Resource Authorization Checking**

Parameter	Description	Syntax
GROUP	Indicates whether or not the Group ID rather than the User ID is to be used for resource authorization checking.	GROUP={ <u>N</u>   Y }
	• N: Group ID is not to be used for resource authorization checking	
	• Y: Group ID is to be used for resource authorization checking	

Parameter	Description	Syntax
GWMSGL	The tracing level for database security checks.	
	• 0: no tracing	GWMSGL={ 0   <u>1</u>   2   3 }
	• 1: trace violations only	
	• 2: trace successful checks only	
	• 3: trace all checks	
	For easier problem diagnosis and auditing, trace messages include a time stamp and the name of the job that issued the Adabas call.	
	Trace information is also accumulated in the System Coordinator trace facility, if active.	

# **GWMSGL: Trace Level for Database Security Checking**

# **GWSIZE: Storage Size for Caching User Information**

Parameter	Description	Syntax
GWSIZE	The amount of storage (in kilobytes) to be used for caching user information related to the security system, for example checked entity names. For optimum performance in conjunction with LOGOFF=NEVER   TIMEOUT, ensure that GWSIZE is large enough to allow effective caching. For more information, see the description of LOGOFF and the topic Caching of Security Checks in section Accessing and Changing Database Data.	WAL 812: GWSIZE=16 WAL 813 and above:
		GWSIZE=256

# **GWSTYP: Adabas SAF Security Type**

Parameter	Description	Syntax
GWSTYP	The SAF security type.	
	• 1: RACF	GWSTYP={ <u>1</u>   2   3   4 }
	• 2: CA-Top Secret	
	• 3: CA-ACF2	
	• 4: RACF executing on a Fujitsu operating system.	

# HOLDCMD: Access Requirement For Commands Which Place Records On Hold

Parameter	Description	Syntax
HOLDCMD	Determines whether hold commands (L4, L5, L6, S4 and HI) require READ access (the default) or UPDATE access. You may decide to require UPDATE access to prevent inadvertent holding of records by clients who only have READ access impacting clients who have genuine UPDATE access.	HOLDCMD={ <u>R</u>   U }

### LFPROT: Protect LF (Read FDT) Command

Parameter	Description	Syntax
LFPROT	Specify whether or not the LF command is protected.	LFPROT={ $\underline{Y} \mid N$ }
	• Y: the SAF User ID which issued the LF command must have read access to the relevant file	
	• N: no security check is performed for LF commands	

# LOGOFF: Logging Off ADASAF Users

Parameter	Description	Syntax
Parameter	<ul> <li>Indicates when ADASAF should log off users from the SAF security system.</li> <li>ALWAYS: ADASAF is to log off the user whenever the associated Adabas user session ends, either because of a Close command or because the Adabas user has been stopped or timed out.</li> <li>NEVER: ADASAF is to log off the</li> </ul>	Syntax         WAL 812:         LOGOFF={ <u>ALWAYS</u>   NEVER   TIMEOUT }         WAL 813 and above:         LOGOFF={ ALWAYS   NEVER   TIMEOUT }
	<ul> <li>user only when the user's memory (in the cache specified by GWSIZE) needs to be allocated to a new user.</li> <li>TIMEOUT: ADASAF is to log off the user only when the associated Adabas user session has been timed out or stopped.</li> </ul>	
	The settings LOGOFF=NEVER and LOGOFF=TIMEOUT will substantially reduce SAF overheads in databases where users often issue Close commands and then start a new session. However, it may be necessary to increase GWSIZE to provide enough memory to save the user details across Close commands.	
	Use the Adabas session statistics "Number of users participating" and "Number of commands executed" to decide whether LOGOFF=NEVER or LOGOFF=TIMEOUT should be used. If the number of commands per user is relatively low, consider setting LOGOFF=TIMEOUT and then using ADASAF's Online Services to monitor the effectiveness of GWSIZE: option 1 shows the number of allocations (new users created) and overwrites (old users deleted); if these are high, increase GWSIZE.	
	If the Adabas non-activity timeout values are such that users are frequently timed out, set LOGOFF=NEVER rather than LOGOFF=TIMEOUT.	

## **MAXFILES: Maximum Number of Files to be Cached Per User**

Parameter	Description	Syntax
MAXFILES	The number of files for which security information is to be cached for each user. If a user accesses more than this number of files, the oldest entries will be overwritten.	MAXFILES={ nnnn   <u>16</u> }

#### **MAXPCC: Maximum Number of Passwords and Cipher Codes**

Parameter	Description	Syntax
MAXPCC	The maximum number of passwords and cipher codes to be extracted from RACF for the current Adabas nucleus. If ADASAF finds more than this number, nucleus initialization is terminated with message AAF010.	MAXPCC={ nnnn   <u>16</u> }

#### **NOTOKEN: Allow Calls from Unsecured Mainframe Clients**

Parameter	Description	Syntax
	<ul> <li>Indicates whether or not calls from unsecured mainframe clients are to be allowed. An unsecured mainframe client is a client operating in an environment that does not provide security information via the Adabas router. For example, a remote Lpar where the router has not been linked with the SAF security extensions (SVCSAF) or a CICS job that is using an Adabas link globals module that specifies SAF=NO.</li> <li>N: Calls from unsecured mainframe clients are not to be allowed</li> <li>Y: Calls from unsecured mainframe clients are to be allowed</li> </ul>	NOTOKEN={ <u>N</u>   Y }
	<b>Caution:</b> It is strongly recommended not to use NOTOKEN=Y since this may allow unauthorized access to or updating of Adabas data. NOTOKEN=Y is only intended for extremely short-term use during a phased implementation of Adabas SAF Security.	

#### **NWCLASS: Class Name for Cross-Level Checking**

Parameter	Description	Syntax
NWCLASS	The name of the ADASAF database resource class name for use in cross-level checks. The name can be up to eight alphanumeric characters.	NWCLASS={ name   <u>ADASEC</u> }

# NWNCU: Number of Database Checks to be Buffered per Cross-Level User

Parameter	Description	Syntax
NWNCU	The number of database checks to be buffered per cross-level user, in the cache defined by GWSIZE.	NWNCU= <u>0</u>

# NWUNI: Allow Access to Undefined Adabas Resources for Cross-Level Checking

Parameter	Description	Syntax
NWUNI	<ul> <li>Indicates whether or not access to undefined Adabas resources should be allowed for cross-level checks. The normal mode of operation is to prevent access to resources not defined to the security system. Profiles representing Adabas resources are added to the security repository with either a default access or by granting access to specific users and groups.</li> <li>N: access to undefined Adabas resources is not allowed for cross-level checks</li> <li>Y: access to undefined Adabas resources is allowed for cross-level checks</li> <li>Note:</li> <li>This option does not permit access to resources defined with universal access "none".</li> </ul>	NWUNI={ <u>N</u>   Y }

# **NWUSRW: User ID for Security Checking for Workstation Users**

Parameter	Description	Syntax
	The User ID to be used for database cross-level security checks issued on behalf of workstation users.	NWUSRW= <u>WINUSER</u>

# PASSWORD: Extract Adabas Passwords from RACF

Parameter	Description	Syntax
PASSWORD	Indicates whether or not ADASAF should extract Adabas passwords from RACF and apply them to the relevant Adabas commands.	$PASSWORD = \{ \underline{N}   Y \}$
	• N: ADASAF should not extract Adabas passwords from RACF and apply them to the relevant Adabas commands	
	• Y: ADASAF should extract Adabas passwords from RACF and apply them to the relevant Adabas commands	

Parameter	Description	Syntax
PCPROT	Specify whether or not the PC command is protected.	$PCPROT = \{ \underline{N} \mid R \mid U \}$
	• N: no security checking of the PC command	$\frac{PCPROI=\{ \underline{N} \mid R \mid 0\}}{PCPROI}$
	• R: the SAF User ID which issued the PC command must have READ access to the file specified in the PC command	
	• U: the SAF User ID which issued the PC command must have UPDATE access to the file specified in the PC command	
	Note:	
	This configuration option has no influence on checking of commands issued by stored procedures. Those commands	
	are always checked for the appropriate security access to the appropriate resource.	

#### PCPROT: Protect PC (Invoke Stored Procedure) Command

# **REMOTE: Mechanism for Protecting Calls from Remote Users**

Parameter	Description	Syntax
REMOTE	The mechanism ADASAF should use to protect calls from remote users.	REMOTE={ LINK   NODE   NONE   <u>POPUP</u> }
	• LINK: ADASAF is to use, as the SAF Logon ID, the Entire Net-Work link name by which the call arrived	
	• NODE: ADASAF is to use, as the SAF Logon ID, the Entire Net-Work node name from which the call arrived	
	• NONE: this setting must only be used in conjunction with Entire Net-Work SAF Security	
	• POPUP: ADASAF is to initiate the remote workstation logon procedure	

#### **SAFPRINT: Security Check Trace Message Printing**

Parameter	Description	Syntax
SAFPRINT	Specify whether security check trace messages should be written to DD SAFPRINT or to DD DDPRINT.	SAFPRINT={ <u>N</u>   Y }
	• N: security check trace messages are to be written to DD DDPRINT	
	• Y: security check trace messages are to be written to DD SAFPRINT	
	If SAFPRINT=Y is specified, but a SAFPRINT dataset is not provided, the trace messages will be written to DDPRINT.	
	The SAFPRINT dataset must be defined in the nucleus JCL and may refer to a SYSOUT dataset or to a file defined with RECFM=F (or FB) and LRECL=121.	

# WTOCASE: Mixed or Upper Level Case for ADASAF Prefix Messages

Parameter	Description	Syntax
WTOCASE	The AAF prefix messages issued by ADASAF may be written in mixed or upper case. For compatibility with previous versions, the default is upper case.	WTOCASE={ $M \mid \underline{U}$ }
	• M: AAF prefix messages are to be written in mixed case	
	• U: AAF prefix messages are to be written in upper case	

#### **XLEVEL:** Type of Database Cross-Level Security Checking

Parameter	Description	Syntax
XLEVEL	The type of database cross-level security checking to be performed.	XLEVEL={0   1   2   3 }
	• 0: no cross-level checking	
	• 1: Perform a cross-level check only on a user's first call to a database nucleus	
	• 2: Perform a cross-level check every time a standard check is performed; this option may be useful if only certain files in the database should be accessible to a particular job	
	• 3: The User ID of the originating job should form part of the resource profile name. This option may be useful when different users have different access requirements, depending on the environment in which they are running	
	For more information, see the section Cross-Level Checking.	

# **Overriding ADASAF Parameters Using DDSAF Data Set**

Some ADASAF parameters can be overridden on a nucleus-by-nucleus basis by providing them in a dataset referenced by the DD name DDSAF, thereby avoiding the need to maintain a separate parameter module for each database with different requirements.

The DDSAF dataset should be defined with record size (LRECL) 80 and format fixed (RECFM=F) or fixed-blocked (RECFM=FB), in which case it should have a suitable blocksize.

Each record in DDSAF must begin in column 1, with an asterisk (\*) to indicate that it is a comment, or with the parameter keyword and value and optional comments. Each parameter must be specified in a separate record.

The DDSAF dataset is only used for nucleus jobs.

The parameters that can be specified are:

AAFPRFX	LOGOFF
ABS	MAXFILES
ADASCR	MAXPC
CIPHER	NOTOKEN
ETDATA	PASSWORD
FAILMODE	PCPROT
FILETAB	REMOTE
HOLDCMD	XLEVEL

#### Note:

The only valid setting for FAILMODE is FAILMODE=F. This can be used to switch a nucleus running in WARN mode into FAIL mode by modifying DDSAF and restarting ADASAF using ADASAF Online Services (option 6) or by using the AAF SNEWCOPY operator command. FAILMODE=F may only be specified in DDSAF; if specified in the configuration module, it is ignored.

#### Example

A sample parameter file is shown below:

ADASCR=N	no ADASCR compatibility
CIPHER=Y	some cipher codes
ETDATA=N	no ET data protection
MAXFILES=20	maximum cached files
MAXPC=10	maximum cipher codes
PASSWORD=N	no passwords
XLEVEL=2	full cross-level checking

# **ADASAF Daemon Parameters Specified in Configuration Module SAFCFG**

This section describes the site-dependent parameters which are used by the SAF Security daemon. These parameters are specified using an assembled configuration module SAFCFG. SAFCFG is supplied as part of the SAF Security Kernel on the Adabas limited libraries.

#### Note:

The default value for each ADASAF parameter is underlined in the parameter syntax definition.

- DBCLASS: ADASAF Resource Class Name
- DBNCU: Number of ADASAF Checks to be Buffered Per User

- DBUNI: Allow Access to Undefined ADASAF Resources
- FAILMODE: Disallow or allow access for security violations
- GWMSGL: Trace Level for Daemon Security Checking
- GWSIZE: Storage Size for Caching User Information
- GWSTYP: Adabas SAF Security Type
- SAFPRINT: Security Check Trace Message Printing

### **DBCLASS: ADASAF Resource Class Name**

Parameter	Description	Syntax
DBCLASS	The name of the ADASAF resource class. The name can be up to eight alphanumeric characters. This class is used for protection of SYSAAF and other Natural libraries.	DBCLASS={ name   ADASEC}

## **DBNCU: Number of ADASAF Checks to be Buffered Per User**

Parameter	Description	Syntax
DBNCU	The number of security checks to be buffered per SAF user, in the cache defined by GWSIZE. For the security service in the System Coordinator daemon, DBNCU specifies the number of SYSAAF (etc) checks to be buffered per SAF user. These buffered checks are used to avoid repeated SAF calls for a user.	DBNCU=0

# **DBUNI:** Allow Access to Undefined ADASAF Resources

Parameter	Description	Syntax
DBUNI	<ul> <li>Indicates whether or not access to undefined resources should be allowed. The normal mode of operation is to prevent access to resources not defined to the security system. Profiles representing ADASAF resources are added to the security repository with either a default access or by granting access to specific users and groups.</li> <li>N: access to undefined resources is not allowed</li> <li>Y: access to undefined resources is allowed</li> </ul>	DBUNI={N Y}
	<ol> <li>Notes:</li> <li>This option does not permit access to resources defined with universal access "none".</li> <li>DBUNI is ignored when checking whether a nucleus or utility is allowed to execute.</li> </ol>	

# FAILMODE: Disallow or allow access for security violations

Parameter	Description	Syntax
FAILMODE	FAILMODE controls whether a security violation is treated as "access denied" or "access allowed".	FAILMODE={F   W}
	• F: access is not allowed for security	
	• W: access is allowed, even though the security system returned a violation	
	The normal mode of operation is to disallow access for security violations. However, during initial implementation of the security service in the System Coordinator daemon it may be useful to specify FAILMODE=W and, if appropriate, DBUNI=Y so that you can review your SYSAAF (etc) security requirements progressively until you decide to then switch to full fail mode.	

# **GWMSGL: Trace Level for Daemon Security Checking**

Parameter	Description	Syntax
GWMSGL	The tracing level for daemon security checks.	GWMSGL={ 0   1   2   3 }
	• 0: no tracing	
	• 1: trace violations only	
	• 2: trace successful checks only	
	• 3: trace all checks	
	For easier problem diagnosis and auditing, trace messages include a time stamp and the name of the job that requested the security check. Trace information is also accumulated in the System Coordinator trace facility, if active.	

# **GWSIZE: Storage Size for Caching User Information**

Parameter	Description	Syntax
GWSIZE	The amount of storage (in kilobytes) to be used for caching user information related to the security system, for example checked entity names. For optimum performance of the security service in the System Coordinator daemon set GWSIZE large enough so the number of Active SAF User overwrites is not excessive.	GWSIZE=256

# **GWSTYP: Adabas SAF Security Type**

Parameter	Description	Syntax
GWSTYP	The SAF security type.	
	• 1: RACF	GWSTYP={ 1   2   3   4 }
	• 2: CA-Top Secret	
	• 3: CA-ACF2	
	• 4: RACF executing on a Fujitsu operating system.	

# SAFPRINT: Security Check Trace Message Printing

Parameter	Description	Syntax
SAFPRINT	Specify whether security check trace messages should be written to DD SAFPRINT or to DD DDPRINT.	SAFPRINT={N   Y }
	• N: security check trace messages are to be written to DD DDPRINT	II
	• Y: security check trace messages are to be written to DD	
	If SAFPRINT=Y is specified, but a SAFPRINT dataset is not provided, the trace messages will be written to DDPRINT.	
	The SAFPRINT dataset must be defined in the daemon JCL and may refer to a SYSOUT dataset or to a file defined with RECFM=F (or FB) and	
	LRECL=121.	