

Adabas Auditing on Mainframe

Adabas Auditing Configuration (SYSALA)

Version 211

October 2021

This document applies to Adabas Auditing on Mainframe Version 211 and all subsequent releases.

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

Copyright © 2021 Software AG, Darmstadt, Germany and/or Software AG USA, Inc., Reston, VA, USA, and/or its subsidiaries and/or its affiliates and/or their licensors.

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

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

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

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

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

Document ID: LA-CONFIG-TBD-20210920EN

Table of Contents

Adabas Auditing Configuration (SYSALA)	v
1 About this Documentation	1
Document Conventions	2
Online Information and Support	2
Data Protection	3
2 Adabas Auditing Configuration Overview	5
Controlling Access to Adabas Auditing Configuration	6
The Adabas Auditing Configuration Main Menu	7
Getting Help	8
Using Function Keys	9
Leaving the Adabas Auditing Configuration Screens	9
3 Maintaining Destination Definitions	11
Listing Destination Definitions	12
Adding Destination Definitions	13
Modifying Destination Definitions	15
Copying Destination Definitions	15
Deleting Destination Definitions	16
4 Maintaining Filter Definitions	17
Listing Filter Definitions	18
Adding Filter Definitions	19
Modifying Filter Definitions	26
Copying Filter Definitions	27
Deleting Filter Definitions	27
Rules for Writing Filter Conditions	28
5 Maintaining Format Buffer Definitions	39
Listing Format Buffer Definitions	40
Adding Format Buffer Definitions	41
Modifying Format Buffer Definitions	44
Copying Format Buffer Definitions	45
Deleting Format Buffer Definitions	46
6 Maintaining Subscription Definitions	47
Listing Subscription Definitions	48
Adding Subscription Definitions	49
Modifying Subscription Definitions	55
Copying Subscription Definitions	55
Deleting Subscription Definitions	56
7 Maintaining Global Definitions	57
8 Maintaining LFILE Parameters	61

Adabas Auditing Configuration (SYSALA)

The Adabas Auditing Configuration provides an online interface to create and maintain auditing definitions for Auditing for Adabas. These auditing definitions are stored in the Auditing system file associated with a specific Adabas Audit Server.

Adabas Auditing Configuration Overview	Provides an overview of the kinds of auditing definitions you must set up to use the Auditing for Adabas.
Maintaining Destination Definitions	Describes the destination and maintenance of audit data stored in the Auditing system file.
Maintaining Filter Definitions	Describes filter conditions for auditing in the Auditing system file and how maintain them using Adabas Auditing Configuration.
Maintaining Format Buffer Definitions	Describes the definitions of buffers stored in the Auditing system file and how to maintain them in the Adabas Auditing Configuration.
Maintaining Subscription Definitions	Describes the set of specifications to be applied to the auditing of data and how to maintain subscription file definitions.
Maintaining Global Definitions	Describes how to maintain Global definitions using Adabas Auditing Configuration.
Maintaining LFILE Parameters	Describes how to change or set the LFILE parameter using Adabas Auditing Configuration.

1 About this Documentation

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

Document Conventions

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

Online Information and Support

Software AG Documentation Website

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

Software AG Empower Product Support Website

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

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

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

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

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

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

Software AG Tech Community

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

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

Data Protection

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

2 Adabas Auditing Configuration Overview

▪ Controlling Access to Adabas Auditing Configuration	6
▪ The Adabas Auditing Configuration Main Menu	7
▪ Getting Help	8
▪ Using Function Keys	9
▪ Leaving the Adabas Auditing Configuration Screens	9

You can access Adabas Auditing Configuration from Natural.

First, verify that the Adabas Audit Server and Auditing system file have been installed appropriately, as described in the *Installation* chapter.

Then, within Natural, log on to the SYSALA library by entering:

```
LOGON SYSALA
```

And enter the following command:

```
MENU
```

The Adabas Auditing Configuration Main Menu will appear.

Controlling Access to Adabas Auditing Configuration

You can control access to the Adabas Auditing Configuration using the initialization exit, subprogram N-IEXIT. This exit is a Natural subprogram that runs automatically, whenever a user attempts to access the Adabas Auditing Configuration. Based on Natural code you supply in the exit using the exit parameters, you can:

- Restrict specific users from accessing the Adabas Auditing Configuration.
- Identify the Auditing system file initially used by a user or users.

For complete information on coding Natural subprograms, read your *Natural* documentation. Once you have supplied code in the N-IEXIT subprogram, the ID of any user attempting to access the Adabas Auditing Configuration is passed to the exit. If the #RESPONSE parameter is set to a non-zero value for that user, they cannot access the Adabas Auditing Configuration.

A sample of the N-IEXIT is shown below.

```
0010 *****
0020 *   INITIALIZATION EXIT   *
0030 *****
0040 DEFINE DATA PARAMETER
0050 01 #USER                (A08)   /* USER ID
0060 01 #AUDIT-DBID         (N05)   /* AUDIT ID
0070 01 #AUDIT-FNR         (N05)   /* AUDITING SYSTEM FILE
0080 01 #PARM-1            (A40)   /* DATA
0090 01 #RESPONSE          (B02)   /* USER EXIT RESPONSE CODE
0100 01 #VERSION           (A04)   /* ONLINE SYSTEM VERSION
0110 END-DEFINE
0120 *
0130 #RESPONSE = H'0000'      /* NON-ZERO WILL TERMINATE
```

```
0140 ESCAPE ROUTINE
0150 END
```



You can use the following parameters while coding the Natural subprogram:

Parameter	Description
#PARM-1	Reserved for future use.
#AUDIT-DBID	The database ID of the Adabas Audit Server whose Auditing system file you want to maintain when the Adabas Auditing Configuration starts. Once you are using the Adabas Auditing Configuration, you can change this setting using the Set LFILE Parameters screen.
#AUDIT-FNR	The file number of the Auditing system file you want to maintain when the Adabas Auditing Configuration starts. Once you are using the Adabas Auditing Configuration, you can change this setting using the Set LFILE Parameters screen.
#RESPONSE	A non-zero response code will cause the Adabas Auditing Configuration to terminate. By setting this to a non-zero number you can restrict access to the Adabas Auditing Configuration for the user identified in the USER parameter or for the Adabas Auditing Configuration version specified in the VERSION parameter.
#USER	The user ID of a potential Adabas Auditing Configuration user.
#VERSION	The version of the Adabas Auditing Configuration.

The Adabas Auditing Configuration Main Menu

From the main menu of the Adabas Auditing Configuration screens, you can select options that allow you to maintain any Auditing definitions you need. Definitions can be added, reviewed, modified, copied, or deleted.

```
14:49:23      ***** A D A B A S  AUDITING CONFIGURATION *****      2020-02-28
Vers 1.1.0                                Main Menu                                M-RP0010
DBID 1954  File 89

          Code      Function
          ----      -
          D      Destination Definitions
          F      Filter Definitions
          G      Format Buffer Definitions
          S      Subscription Definitions
          V      Global Definitions
          U      Set Lfile parameters
          ?      Help
          .      Exit
          ----      -
Code ... _

Command ==>
```

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

The following table describes the options on this menu. To select an option, enter its associated code in the Code field on the screen.

Code	Allows you to:
D	Maintain Destination definitions
F	Maintain Filter definitions
G	Maintain Format Buffer definitions
S	Maintain Subscription definitions
V	Maintain Global definitions
U	Change or set LFILE parameters
?	Get help on this menu
.	Exit Adabas Auditing Configuration

Getting Help

Online help is provided for every Adabas Auditing Configuration screen and message that appears in the Adabas Auditing Configuration. This section covers the following topics:

- [Getting Screen-Level Help](#)
- [Getting Help for Messages](#)

Getting Screen-Level Help

➤ To get screen-level help for any Adabas Auditing Configuration screen:

- 1 Be sure the screen you want help for is displayed. Navigate to it if you need to.
- 2 Press the PF1 key to display the help screen.

Getting Help for Messages

➤ To get help for Adabas Auditing Configuration messages:

- At the Command prompt, enter:

```
msg nnn
```

where nn is the valid two- or three-digit message number (omit the leading zeros). For example, to get help on message ALA00245, you would enter:

```
msg 245
```

Using Function Keys

The following table describes the general function keys available while using the Adabas Auditing Configuration screens. Note that not all function keys are available on all screens and some PF keys have meanings only to specific screens.

Function Key	Display Title	Description
PF1	Help	Provides help on the current screen.
PF2	Repos	Displays a pop-up screen allowing you to specify the definition name to which you want a list of definitions repositioned. This is useful if you have many definitions listed on one of the Adabas Auditing Configuration list screens.
PF3	Exit	Exits the current screen without saving any changes you might have made. If the current screen is the Main Menu, this function key has no effect.
PF4	Add	Displays a screen that allows you to add a definition.
PF5	Save or Exec	Saves the changes you have made or allows you to execute the program corresponding to the Adabas Auditing Configuration screen displayed.
PF7	-	Scrolls backwards through the data on a screen.
PF8	+	Scrolls forward through the data on a screen.
PF12	Menu	Returns to the Adabas Auditing Configuration main menu.

Leaving the Adabas Auditing Configuration Screens

To leave the Adabas Auditing Configuration screens, press PF12 from any screen. If you are on a menu screen in the Adabas Auditing Configuration, you can select the dot (.) option to leave.



Note: When you leave the Adabas Auditing Configuration screens, any modifications to the configuration since the last save will not be stored.

3 Maintaining Destination Definitions

- Listing Destination Definitions 12
- Adding Destination Definitions 13
- Modifying Destination Definitions 15
- Copying Destination Definitions 15
- Deleting Destination Definitions 16

A destination definition defines the destination of audit data.

This section describes the following topics:

Listing Destination Definitions

➤ To use the Adabas Auditing Configuration to list the Destination definitions stored in the Auditing system file, complete the following steps:

- Select option D from the Adabas Auditing Configuration Main Menu.

The Available Destinations screen appears showing all Destination definitions in the Adabas Auditing Configuration.

```
17:35:57          ***** A D A B A S  AUDITING CONFIGURATION *****          2021-01-12
                          Available Destinations                          M-RP1200

Sel  Title                                          Name      Type
---  -
_   PAYROLL_APPL._AUDIT_DESTINATION             PYRLDEST  AUDT

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Repos Exit  Add      Name  -    +      Menu
```

The following tables describe the options on this menu.

Sel	Allows you to:
M	Modify a Destination definition
C	Copy a Destination definition
D	Delete a Destination definition
PF Key	Allows you to:
PF1	Get screen help
PF2	Reposition to a specific Destination definition in the list
PF3	Exit this screen and return to the previous screen
PF4	Add a new Destination definition
PF6	Toggle between the sorting of Destination definition in the list
PF12	Exit this screen and return to the main menu

Adding Destination Definitions

➤ To use the Adabas Auditing Configuration to add a Destination definition to the Auditing system file, complete the following steps:

- 1 Select D from the Adabas Auditing Configuration main menu to list the Destination definitions, as described above in *Listing Destination Definitions*.
- 2 Press PF4 (Add).

The Audit Destination Definition screen appears.

```

17:38:42          ***** A D A B A S  AUDITING CONFIGURATION *****          2021-01-12
                                Audit Destination Definition                                M-RP1250

Destination Title ..... TITLE_OF_DESTINATION_NAME_AUDIT1                               ←
Destination Name ..... AUDIT1__

Active at Startup ..... Y
Architecture ..... 2
Open at Startup ..... G
Maximum Output size ... _____0
    
```


- 4 Press PF5 to save the Destination definition in the Auditing system file.

Modifying Destination Definitions



- 1 List the Destination definitions in the Adabas Auditing Configuration, as described above in *Listing Destination Definitions*.
- 2 Locate the definition you want to modify on the screen and enter an M in the Sel column for that definition.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

An appropriate Destination definition screen appears for the Destination you selected.

- 3 For information about the fields on this screen, refer to the field descriptions described earlier in *Adding Destination Definitions*.



Note: You cannot alter the name of the Destination definition. If you want to rename a Destination definition, first copy it using the name you want and then delete the original.

- 4 When all modifications have been made, press PF5 to save the changes.

Copying Destination Definitions

➤ **To use the Adabas Auditing Configuration to copy a Destination definition in the Auditing system file:**

- 1 List the Destination definitions in the Adabas Auditing Configuration, as described in *Listing Destination Definitions*.
- 2 Locate the definition you want to copy on the screen and enter a C in the Sel column for that definition.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

A dialog appears requesting a Title and Name for the copy of the Destination definition.

```
Enter new  
Title: _____  
Name: _____  
or press PF3 to cancel
```

- 3 Specify new, unique Title and Name for the copy of the Destination definition and press Enter.
The Destination definition is copied, and the copy appears on the List of Destinations screen.

Deleting Destination Definitions

➤ **To use the Adabas Auditing Configuration to delete a Destination definition in the Auditing system file:**

- 1 List the Destination definitions in the Adabas Auditing Configuration, as described in [Listing Destination Definitions](#).
- 2 Locate the definition you want to delete on the screen and enter a D in the Sel column for that definition and press Enter. The Destination definition is deleted.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

4 Maintaining Filter Definitions

- Listing Filter Definitions 18
- Adding Filter Definitions 19
- Modifying Filter Definitions 26
- Copying Filter Definitions 27
- Deleting Filter Definitions 27
- Rules for Writing Filter Conditions 28

An Audit Filter definition specifies filter conditions for auditing, based on the values of fields in the database records, request information, or client information. No Filter definitions are required. Filter definitions are defined using Adabas Auditing Configuration.

This section describes the following topics:

Listing Filter Definitions

➤ To use the Adabas Auditing Configuration to list the Filter definitions stored in the Auditing system file, complete the following steps:

- Select option F from the Adabas Auditing Configuration Main Menu.

The List of Filters screen appears showing all the Filter definitions in the Adabas Auditing Configuration.

```
18:28:56          ***** A D A B A S  AUDITING CONFIGURATION *****          2020-02-28
                               List of Filters                               M-RP1140

Sel  Title                                     Name
---  -
_   PAYROLL_APPLICATION_FILTER                PAYRFILT

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

The following tables describe the options on this menu.

Sel	Allows you to:
M	Modify an Audit Filter definition
C	Copy an Audit Filter definition
D	Delete an Audit Filter definition
PF Key	Allows you to:
PF1	Get screen help
PF2	Reposition to a specific Audit Filter definition in the list
PF3	Exit this screen and return to the previous screen
PF4	Add a new Audit Filter definition
PF6	Toggle between the sorting of Filters by Name or Title
PF12	Exit this screen and return to the main menu

Adding Filter Definitions

To use the Adabas Auditing Configuration to add an Audit Filter definition to the Auditing system file, complete the following steps:

- [Step 1. Access the Filter Definition Area of the Adabas Auditing Configuration](#)
- [Step 2. Specify a Filter Definition Name and Type](#)
- [Step 3. Add Filter Conditions to the Filter Definition](#)
- [Step 4. Save the Filter Definition](#)

Step 1. Access the Filter Definition Area of the Adabas Auditing Configuration

➤ To access the Filter Definition area of the Adabas Auditing Configuration, complete the following steps:

- 1 Select F from the Adabas Auditing Configuration main menu to list the Filter definitions, as described earlier in [Listing Filter Definitions](#).
- 2 Press PF4 (Add).

The Filter Definition screen appears.

```

18:30:29      ***** A D A B A S  AUDITING CONFIGURATION *****      2020-02-28
                          Filter Definition                          M-RP1150

Filter Title .. _____ 1 of 1
Filter Name ... _____ Exclude or Include Records .. I

          ----- Source -----
Sel Group Field PE MU Image Begin Length Cond Field Value
          ----- Target -----
  
```

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

Step 2. Specify a Filter Definition Name and Type

➤ To specify a Filter definition name and type:

- 1 Tab to the Filter Name field and specify a unique title for the Filter definition. The title must use alphanumeric characters and be between one and 32 characters long. Embedded spaces are automatically changed to underscores.
- 2 Tab to the Filter Name field and specify a unique name for the Filter definition. The name must use alphanumeric characters and be between 1 and 8 characters long.
- 3 Tab to the Exclude or Include Records field and specify an "I" to include (audit) the records selected by the filter definition or an "E" to exclude (do not audit) records selected by the filter definition.
- 4 Although no field filter conditions have yet been specified for the Filter definition, press PF5 to save it.

Step 3. Add Filter Conditions to the Filter Definition

For more information about rules of filter conditions, refer to the section [Rules for Writing Filter Conditions](#).

➤ To add filter conditions to the Filter definition:

- 1 Press PF4 (Add) to define field filter conditions for the Filter definition. Up to 2500 filter conditions can be specified.

The Filter Condition screen appears with the Filter name listed at the top of the screen.

```

18:31:16          ***** A D A B A S  AUDITING CONFIGURATION *****          2020-02-28
                                     Filter Condition                               M-RP1155

Filter Title .. SALARY_FILE_FILTER          Filter Name .. SLRYFILT
----- Source -----          ----- Target -----
Group Field  PE   MU Image Condition Field  PE   MU Image
2nd line:   Begin Length          Begin Length
-----
_____ or value(s)
Target Value 1  ..
-----
-----
-----
-----
Target Value 2  ..
-----
-----
-----
-----
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit      Save      -      +          Menu

```

Note that you can specify a target field, part of a target field, or multiple target values on this screen:

- The target field is specified under the Target heading in the Field column.
- The part of a target field is specified under the Target heading using a combination of the Field column and the Begin and Length columns (which are on the second line).
- Multiple target values can be specified in the Target Value *n* fields at the bottom part of the screen.

2 Update the fields on this screen as described in the following table.



Note: The Filter definition name cannot be changed.

Field Name	Description	Default
Group	<p>You can use a group number to group field filters together within an Audit Filter definition.</p> <p>All field filters with the same group number are blocked and logically ANDed together when the filters are examined during subscription processing. In other words, a field in the database must meet all the criteria of the group before it is selected.</p> <p>Likewise, different groups of field filters are logically ORed together. In other words, a field need only meet the criteria specified by one of the groups to be selected.</p> <p>Valid values are numbers ranging from 1 through 999.</p>	-
Source Field	<p>The two-byte Adabas field code for the field to be compared.</p> <p>The Source Field must be in the format buffer specified for the item type.</p> <p>If you want to specify part of a Source Field for the comparison, specify:</p> <ul style="list-style-type: none"> ■ a starting byte number in the Source Begin field on the second line. ■ optionally, the length of the part to be compared in the Source Length field on the second line. <p>Note: The format of the complete field is used for partial field comparisons. If the formats of a Source Field or partial Source Field and a Target Field or partial Target Field do not match, the comparisons may always result in an unequal condition. For example, comparing an alphanumeric field to a packed field will always result in an unequal condition.</p>	-
Source PE	<p>The index number (occurrence) of the periodic group (PE) to which the condition relates if the Source Field in this field filter is a PE field.</p> <p>Valid values range from 0 through 191.</p>	0, indicating the Source Field is not a PE field.
Source MU	<p>The index number of the multiple-value field (MU) to which the condition relates if the Source Field in this field filter is an MU field.</p> <p>Valid values range from 0 through 191.</p>	0, indicating the Source Field is not an MU field.
Source Image	<p>Whether the Source Field is in the after image (AI), before image (BI), or the default image of the record</p> <p>Valid values are "AI" and "BI".</p> <p>Note: The Source Image field should only be specified for update commands.</p>	<p>AI for selects, inserts and updates</p> <p>BI for deletes</p>
Source Begin	<p>The starting byte number of the partial Source Field to be compared.</p>	1

Field Name	Description	Default
	<p>The Source Begin field is only used if you want to specify a partial Source Field for comparison and only if the Source Field is of alphanumeric or binary format.</p> <p>Note: The format of the complete field is used for partial field comparisons. Valid comparisons of different field types are listed in Field Type Considerations.</p> <p>For fixed length fields, valid values range from "1" (the start of the field) through the maximum length of the field (the last byte of the field). For variable length fields, valid values range from "1" (the start of the field) to the maximum length allowed for that field type. Counting occurs from left to right beginning with 1 for fields defined with alphanumeric format, and from right to left beginning with 1 for fields defined with binary format.</p>	
Source Length	<p>The numeric length of the partial Source Field that should be compared.</p> <p>The Source Length field is only used if you want to specify a partial Source Field for comparison and only if the Source Field is of alphanumeric or binary format.</p> <p>Note: The format of the complete field is used for partial field comparisons. Valid comparisons of different field types are listed in Field Type Considerations.</p> <p>For fixed length fields, errors will occur if the sum of the values of the Source Begin and Source Length parameters exceeds the fixed length of the field. For variable length fields, the sum of the values of the Source Begin and Source Length parameters must not exceed the maximum length of the field plus 1. For example, if a variable length field has format "A" with a maximum length of 253 bytes, settings of Source Begin=1 and Source Length=253 are valid, but settings of Source Begin=2 and Source Length=254 are not.</p>	<p>If Source Begin is not specified, the default value is the entire field.</p> <p>If Source Begin is specified, the default value is the maximum length of the field minus the value of the Source Begin parameter plus 1.</p>
Condition	<p>A condition operator code for the filter.</p> <p>Valid values are "EQ" (equal to), "NE" (not equal to), "LT" (less than), "LE" (less than or equal to), "GT" (greater than), or "GE" (greater than or equal to).</p> <p>When EQ or NE are specified, multiple target values and target values using wildcards can be tested. For all other condition codes, only single target values without wildcards can be tested.</p>	EQ
Target Field	<p>The two-byte Adabas field code for the field with which the Source Field will be compared. Use single quotation marks around the field code. The Target Field must be in the same record as the Source Field.</p> <p>If you want to specify part of a Target Field for the comparison, specify:</p>	-

Field Name	Description	Default
	<ul style="list-style-type: none"> ■ a starting byte number in the Target Begin field on the second line. ■ optionally, the length of the part to be compared in the Target Length field on the second line. <p>Note:</p> <ol style="list-style-type: none"> 1. A Target Field cannot be used for Request or Client filters. Only Target values may be specified for Request and Client filters. 2. The format of the complete field is used for partial field comparisons. Valid comparisons of different field types are listed in <i>Field Type Considerations</i>. <p>Target Field is mutually exclusive with the Target Value <i>n</i> fields. If you specify a Target Field, you cannot specify values in the Target Value <i>n</i> fields.</p>	
Target PE	<p>The index number of the periodic group (PE) to which the condition relates if the Target Field in this field filter is a PE field.</p> <p>Valid values range from 0 through 191.</p> <p>The Target PE field is mutually exclusive with the Target Value <i>n</i> fields. If you specify a Target Field, you cannot specify values in the Target Value <i>n</i> fields.</p>	0, indicating the Target Field is not a PE field.
Target MU	<p>The index number (occurrence) of the multiple-value field (MU) to which the condition relates if the Target Field in this field filter is an MU field.</p> <p>Valid values range from 0 through 191.</p> <p>The Target MU field is mutually exclusive with the Target Value <i>n</i> fields. If you specify a Target Field, you cannot specify values in the Target Value <i>n</i> fields.</p>	0, indicating the Target Field is not an MU field.
Target Image	<p>Whether the Target Field is in the after image (AI), before image (BI), or the default image of the record.</p> <p>Valid values are "AI" and "BI".</p> <p>The Target Image field is mutually exclusive with the Target Value <i>n</i> fields. If you specify a Target Field, you cannot specify values in the Target Value <i>n</i> fields.</p> <p>Note: The Target Image field should only be specified for update commands.</p>	<p>AI for selects, inserts, and updates.</p> <p>BI for deletes.</p>
Target Begin	<p>The starting byte number of the partial Target Field at which the comparison should begin. This field should only be specified if you want to specify a partial field for comparison, if the field is of alphanumeric or binary format, and only if a Target Field is specified.</p>	1

Field Name	Description	Default
	<p>Note: The format of the complete field is used for partial field comparisons. Valid comparisons of different field types are listed in <i>Field Type Considerations</i>.</p> <p>For fixed length fields, valid values range from "1" (the start of the field) through the maximum length of the field (the last byte of the field). For variable length fields, valid values range from "1" (the start of the field) to the maximum length allowed for that field type. Counting occurs from left to right beginning with 1 for fields defined with alphanumeric format, and from right to left beginning with 1 for fields defined with binary format.</p>	
Target Length	<p>The numeric length of the partial Target Field that should be used for the comparison. This field should only be specified if you want to specify a partial field for comparison, if the field is of alphanumeric or binary format, and only if a Target Field is specified.</p> <p>Note: The format of the complete field is used for partial field comparisons. Valid comparisons of different field types are listed in <i>Field Type Considerations</i>.</p> <p>For fixed length fields, errors will occur if the sum of the values of the Target Begin and Target Length parameters exceeds the fixed length of the field. For variable length fields, the sum of the values of the Target Begin and Target Length parameters must not exceed the maximum length of the field plus 1. For example, if a variable length field has format "A" with a maximum length of 253 bytes, settings of Target Begin=1 and Target Length=253 are valid, but settings of Target Begin=2 and Target Length=254 are not.</p>	<p>If Target Begin is not specified, the default value is the entire field.</p> <p>If Target Begin is specified, the default value is the maximum length of the field minus the value of the Target Begin parameter plus 1.</p>
Target Value <i>n</i>	<p>A value against which the Source Field will be compared. Only one value can be specified in each Target Value <i>n</i> field. Up to 128 Target Value <i>n</i> fields are available in which you can specify values; use the PF7 and PF8 keys to scroll through them.</p> <p>Strings that include blanks should be enclosed in single quotes. Apostrophes in strings must be doubled (for example: 'six o'clock'). A maximum of 254 characters can be specified for each value.</p> <p>Each value may consist of either free-format characters or a mix of elements specified using the A() or X() notation.</p> <ul style="list-style-type: none"> ■ If free-format data consists entirely of numeric data (including an optional leading "+" or "-" character) it is treated as a numeric value. ■ If a value (or part of a value) is specified using A() notation, it will be treated as alphabetic data. ■ Hexadecimal values may be specified using X() notation. 	-

Field Name	Description	Default
	<p>A value must be specified entirely as free-format data, or composed of one or more A() or X() sub-elements. If a value begins with an A() or X() sub-element all remaining sub-elements of the value must be so specified.</p> <p>The Target Value <i>n</i> field is mutually exclusive with the Target Field, Target Image, Target MU, and Target PE fields. You cannot specify values for the Target Field, Target Image, Target MU, or Target PE fields if you have specified a value for the Target Value <i>n</i> field.</p>	

Step 4. Save the Filter Definition

➤ To save the Filter definition:

- Press PF5 to save the Filter definition in the Auditing system file.

Modifying Filter Definitions

➤ To use the Adabas Auditing Configuration to modify a Filter definition in the Auditing system file:

- 1 List the Filter definitions in the Adabas Auditing Configuration, as described earlier in [Listing Filter Definitions](#).
- 2 Locate the definition you want to modify on the screen and enter an M in the Sel column for that definition.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

An appropriate Filter definition screen appears for the Filter you selected.

- 3 Modify the Exclude or Include Record field, as necessary. If you want to modify a filter condition specification, enter an "M" next to it in the list to display and update the Filter Condition screen for that condition. If you want to delete a filter condition from the Filter definition, enter a "D" next to the condition in the list.



Note: You cannot alter the Title and Name of the Filter definition. If you want to rename a Filter definition, first copy it using the Title and Name you want and then delete the original.

For information on modifying this screen, read the description of adding Filter definitions in [Adding Filter Definitions](#).

- 4 When all modifications have been made, press PF5 to save the changes.

Copying Filter Definitions

➤ To use the Adabas Auditing Configuration to copy a Filter definition in the Auditing system file:

- 1 List the Filter definitions in the Adabas Auditing Configuration, as described in [Listing Filter Definitions](#).
- 2 Locate the definition you want to copy on the screen and enter a C in the Sel column for that definition.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

A dialog appears requesting a name for the copy of the Filter definition.

```
Enter new
Title: _____
Name: _____
or press PF3 to cancel    ←
```

- 3 Specify new, unique Title and Name for the copy of the Filter definition and press Enter.

The Filter definition is copied, and the copy appears on the List of Filters screen.

Deleting Filter Definitions

➤ To use the Adabas Auditing Configuration to delete a Filter definition in the Auditing system file:

- 1 List the Filter definitions in the Adabas Auditing Configuration, as described in [Listing Filter Definitions](#).
- 2 Locate the definition you want to delete on the screen and enter a D in the Sel column for that definition and press Enter. The Filter definition is deleted.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.



Note: If you want to delete a filter condition from the Filter definition, read [Modifying Filter Definitions](#).

Rules for Writing Filter Conditions

There are various things you should consider when creating filter conditions. This section describes them.

- [General Information](#)
- [So My Record Matches the Filter Conditions - Now What?](#)
- [Failed or Ignored Filter Conditions](#)
- [Target Value Syntax](#)
- [When You Can Specify Multiple Targets](#)
- [How Multiple Filter Conditions Are Interpreted](#)
- [Specifying a Range of Values](#)
- [Field Type Considerations](#)
- [Varying Field Length Considerations](#)
- [Using Wildcards](#)

General Information

A filter can operate on fields in the data record, request information, or client information. The type of data the filter operates on is determined by specifying the filter name in the Data, Request, or Client filter name fields on the File-related Parameters menu of the subscription.

For a data filter, the Source Field is in the data record, and the target for comparison may be another field in the data record (either Before or After image in the case of an update), or the target may be one or more values.

For a Request filter, the Source Field is in the request information, and the target is one or more values. The target cannot be another field.

For a Client filter, the Source Field is in the client information, and the target is one or more values. The target cannot be another field.

A subscription file can define a combination of Data, Request, and Client filters. If more than one filter is defined, all filters must meet acceptance criteria for the event to be audited.

So My Record Matches the Filter Conditions - Now What?

Filter conditions are based on the values of fields (or partial fields) in a filter definition. If a field or partial field meets all the filter conditions specified, the record is selected. Once selected, the record will be either included or excluded from auditing processing, based on what the audit filter definition specifies. Therefore, selection of a record does not necessarily mean that it will be audited - merely that it passed the filter conditions specified by the audit filter definition. If the audit filter definition indicates that selected records should be excluded from auditing, the record will not be audited.

Audit filter definitions indicate whether selected records are audited or not via the `Exclude` or `Include Record` field on the Filter Definition screen of the Adabas Auditing Configuration.



Note: Include and exclude processing function in the same way for partial fields as for complete fields in your audit filters.

Failed or Ignored Filter Conditions

A filter condition will be ignored if it cannot be evaluated. This can occur if the image to be tested is not present for auditing. The effect of this on filter processing varies, based on whether the filter occurs as part of include or exclude processing and, if it is included in a group of conditions, how the other conditions in the group are matched, failed, or ignored. This is best explained in a series of examples.

Examples:

1. Suppose an add command (N1) adds a record containing field AB to which the following filter is applied:

```
Type of filter: INCLUDE
Source Field: 'AB', Source Image: BI
Condition: EQ
Target Value: '1916'
```

In this case, the filter cannot be evaluated because only the after image is present for an add and the filter is for the before image (Source-Image=BI). This filter is therefore ignored. No test is done on the field to see if the before image is equal to "1916". Consequently, the add record is not included in auditing processing.

2. Likewise, a similar exclude filter is also ignored:

```
Type of filter: EXCLUDE
Source Field: 'AB', Source Image: BI
Condition: EQ
Target Value: '1916'
```

In this case, the filter cannot be evaluated because only the after image is present for an add and the filter is for the before image. This filter is therefore ignored, and no test is done on the field to see if the before image is equal to "1916". However, because this is an exclude filter, the add record is *not* excluded from auditing. In other words, it is included in auditing, regardless of whether the before image of the AB field was equal to "1916".

3. Now consider the following audit filter using *multiple filter conditions* and include processing:

```
FILTER NAME=MYINCLF
Type of filter: INCLUDE
Source Field: 'BA', Source Image: BI, Condition: EQ, Target Value: 'AAAA'
Source Field: 'BB', Source Image: AI, Condition: EQ, Target Value: 'VVVV'
Source Field: 'BC', Source Image: AI, Condition: EQ, Target Value: 'XXXX'
```

If an add command (N1) is issued for a record containing the BA, BB, and BC fields, no before image is present for these fields - only the after image. Therefore, the filter condition for BA is ignored because the filter is for the before image. The BA filter condition is treated as if it is not even specified.

The add record, then, is only included in auditing if both filters for fields BB and BC are true.

4. Finally, consider the following audit filter using *multiple filter conditions*, exclude processing, and OR processing:

```
FILTER NAME=MYEXCLF
Type of filter: EXCLUDE
Source Field: 'BA', Source Image: BI, Condition: EQ, Target Value: 'AAAA'
Source Field: 'BB', Source Image: AI, Condition: EQ, Target Value: 'VVVV'
OR
Source Field: 'CA', Source Image: AI, Condition: EQ, Target Value: 'EEEE'
Source Field: 'CB', Source Image: AI, Condition: EQ, Target Value: 'CCCC'
OR
Source Field: 'DA', Source Image: BI, Condition: EQ, Target Value: '0000'
Source Field: 'DB', Source Image: BI, Condition: EQ, Target Value: 'CCCC'
```

If an add command (N1) is issued for a record containing these fields, no before image is present for these fields - only the after image. Therefore, the filter conditions for BA, DA, and DB are ignored because the filters are for the before image; these filter conditions are treated as if they are not even specified.

The add record, then, is only excluded in auditing if the filter for BB is satisfied OR if both the filters for field CA and field CB are satisfied. Otherwise, the add record is included in auditing.

Target Value Syntax

Target values are the values to be compared to the Source Field using the condition type specified (Include or Exclude).

Each value can be expressed in one of two ways:

- You can specify values as free-format text. This text can be any set of alphanumeric set of characters. If blanks are required in the value, you should enclose the value in single quotes.

When the data in the text is all numeric with an optional leading "+" or "-" sign, it is flagged as a numeric value and will be handled differently depending on the Source Field type in the Adabas Audit Server definitions.

- You can specify values as a combination of "A()" and "X()" constructs that enable you to enter data for the same variable in alphabetic format, hexadecimal format, or both, as required. If the element value starts with the string "A(" or "X(" it is treated as an "A()" or "X()" value. If the value does not start with one of these strings, the value is treated as free-format text.

This section describes rules specific to these different methods of specifying target values.

- [Free-Format Value Rules](#)
- [A\(\) and X\(\) Format Value Rule](#)
- [Source Field Data Type Rules](#)
- [Examples](#)

Free-Format Value Rules

The following rules apply to free-format values.

- Free-format values can be any sequence of alphanumeric data apart from the comma character itself.
- If a blank is required for the free-format value, specify the value in single quotes.
- If an apostrophe is required as part of a free-format value, double the apostrophe (for example, 'six o'clock').
- If the value consists of all numeric characters with an optional leading "+" or "-" sign, the value will be treated as numeric.
- If the value begins with a single asterisk (*), it is interpreted as a wildcard suffix (for example, '*xyz').
- If the value ends with a single asterisk, it is interpreted as a wildcard prefix (for example, 'abc*').
- If two asterisks are found together (**) in any location in the free-format value, they are interpreted as a single asterisk in the resulting data.
- If a single asterisk is found in the middle of the data, it is rejected as invalid.



Note: The asterisk wildcard can only be used if the condition for the filter expression is EQ (equal) or NE (not equal). They cannot be used for any other types of filter expression conditions.

A() and X(0) Format Value Rule

The following rules apply to A() and X() value specifications.

- The "A()" construct is specified using the following syntax:

```
A(data)
```

In this syntax, the *data* specified can be any alphanumeric characters, except the parentheses characters.

- The "X()" construct is specified using the following syntax:

```
X(data)
```

In this syntax, the *data* specified must be an even number of characters in the range X'F0' to X'F9' (i.e. 0 to 9) and X'C1' to X'C6' (i.e. A to F). Each pair of characters will represent the hexadecimal value for one byte in the resultant value.

- If a value starts with an "A()" or "X()" construct, the entire value must be specified using these constructs. You cannot mix them with free-format values.
- "A()" and "X()" constructs can be specified multiple times in the same value specification. They must always have matching opening and closing parentheses, or the entire value specification is treated as invalid.
- When the "A()" construct is used, the asterisk (*) wildcard character is treated in the same manner as for free-format values.
- When the "X()" construct is used, the X'5C' character (which represents an asterisk) is treated like any other hexadecimal character and is not interpreted as a wildcard.

Source Field Data Type Rules

The following rules apply to the specification of Target Values depending on the Source Field data type:

- Target Values for Source Fields with data type binary may be entered in hexadecimal.
- Target Values for Source Fields with data type floating point may be entered in hexadecimal.
- Target Values for Source Fields with data type unpacked, packed, and fixed may not be entered in hexadecimal.

Examples

In the following example, a Target Value of "ABCDE" is specified:

```
ABCDE
```

In the following example, a numeric Target Value of "12345" is specified:

```
12345
```

In the following example, a numeric Target Value of "-678" is specified:

```
-678
```

In the following example, a Target Value of "AB123" is specified:

```
AB123
```

In the following example, a Target Value of "XyZ" is specified:

```
A(XyZ)
```

In the following example, a Target Value of "SSS" (the alphabetic equivalent of X'E2E2E2') is specified:

```
X(E2E2E2)
```

In the following example, a Target Value of "*abc*" ("abc" is the alphabetic equivalent of X'C1C2C3') is specified. Note that this value is open-ended because wildcards are specified:

```
A(*)X(C1C2C3)A(*)
```

In the following example, a Target Value of "*def*" is specified. Note that the first asterisk specifies a wildcard, but the last two asterisks specify asterisk characters (the alphabetic equivalent of X'5C5C'):

```
A(*def)X(5C5C)
```

The following Target Value examples are invalid because they specify a wildcard asterisk in the middle of the values:

```
*ABC*DEF*  
X(F5F6)*X(F7F8)  
X(F2)A(*)X(F4)
```

The following Target Value examples are invalid because they specify invalid hexadecimal data:

```
X(ABACFGZZAE)  
X(ABC)
```

The following Target Value example is invalid because it mixes free-format and hexadecimal data:

```
X(AB)AB
```

The following Target Value example is invalid because it misuses commas

```
X(ABAC),,A(123)
```

The following Target Value example is invalid because it misuses parentheses in the A() construct:

```
A(12(34))
```

When You Can Specify Multiple Targets

You can only specify multiple targets if the condition operator is EQ (equal) or NE (not equal). The LT (less than), LE (less than or equal), GT (greater than), and GE (greater than or equal) operators logically assume a comparison of the Source Field value to a single Target Value, so multiple Target Values are not allowed for these condition operators.

Since wildcards are essentially a concise way of specifying multiple targets, you can also only use wildcards when the condition operator is EQ or NE.

If your filter checks to see if the Source Field value is equal to a list of Target Values, the Source Field value need only be equivalent to one of the Target Values for the filter condition to be true. On the other hand, if your filter checks to see if the Source Field value is not equal to a list of Target Values, the Source Field value must not be equal to any of the Target Values for the filter condition to be true.

Examples:

In the following example, records for which the after image of the AA field is equal to "1", "2", "3", or "4" are selected.

```
Type of filter: Include  
Source Field: 'AA', Source Image: AI, Condition: EQ, Target Values: 1, 2, 3, 4
```

In the following example, records for which the after image of the AA field is greater than "5" are selected.

```
Type of filter: INCLUDE  
Source Field: 'AA', Source Image: AI, Condition: GT, Target Value: 5
```

In the following example, records for which the first three bytes of the after image of the BB field contain the characters "abc" are selected.

```
Type of filter: INCLUDE  
Source Field: 'BB', Source Image: AI, Condition: EQ, Target Value: abc*
```

In the following example, records for which the last three bytes of the after image of the BB field contain the characters "xyz" are selected.

```
Type of filter: INCLUDE  
Source Field: 'BB', Source Image: AI, Condition: EQ, Target Value: *xyz
```

In the following example, records in which no bytes of the after image of the BB field contain the characters "klm" are selected.

```
Type of filter: INCLUDE  
Source Field: 'BB', Source Image: AI, Condition: NE, Target Value: *klm*
```

The following example is invalid because it specifies multiple Target Values when the condition code is not EQ or NE.

```
Type of filter: INCLUDE  
Source Field : 'AA', Source Image : AI, Condition : LE, Target Values : 1, 2, 3, 4
```

The following example is invalid because it specifies a wildcard in the Target Values when the condition code is not EQ or NE.

```
Type of filter: INCLUDE  
Source Field: 'AA', Source Image: AI, Condition: GT, Target Value: *xyz
```

How Multiple Filter Conditions Are Interpreted

You can specify multiple filter conditions within a single audit filter definition. Using the `Group` field on the Filter Condition screen of the Adabas Auditing Configuration to define your audit filter definitions, use the same group number for those conditions you want ANDed.

Conditions with different `Group` numbers are logically ORed.

For conditions that are ANDed (have the same `Group` number), all conditions in that group must be true for the group condition to be true.

For conditions that are ORed (have different `Group` numbers), any one of the conditions of the group must be true for the filter to be true.

Specifying a Range of Values

You can specify a range of values in your filter condition by creating two conditions that are logically ANDed (see [How Multiple Filter Conditions Are Interpreted](#)). Simply define one filter condition to test for values greater than (GT) or greater than or equal to (GE) the lowermost value. Then define the second filter condition to test for values less than (LT) or less than or equal to (LE) the uppermost value. As both conditions must be true since they are logically ANDed, your range specification is assured.

Field Type Considerations

Ideally, when a Source Field is compared to a Target Field, the field types will be the same. However, it is possible to compare fields of different formats. For example, you can compare a packed decimal format Source Field with a binary format Target Field. For a complete list of compatible Adabas field types, refer to your *Adabas* documentation.

This section covers the following topics related to how fields of different formats are compared:

- [Valid Comparison Table](#)
- [Source Field Value vs Target Field Value Comparison Processing by Field Type](#)
- [Source Field Value vs Target Values Comparison Processing by Field Type](#)

Valid Comparison Table

An asterisk (*) in a cell in the following table indicates that a comparison of the field types is valid. A blank in a cell in the table indicates that a comparison is not supported.

Field Data Type	Alphanumeric	Unpacked	Packed	Binary	Floating Point	Wide-Character	Fixed Point
Alphanumeric	*			*		*	
Unpacked		*	*	*	*		*
Packed		*	*	*	*		*
Binary	*	*	*	*	*		*
Floating Point		*	*	*	*		*
Wide-Character	*					*	
Fixed Point		*	*	*	*		*

Source Field Value vs Target Field Value Comparison Processing by Field Type

The following table lists the conversions that apply when comparing Source Field values with Target Field values:

Source Field Data Type	Target Field Data Type	Comparison Conversion Notes
Unpacked	Unpacked	The Source Field value and Target Field value are converted to packed form for comparison.
Binary	Packed	The Target Field value is converted to binary for comparison.
	Unpacked	The Target Field value is converted to binary for comparison.
	Alphanumeric	The Source Field value and Target Field value are compared as is.
Packed	Packed	The Source Field value and Target Field value are compared as is.
	Unpacked	The Target Field value is converted to packed for comparison.
	Binary	The Target Field value is converted to packed for comparison.
	Fixed	The Target Field value is converted to packed for comparison.
Fixed	Packed	The Source Field value is converted to packed for comparison.
	Unpacked	The Source Field value and Target Field value are converted to packed form for comparison.
	Binary	The Source Field value is converted to binary for comparison.
	Fixed	The Source Field value and Target Field value are compared as is.



Notes:

1. When either the Source Field or Target Field is of type floating-point (but not both fields), the other field will be converted to floating point, and a floating-point comparison will be made.
2. The conversion of very large numbers in a numeric format other than floating point to floating may result in a loss of precision because as the numbers get bigger, the range of numbers that may be represented in the floating point format is reduced. For example, the value 99,999,999,999,999,999 will be converted to the floating-point value 99,999,999,999,999,984.

Source Field Value vs Target Values Comparison Processing by Field Type

The following table lists the conversions that apply when comparing Source Field values with Target Values:

Source Field Data Type	Target Value Data Type	Comparison Conversion Notes
Any	Any	The Target Value(s) are converted to the data type of the Source Field for comparison.



Note: The conversion of Target Value(s) to the data type of the Source Field can cause problems in the accuracy of filter condition processing if a Target Value in the list cannot be converted or is otherwise incompatible with the required Source Field type.

Varying Field Length Considerations

When the length of the Source Field and Target Field are different, the shorter value is converted to the size of the longer value. For alphanumeric data, the value is padded on the right with blanks. For numeric data, the value is padded on the left with hexadecimal zeros.

Using Wildcards

You can use an asterisk (*) as a wildcard for Target Values if the condition code being used is EQ (equal) or NE (not equal). You cannot use wildcard characters for any other filter conditions (GT, LT, LE, or GE).

Note:

Wildcard values are not supported for wide character fields.

- If you want to test the Source Field value for any Target Value beginning with a specific string of characters, simply append an asterisk to the end of the Target Value. For example, to test for a Source Field value starting with the characters "POW", specify "POW*" as the Target Value.
- If you want to test the Source Field value for the presence of a specific string within its value, precede and supersede the string with an asterisk. For example, to test for the presence of the string "WER", specify "*WER*" as the Target Value.
- If you need to test for the presence of an asterisk itself in a Source Field value, specify two asterisks in a row for the Target Value ("**").

5 Maintaining Format Buffer Definitions

- Listing Format Buffer Definitions 40
- Adding Format Buffer Definitions 41
- Modifying Format Buffer Definitions 44
- Copying Format Buffer Definitions 45
- Deleting Format Buffer Definitions 46

This section describes the following topics:

Listing Format Buffer Definitions

> To use the Adabas Auditing Configuration to list the Format Buffer definitions stored in the Auditing system file, complete the following steps:

- Select option G from the Adabas Auditing Configuration Main Menu.

The List of Format Buffers screen appears showing all Format Buffer definitions in the Adabas Auditing Configuration.

```
17:48:52          ***** A D A B A S  AUDITING CONFIGURATION *****          2021-01-12
                                     List of Format Buffers                                     M-RP1130

Sel Title                                          Name      Pub
-----
_  TITLE_OF_SALARY_FILE_FORMAT_BUF  SLRYFBUF  Y

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help Gen  Exit Add  Repos Name  -    +                               Menu  ←
←
```

The following tables describe the options on this menu.

Sel	Allows you to:
M	Modify a Format Buffer definition
C	Copy a Format Buffer definition
D	Delete a Format Buffer definition
PF Key	Allows you to:
PF1	Get screen help
PF2	Generate a Format Buffer from Predict
PF3	Exit this screen and return to the previous screen
PF4	Add a new Format Buffer definition
PF5	Reposition to a specific Format Buffer definition in the list
PF6	Toggle between the sorting of Format Buffers by Name or Title
PF12	Exit this screen and return to the main menu

Adding Format Buffer Definitions

➤ To use the Adabas Auditing Configuration to generate a Format Buffer definition using Predict, complete the following steps:

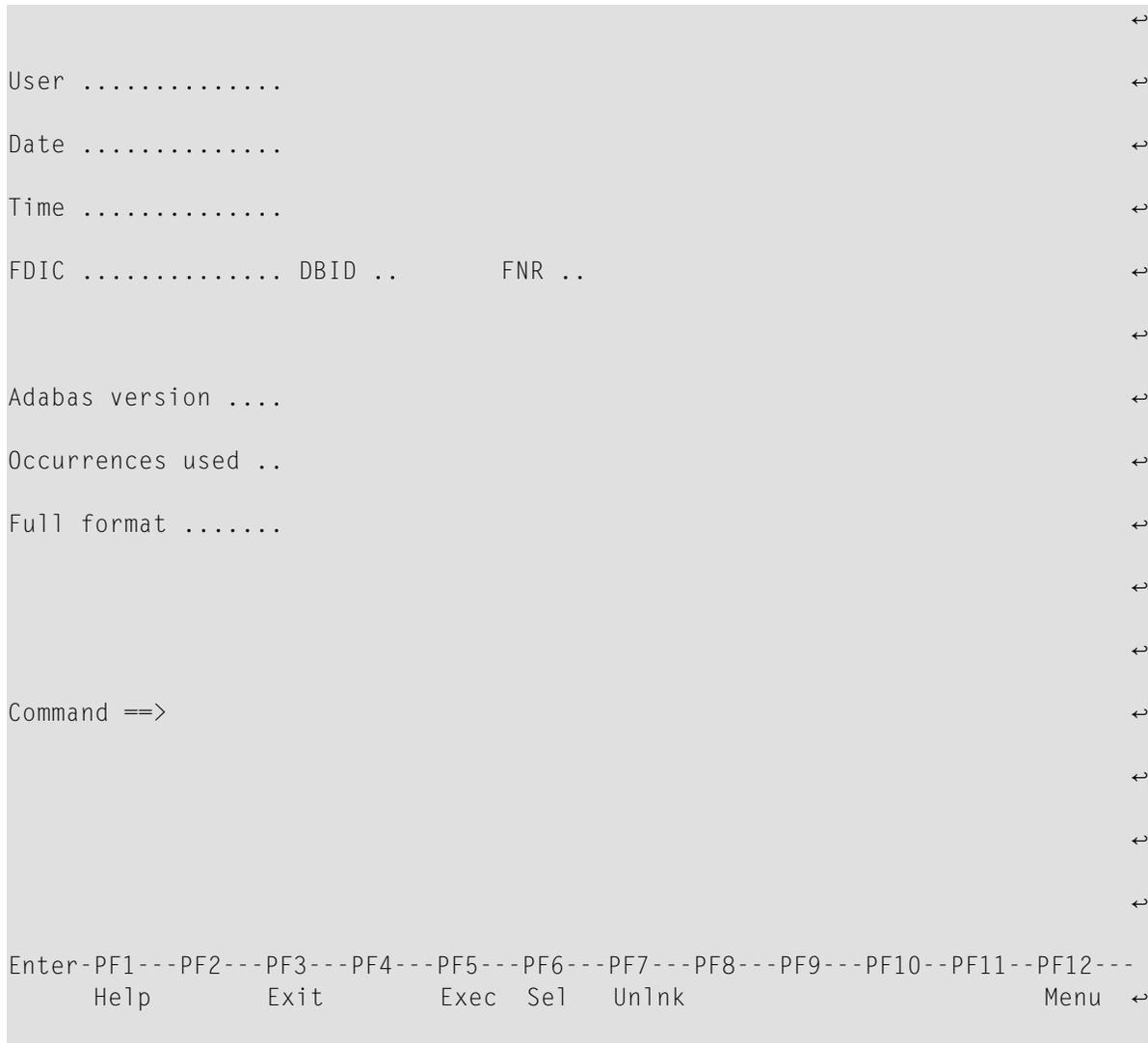
- 1 Select G from the Adabas Auditing Configuration main menu to list the Format Buffer definitions, as described earlier in *Listing Format Buffer Definitions*.
- 2 Press PF4 (Add).

The Predict Parameters screen appears.

```

11:55:22          ***** A D A B A S  AUDITING CONFIGURATION *****          2021-03-18
FDIC=(1955,13)                                Predict Parameters                                M-RP1121 ←
                                                                                               ←
FB Name ..... _____                                                                                               ←
                                                                                               ←
File ID ..... * _____                                                                                               ←
Target file ID .. * _____                                                                                               ←
                                                                                               ←
----- Generation Information -----                                                                                               ←

```



3 Update the fields on this screen as described in the following table:

Field Name	Description	Default
FB Name	A unique name for the format buffer definition. The name must be between one and seven characters long.	none
File ID	The name of a Predict file with a file type of Adabas (A) or Adabas user view (U). Place your cursor on this field and press PF6 to select a file from a List of Predict Files screen. To select from the list screen, type an "S" next to the file you want to use and press PF5.	none
Target file ID	The name of a Predict file with a file type of sequential (S). This file may be used to insert space notation (nX) into the format buffer. For fields in the target file with matching definitions in the File ID file (in other words, if a field exists with the same field long name), a short name clause is	none

Field Name	Description	Default
	<p>generated. For fields that do not have a matching definition in the File ID file, an appropriate space notation (nX clause) is generated. The spaces defined by nX clauses can be filled using a user exit.</p> <p>Place your cursor on this field and press PF6 to select a file from a List of Predict Files screen. To select from the list screen, type an "S" next to the file you want to use and press PF5.</p>	

- 4 When you first create a definition, the remaining fields on this screen are blank. However, when you modify the definition later, they are filled in, although you cannot modify them. These display-only fields are described in the following table:

Field Name	Description
FDIC=(top of screen)	The current database and file number of the Predict file.
User	The user ID of the user who generated the Format Buffer.
Date	The date the Format Buffer was generated.
Time	The time of day the Format Buffer was generated.
FDIC...DBID..FNR	The database and file number of the Predict file.
Adabas version	The version of Adabas for which the Format Buffer was generated.
Occurrences used	<p>How multiple occurrences of PE and MU fields are generated in the Format Buffer and resulting field table (GFFT).</p> <p>A value of "M" indicates that the maximum number of occurrences should be generated (191).</p> <p>A value of "N" indicates that no occurrences will be generated.</p> <p>A value of "Y" indicates that the number of occurrences defined by the Predict Occ attribute should be generated.</p>
Full format	<p>Whether the full Format Buffer was generated. The full Format Buffer includes the length and format of Adabas fields.</p> <p>A value of "Y" indicates that the full format buffer was generated.</p> <p>A value of "N" indicates it was not.</p>

- 5 When you have supplied values for the FB Name, File ID, and Target file ID fields, press PF5 to start generating the Format Buffer.

A small window appears requesting more information:

```

+-----+
! Adabas Version ...* I7      !
! Occurrences used..* Y      !
! Full format ..... Y (Y/N) !
+-----+
    
```

6 Update the fields on this small window as described in the following table:

Field Name	Description	Default
Adabas version	The version of Adabas for which the format buffer will be generated. The version should be expressed as "I7" or "R7". If you want special fields and descriptors included in the generated FB and corresponding field tables (GFFTs), specify "R7".	I7
Occurrences used	How multiple occurrences of PE and MU fields are generated in the FB. A value of "M" indicates that the maximum number of occurrences should be generated (191). A value of "N" indicates that no occurrences will be generated. A value of "Y" indicates that the number of occurrences defined by the Predict Occ attribute should be generated.	Y
Full format	You cannot edit this parameter. It indicates that the full format buffer should be generated.	Y

7 When these fields are set appropriately, press Enter.

The Format Buffer definition and field table (GFFT) are generated and the Format Buffer screen appears.

8 Press PF5 to save the Format Buffer definition in the Auditing system file.

Modifying Format Buffer Definitions

» To use the Adabas Auditing Configuration to modify a Format Buffer definition in the Auditing system file:

- 1 List the Format Buffer definitions in the Adabas Auditing Configuration, as described earlier in *Listing Format Buffer Definitions*.
- 2 Locate the definition you want to modify on the screen and enter an M in the Sel column for that definition.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

An appropriate Format Buffer definition screen appears for the Format Buffer you selected.

- 3 For information about the fields on this screen, refer to the field descriptions described earlier in *Adding Format Buffer Definitions*.



Note: You cannot alter the name of the Format Buffer definition. If you want to rename a Format Buffer definition, first copy it using the name you want and then delete the original.

- 4 When all modifications have been made, press PF5 to save the changes.

Copying Format Buffer Definitions

➤ To use the Adabas Auditing Configuration to copy a Format Buffer definition in the Auditing system file:

- 1 List the Format Buffer definitions in the Adabas Auditing Configuration, as described in *Listing Format Buffer Definitions*.
- 2 Locate the definition you want to copy on the screen and enter a C in the Sel column for that definition.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

A dialog appears requesting a Title and Name for the copy of the Format Buffer definition.

```
Enter new
Title: _____
Name: _____
or press PF3 to cancel
```

- 3 Specify new, unique Title and Name for the copy of the Format Buffer definition and press Enter.

The Format Buffer definition is copied and the copy appears on the List of Format Buffers screen.

Deleting Format Buffer Definitions

➤ To use the Adabas Auditing Configuration to delete a Format Buffer definition in the Auditing system file:

- 1 List the Format Buffer definitions in the Adabas Auditing Configuration, as described in *Listing Format Buffer Definitions*.
- 2 Locate the definition you want to delete on the screen and enter a D in the Sel column for that definition and press Enter. The Format Buffer definition is deleted.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

6 Maintaining Subscription Definitions

- Listing Subscription Definitions 48
- Adding Subscription Definitions 49
- Modifying Subscription Definitions 55
- Copying Subscription Definitions 55
- Deleting Subscription Definitions 56

A Subscription is a set of specifications to be applied to the auditing of the data. These include (but are not limited to):

- Architecture key, output alpha, and wide-character keys that should be used
- Various settings relating to the availability of the subscription in specific circumstances

Subscription definitions identify subscription file definitions that should be used. At least one subscription file definition is required.

This section describes the following topics:

Listing Subscription Definitions

➤ To use the Adabas Auditing Configuration to list the Subscription definitions stored in the Auditing system file, complete the following steps:

- Select option S from the Adabas Auditing Configuration Main Menu.

The Available Subscriptions screen appears showing all Subscription definitions in the Adabas Auditing Configuration.

```
17:52:32          ***** A D A B A S  AUDITING CONFIGURATION *****          2021-01-12
                                     Available Subscriptions                                     M-RP1400

Incomplete      Sel  Title                                     Name      Description
-----
----->  C      _  PAYROLL_APPLICATION_SUBSCRIPTION  PAYRSUB1  PAYROLL APPLIC
           _  WAREHOUSE_APPLICATION_SUBSCRIPT  WHS00011  WAREHOUSE APPL

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Repos Exit  Add          Name    -      +          Menu
```

The following tables describe the options on this menu.

Sel	Allows you to:
M/E/S	Modify a Subscription definition
C	Copy a Subscription definition
D	Delete a Subscription definition
PF Key	Allows you to:
PF1	Get screen help
PF2	Reposition to a specific Subscription definition in the list
PF3	Exit this screen and return to the previous screen
PF4	Add a new Subscription definition
PF6	Toggle between the sorting of Subscriptions by Name or Title
PF12	Exit this screen and return to the main menu

Adding Subscription Definitions

To use the Adabas Auditing Configuration to add a Subscription definition to the Auditing system file, complete the following steps:

- [Step 1. Access the Subscription Definition Area of the Adabas Auditing Configuration](#)
- [Step 2. Specify a Subscription Definition Name and Description](#)
- [Step 3. Add Destination\(s\) to the Subscription Definition](#)
- [Step 4. Add Source Files and related parameters to the Subscription Definition](#)
- [Step 5. Save the Subscription Definition](#)

Step 1. Access the Subscription Definition Area of the Adabas Auditing Configuration

➤ To access the Subscription Definition area of the Adabas Auditing Configuration, complete the following steps:

- 1 Select S from the Adabas Auditing Configuration main menu to list the Subscription definitions, as described above in [Listing Subscription Definitions](#).
- 2 Press PF4 (Add).

The Subscription Definition screen appears.

```
18:00:49          ***** A D A B A S  AUDITING CONFIGURATION *****      2021-01-12
                               Subscription Definition                               M-RP1410

Subscription Title ..... PAYROLL_APPLICATION_SUBSCRIP_2
Subscription Name ..... PAYRSUB2
Description ..... PAYROLL APPLICATION EXT-2

Destination Name List ..... _
File-related Parameters ..... _

Subscription Active ..... Y

Command ==>

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

Step 2. Specify a Subscription Definition Name and Description

➤ To specify a Subscription definition name and description:

- 1 Tab to the `Subscription Title` field and specify a unique title for the Subscription definition. The title must use alphanumeric characters and be between 1 and 32 characters long. Embedded spaces are automatically changed to underscores.
- 2 Tab to the `Subscription Name` field and specify a unique name for the Subscription definition. The name must use alphanumeric characters and be between 1 and 8 characters long.
- 3 Tab to the `Description` field and specify a description of the Subscription. The description must use alphanumeric characters and be between 1 and 32 characters long.
- 4 Although no Destinations or Source Files have yet been specified for the Subscription definition, press PF5 to save it.


```

_ INPL2 AUD
_ NULL1 NUL
_ NULL2 NUL
_ TESTDAY1 AUD
_ TESTNUL2 NUL

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

```

- 3 Choose the required Destination by selecting it with an “S” and press PF5 to accept it.
The selected Destination is added to the Subscription definition.

Step 4. Add Source Files and related parameters to the Subscription Definition

➤ To add/modify one or more Source Files (and related parameters) to the Subscription definition:

- 1 On the Subscription Definition screen for the Subscription being added/modified mark the File-related Parameters field with any character (e.g. “S”).

The List of Subscription SFILES screen appears with the Subscription name listed at the top of the screen.

```

18:24:17      ***** A D A B A S  AUDITING CONFIGURATION *****      2021-01-12
                List of Subscription SFILES                          M-RP1415
Subscription  TEST1      Current
                Title  TITLE_FOR_SUBSCRIPTION_TEST1
                send Data      send FB      send Request      send Client
Sel  DBID  File  S  D  I  U  BI  S  I  U  S  D  I  U  S  D  I  U
-----
_    1955   1   Y  Y  Y  Y  N   Y  Y  Y   Y  Y  Y  Y   Y  Y  Y  Y

Command ==>

```

```

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit  Add      -      +                      Menu  ←
←
    
```

- 2 Press PF4 to add a new Subscription SFILE entry.

The File-Related Parameters screen appears, either by PF4 (when adding an entry) or by selecting an entry (when modifying an existing entry).

```

18:55:19          ***** A D A B A S  AUDITING CONFIGURATION *****          2021-01-12
                                File-Related Parameters                                M-RP1420

Subscription Title ..... TITLE_FOR_SUBSCRIPTION_TEST1
Subscription Name ..... TEST1      Current
Description ..... TEST 1
DBID / File Number ..... _____

                                Format and Filter Settings
Data Format Buffer name ..... _____ Request FB name ..... _____
Request Filter name ..... _____ ←
Data Filter name ..... _____ MF Client FB name ... .. _____
Data Filter FB name ..... _____ MF Client Filter name ... .. _____
Data Origin (Mf,Luw,Both) - LUW Client FB name ..... _____
                                LUW Client Filter name ..... _____

Buffers      Data BI FB SB VB UB Req Clnt
Select cmd ... Y      Y N N N Y Y
Insert cmd ... Y      Y           Y Y
Update cmd ... Y N Y           Y Y
Delete cmd ... Y                Y Y

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit      Save Sel                      Menu  ←
←
    
```

The File-related parameter field names are described in the following table:

Field Name	Description	Default
Subscription Title	The previously entered title of the current Subscription.	none
Subscription Name	The previously entered name of the current Subscription.	none
Description	The previously entered description of the current Subscription.	none
DBID / File Number	Specify the DBid and the file number for which you want to have Auditing information extracted.	none

Field Name	Description	Default
Data Format Buffer name	Choose an existing FB for the Data being sent.	none
Data Filter name	Choose an existing Filter name to apply to the Data Format Buffer.	none
Data Filter FB name	Choose an existing Format Buffer that applies to the Data Filter name chosen.	none
Data Origin (Mf,Luw,Both)	Specify the origin of the audit event; M for Mainframe (MF), L for Linux/Unix/Windows (LUW), or B for Both.	none
Request FB name	Cannot be chosen at this release, internal default.	none
Request Filter name	Specify the filter name that will be applied to the Request FB for selection of data.	none
MF Client FB name	Cannot be chosen at this release, internal default.	none
MF Client Filter name	Specify the filter name that will be applied to the Mainframe Client FB for selection of data.	none
LUW Client FB name	Cannot be chosen at this release, internal default.	none
LUW Client Filter name	Specify the filter name that will be applied to the LUW Client FB for selection of data.	none
Data Buffer	Set indicators of "Y", or "N" if you desire the buffer to be sent for Select, Insert, Update, or Delete commands.	Y
BI Buffer	Set to "Y" if the Before Image Data buffer is required to be sent.	N
FB Buffer	Set to "Y" if the Format Buffer data is required to be sent.	Y
SB Buffer	Future setting, not used at the Beta release.	N
VB Buffer	Future setting, not used at the Beta release.	N
UB Buffer	Future setting, not used at the Beta release.	N
Request Buffer (Req)	For the Beta release, not available for choice.	Y
Client Buffer (Clnt)	For the Beta release, not available for choice.	Y



Notes:

1. The PF6 selection option applies to any of the `Format` or `Filter` name fields. Simply place the cursor at the desired field location, press PF6, and you get a selection of the appropriate values to select from. You can also enter the name for those fields without going through the selection process.
2. For the `Buffer` areas, with the commands listed; only the `Data`, `BI`, and `FB` fields are selectable for setting at this release.
3. Press PF5 to save the Source File and related file parameters to the Subscription definition.

Step 5. Save the Subscription Definition

➤ To save the Subscription definition:

- Press PF5 to save the Subscription definition in the Auditing system file.

Modifying Subscription Definitions

➤ To use the Adabas Auditing Configuration to modify a Subscription definition in the Auditing system file:

- 1 List the Subscription definitions in the Adabas Auditing Configuration, as described above in *Listing Subscription Definitions*.
- 2 Locate the definition you want to modify on the screen and enter an M in the Sel column for that definition.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

An appropriate Subscription definition screen appears for the Subscription you selected.

- 3 For information about the fields on this screen, refer to the field descriptions described above in *Adding Subscription Definitions*.



Note: You cannot alter the name of the Subscription definition. If you want to rename a Subscription definition, first copy it using the name you want and then delete the original.

- 4 When all modifications have been made, press PF5 to save the changes.

Copying Subscription Definitions

➤ To use the Adabas Auditing Configuration to copy a Subscription definition in the Auditing system file:

- 1 List the Subscription definitions in the Adabas Auditing Configuration, as described in *Listing Subscription Definitions*.
- 2 Locate the definition you want to copy on the screen and enter a C in the Sel column for that definition.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

A dialog appears requesting a Title and Name for the copy of the Subscription definition.

```
Enter new  
Title: _____  
Name: _____  
or press PF3 to cancel
```

- 3 Specify new, unique Title and Name for the copy of the Subscription definition and press Enter.

The Subscription definition is copied, and the copy appears on the Available Subscriptions screen.

Deleting Subscription Definitions

➤ To use the Adabas Auditing Configuration to delete a Subscription definition in the Auditing system file:

- 1 List the Subscription definitions in the Adabas Auditing Configuration, as described in [Listing Subscription Definitions](#).
- 2 Locate the definition you want to delete on the screen and enter a D in the Sel column for that definition.. Press Enter. The Subscription definition is deleted.

You can locate the definition you want in the list by pressing the PF7 (F7) or PF8 (F8) keys to scroll through the list. You can also press PF2 (F2) to specify the name of the definition to which the list should be repositioned.

7 Maintaining Global Definitions

➤ **To maintain Global definitions:**

- 1 Select option 'V' from the Adabas Auditing Configuration main menu.

The following screen appears:

```
20:32:07          ***** A D A B A S  AUDITING CONFIGURATION *****          2020-09-24 ↵
                                     Global Definitions                               M-RP1110 ↵
                                     ↵
Auditing pool warning                                                         ↵
  Increment .....                10                                             ↵
  Message Interval ..... _____60                                           ↵
  Message Limit ..... _____5                                              ↵
  Percent .....                  _0                                             ↵
                                     ↵
Connect Count.....                _____0                                     ↵
Connect Interval..... _____0                                               ↵
                                     ↵
Destination Full Delay ..          _60                                          ↵
                                     ↵
```

```

Maximum Output Size ..... ____100000
Log Input ..... ____1
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
Help      Exit      Save      Menu

```

The Global definition field names are described in the following table:

Field Name	Description	Default
Auditing Pool Warning Message Increment	The increment, in percent of auditing pool usage, at which auditing pool warning messages should be written. Valid values are 1 – 99.	10
Auditing Pool Warning Message Interval	The interval, in seconds, during which auditing pool usage warning messages are suppressed on the console. Valid values are 1 – 2,147,483,647.	60
Auditing Pool Warning Message Limit	The number of auditing pool usage messages that may be written before these messages are suppressed. Valid values are 1 – 2,147,483,647.	5
Auditing Pool Warning Percent	The interval, in seconds, during which auditing pool usage warning messages are suppressed on the console. The percent of auditing pool usage, at which auditing pool warning messages should be written. Valid values are 0 - 99. The default value of 0 means warning messages will not be written.	0
Connection Count	The number of connection attempts to the Audit Server an Adabas nucleus should attempt when the first attempt to connect fails. Valid values are 0 – 2,147,483,647. A value of 0 means no subsequent connection attempts will be made after the first connection attempt fails.	0

Field Name	Description	Default
Connection Interval	<p>The interval, in seconds, between connection attempts when an attempt to connect to an Audit Server by an Adabas nucleus fails.</p> <p>Valid values for this parameter are 0 – 2,147,483,647.</p> <p>A value of 0 means no subsequent connection attempts will be made after a connection attempt fails.</p>	0
Destination Full Delay	The number of seconds between retry attempts when resending auditing data to a defined destination.	60
Max Output Size	<p>The maximum output message size for the Adabas Auditing. The minimum value you can specify for this field is 32768.</p> <p>This parameter may be specified in bytes or it may be specified with the suffix K to indicate kilobytes. The maximum value is 2,147,483,647 bytes. The practical maximum is limited by the region size of the Adabas Audit Server. One output buffer is acquired for each output task.</p>	100000
Log Input	<p>Whether or not the Adabas Audit Server should use its SLOG system file as a temporary storage location for incoming audit data before they are queued for processing. Once audit data has been written to the SLOG system file, the Adabas Audit Server processes them using a throttling mechanism so that only a limited amount of the Audit pool (LAP) space is used at a time. Valid values are:</p> <ul style="list-style-type: none"> ■ ALL (indicating that input audit data will always be written to the SLOG system file) ■ NO (the default, indicating that input audit data will not be written to the SLOG system file), or ■ an integer in the range from 1 to 99. The integer setting specifies a threshold percentage of the LAP (Audit pool space) that can be used before triggering the writing of input audit data to the SLOG system file 	NO

- 2 Press PF5 to save your settings.

