

# **Adabas Auditing on Mainframe**

## **Installation**

Version 221

October 2021

This document applies to Adabas Auditing on Mainframe Version 221 and all subsequent releases.

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

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# Installation

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This chapter describes the prerequisites and installation procedure for installing Adabas Auditing.

<a href="#">System Requirements</a>	Describes the system requirements of Adabas Auditing.
<a href="#">About the Installation Tape</a>	Describes the installation tape.
<a href="#">Installation for z/OS</a>	Provides steps in installing Adabas Auditing on z/OS systems.
<a href="#">Activate Auditing for Application Files</a>	Gives instructions how to activate Auditing for Application Files.
<a href="#">Activate Auditing for TP Monitors</a>	Describes how to activate Adabas Auditing for TP monitors.
<a href="#">Activating Auditing for LUW applications</a>	Describes how to enable LUW applications for auditing.

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# 1

## About this Documentation

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## Document Conventions

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Convention	Description
<b>Bold</b>	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

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### 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](mailto: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](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**

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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 System Requirements

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This section describes the system requirements of Adabas Auditing.

## Supported Operating System Platforms

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Software AG generally provides support for the operating system platform versions supported by their respective manufacturers. When an operating system platform provider stops supporting a version of an operating system, Software AG will stop supporting that version.

For information regarding Software AG product compatibility with IBM platforms and any IBM requirements for Software AG products, please review the [Product Compatibility for IBM Platforms web page](#).

Before attempting to install this product, ensure that your host operating system is at the minimum required level. For information on the operating system platform versions supported by Software AG products, complete the following steps:

1. Access Software AG's Empower web site at <https://empower.softwareag.com>.
2. Log into Empower.
3. Once logged in, you can expand Products & Documentation in the left menu of the web page and select Product Version Availability to access the Product Version Availability screen.
4. Use the fields on the top of this screen to filter its results for your Software AG product. Click the Search button and the supported Software AG products will be listed in the table below the filter criteria. This list provides, by supported operating system platform:
  - the Software AG general availability (GA) date of the Software AG product
  - the date the operating system platform is scheduled for retirement (OS Retirement)
  - the Software AG end-of-maintenance (EOM) date for the product
  - the Software AG end-of-sustained-support (EOSS) date for the product.



**Note:** Although it may be technically possible to run a new version of your Software AG product on an older operating system, Software AG cannot continue to support operating system versions that are no longer supported by the system's provider. If you have questions about support, or if you plan to install this product on a release, version, or type of operating system other than those listed on the Product Version Availability screen described above, consult Software AG technical support to determine whether support is possible and under what circumstances.

## Supported Hardware

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For general information regarding Software AG product compatibility with other platforms and their requirements for Software AG products, visit Software AG's [Hardware Supported](#) web page.

## Adabas Requirements

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This section lists the Adabas related requirements for successful operation of Adabas Auditing.

- [Adabas Version Requirements](#)
- [ADARUN Requirements](#)

### Adabas Version Requirements

The Adabas Audit Server must run with a minimum Adabas version of 8.5 SP1 or, if the Adabas version is greater than 8.5 SP1, the same (or later) version of Adabas as the Adabas database(s) whose data is being audited.

Adabas databases whose data is to be audited must run with Adabas version 8.4 SP2 or later.

In all cases, the Adabas version must be updated with the appropriate version specific zaps from the `ALAvrs.MVSZAPS` data set and any subsequent `ALAvrs.MVSZnnn` data sets, if they have been provided.

### ADARUN Requirements

Adabas Auditing requires some ADARUN parameter settings. For more information, refer to the [Installation for z/OS](#) section below.

## Adabas Online System (AOS) Requirements

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A licensed copy of Adabas Online System (AOS) or the demo version of AOS are not required to support Adabas Auditing.

However, AOS offers some useful statistics and help with the planning and administrative functions of Adabas Auditing. If you choose to install it, be sure to follow the installation instructions in the AOS manual for licensed versions.

If you only use a demo copy of AOS, have in mind that:

- Only limited information concerning Adabas Auditing is available to you with the demo copy.

- The same versions and maintenance levels of the AOS demo code are required as for a licensed copy of AOS.

## Entire Net-Work Requirements

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1. When you use Entire Net-Work Administration (or Entire Net-Work for Mainframes) and Entire Net-Work Client (or Entire Net-Work for Open Systems), the Adabas Audit Servers and Adabas databases you maintain must be UES-enabled.
2. As an alternative to running a separate Net-work session, the Adabas Audit Server can run with ADATCP. For more information, see the *Entire Net-Work Administration* documentation > *Adding Targets*. For further details on ADATCP, refer to the *Entire Net-Work Administration* documentation > *Enabling Direct TCP/IP Access (ADATCP) to Your Adabas Nucleus*.

If the appropriate Entire Net-Work mainframe and client products are not already installed on your systems, install Entire Net-Work Administration on the mainframe and Entire Net-Work Client on the client side. For complete information on these products, please refer to the section *Entire Net-Work Client Administration* and the *Administration* section of the respective platform's *Entire Net-Work* documentation.

## Natural Requirements

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Natural 8.2 SP7 or later is recommended when using the Adabas Auditing Configuration to set up Auditing definitions. Auditing is independent of your version of Natural and is compatible with supported Natural levels.

## Predict Requirements

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Should you decide to use the Adabas Auditing feature that allows you to generate format buffers and a field table using Predict, you must also install a supported version of Predict.

## LUW Application Requirements

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For LUW applications to be audited, the following are the minimum release levels required:

- WCL 1.8.1.1
- ACL 7.1

## Licensing Requirements

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In order to execute correctly, Adabas Auditing requires `MLC136.LOAD` or higher load library to be installed regardless of the version of the Adabas nucleus. For more information, see [Installation for z/OS](#).





# 3

## About the Installation Tape

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The section describes the installation tape.

## Data Sets Delivered

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This section describes the data sets that are delivered with Adabas Auditing. In all data set names *vrs* represents the version, release, and maintenance level numbers of the release of Adabas Auditing. The following data sets are delivered with Adabas Auditing for z/OS:

Data Set Name	Contains
ALAvrs.INPL	INPL of the Adabas Auditing Configuration
ALAvrs.IX01	INPL updates for Adabas Auditing Configuration, if they are provided
ALAvrs.SYSF	Base Auditing System File
ALAvrs.JOBS	Sample JCL
ALAvrs.LOAD	Load modules
ALAvrs.ZAPS	Zaps for the support of Adabas Auditing

## Copying the Tape Contents

---

Before you perform the individual installation procedure for each component, copy the data sets from the supplied installation medium to your disk.

The way you copy the data sets depends on the installation method and the medium used:

- If you use System Maintenance Aid (SMA), refer to the copy job instructions provided in the *System Maintenance Aid* documentation.
- If you are not using SMA and want to copy the data sets from CD-ROM, refer to the *README.TXT* file on the CD-ROM.
- If you are not using SMA and want to copy the data sets from tape, follow the instructions in this section.

The following steps explain how to copy all data sets from tape to disk:

- [Step 1: Copy Data Set COPY.JOB from Tape to Disk](#)
- [Step 2: Modify hilev.COPY.JOB on Your Disk](#)

### ■ Step 3: Submit COPY.JOB

#### Step 1: Copy Data Set COPY.JOB from Tape to Disk

1. Modify the following sample job according to your requirements:

```
//SAGTAPE JOB SAG,CLASS=1,MSGCLASS=X
//* -----
//COPY EXEC PGM=IEBGENER
//SYSUT1 DD DSN=COPY.JOB,
// DISP=(OLD,PASS),
// UNIT=(CASS,,DEFER),
// VOL=(,RETAIN,SER=tape-volser),
// LABEL=(2,SL)
//SYSUT2 DD DSN=hilev.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=disk-volser,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

where:

tape-volser is the VOLSER of the tape, for example: T12345

hilev is a valid high-level qualifier

disk-volser is the VOLSER of the disk.

2. Execute the job to copy the data set COPY.JOB to your disk.

#### Step 2: Modify hilev.COPY.JOB on Your Disk

1. Modify hilev.COPY.JOB according to your requirements.
2. Set EXPDT to a valid expiration date, for example, 99365.
3. Set HILEV to a valid high-level qualifier, for example, USERLIB.
4. Set LOCATION to a storage location, for example, STORCLAS=ABC or UNIT=3390,VOL=SER=USR123.

### **Step 3: Submit COPY.JOB**

Execute `hi lev.COPY.JOB` to copy single, multiple, or all data sets to your disk.

# 4

## Installation for z/OS

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Be sure your system meets the requirements described in the section [System Requirements](#) above.

To install Adabas Auditing, complete the following steps:



**Note:** The steps in this section will allow you to install Adabas Auditing, but they will not implement or start Auditing. How Auditing is implemented varies by site, but additional implementation and activation steps are described in the sections [Activate Auditing for Application Files](#) and [Activating Auditing for TP Monitors](#).

## Step 1. Install the Adabas Audit Load Modules

---

Install the Auditing load modules by concatenating the delivered load library in sequence or copying the modules to the library used for running the Adabas nucleus and utilities. The Adabas Audit load modules can be found in `ALAvrs.LOAD`.

## Step 2. Apply Necessary Zaps

---

If they are provided, apply any necessary zaps, as described in the `$README` file on the `ALAvrs.MVSZAPS` library and in any subsequent `ALAvrs.MVSZnnn` data sets.

## Step 3. Check, Prepare, and Install the Product License File

---

You must install a valid license file on all mainframe platforms in which your Software AG mainframe product is installed. The license file is provided as an XML document encoded in US-ASCII. It must remain in that format even on the mainframe and must not be modified. Any modification of the license file will invalidate the digital signature and the license check will fail. In the event of a check failure, please contact your Software AG technical support representative.

For a full product list of license file names, load modules and DD/Link names, refer to the *Adabas Installation* documentation.



**Note:** Thirty days before the license expires, you will receive license check failure messages. Your software product will still function, but these messages warn you that it is time to obtain a new license.

In this step you will prepare the license file, and then install it:

- [Preparing the Product License File](#)

## ■ Installing the Product License File

### Preparing the Product License File

The product license file is supplied on the individual customer installation tape or separately via an e-mail attachment. Before you can install the license, you must transfer it from e-mail or the installation tape and store it on a z/OS system. This section describes how to do this for a license distributed either by e-mail or on the installation tape.

#### ➤ To prepare the license file from an e-mail attachment, complete the following steps:

- 1 Transfer the license to z/OS, as described in the *Adabas for Mainframes* documentation > *Software AG Mainframe Product Licensing* > *Transferring a License File from PC to a z/OS Host Using FTP*.
- 2 Verify that the transferred license file is stored in an Adabas source library (with RECFM=F or RECFM=FB and LRECL=80), making sure to preserve its format as ASCII.

#### ➤ To prepare the license file from the installation tape, complete the following step:

- Verify that the license file is stored in an Adabas source library (with RECFM=F or RECFM=FB and LRECL=80), making sure to preserve its format as ASCII.

### Installing the Product License File

Once the license file has been prepared, you can install it in one of two ways:

- Convert the license to a load module (ALALIC) that is then loaded by the Adabas Audit Server.
- Reference the license file in the Adabas Audit Server start-up job by DD statement.

This section describes both methods.

#### ➤ To convert the license file to a load module, complete the following steps:

- 1 Review and modify sample job ASMLICAM in the Adabas JOBS library, as follows:

- Set the variable MLCLOAD to point to the license load library (MLCVRS.LOAD).



**Note:** Version 136 or higher of the license load library is required for the Adabas Audit Server and Adabas nucleus to execute correctly.

- Set the variable USRLOAD to point to an appropriate user load library.



**Note:** This user load library must also be included in the STEPLIB concatenation for the Adabas Audit Server.

- Set the LICFILE parameter to point to the data set containing the Adabas Audit Server license file you transferred to z/OS earlier.
  - Set the LMOD parameter to the load module name ALALIC.
- 2 Submit the sample job ASMLICAM. This job runs the MAKE function of the LICUTIL utility to convert the license text file to an assembler source module. ASMLICAM then links and assembles the assembler source to generate a load module called ALALIC which is stored in the specified user load library (USRLOAD). For more information about the LICUTIL utility, read the *Adabas for Mainframes* documentation > *Software AG Mainframe Product Licensing* > *Using The License Utility: LICUTIL*.
  - 3 Update your Adabas Audit Server start-up job to reference the user load library so ALALIC will be loaded by the Adabas Audit Server, as described in [Step 8: Set Up the Adabas Audit Server Start-up JCL](#).

➤ To reference the license file in the Adabas Audit Server start-up job, complete the following steps:

- 1 Make sure any previously created ALALIC load module is inaccessible to the Adabas load library being used by your Adabas Audit Server job. The Audit Server first tries to load ALALIC and, if unsuccessful, it reads from a dataset defined to the DD statement DDLALA.
- 2 Update your Adabas Audit Server start-up jobs to reference the license, as described in [Step 8: Set Up the Adabas Audit Server JCL](#).

## Step 4. Allocate and Format the Adabas Audit Server

---

Create a database to use as your Audit Server. Refer to *Reference > Utilities Used with Adabas Auditing > ADADEF MODIFY AUDITSERVER Function* or *ADADEF DEFINE AUDITSERVER Function* for an explanation of the parameters used for defining an Audit Server.



**Note:** User application files should not be loaded on the Adabas Audit Server.

## Step 5. Load the Auditing System File

---

To use Adabas Auditing and customize its processing, you must supply various Auditing definitions.

You maintain your Auditing definitions in the Auditing system file using the Adabas Auditing Configuration. The Adabas Auditing Configuration is an online interface that must be loaded into Natural before you can use it. Access to the Adabas Auditing Configuration is then available through Natural. For more information, refer to the *Adabas Auditing Configuration* chapter.



To maintain your Auditing definitions in the Auditing system file, you must first load the Auditing system file on the Adabas Audit Server.

➤ **To load an Auditing system file on the Adabas Audit Server:**

- 1 Use the ADALOD utility. A sample ADALOD utility job is provided in member ADALODSF of the `ALAvrs.JOB` data set. Refer to *Reference > Utilities Used with Adabas Auditing > ADALOD LOAD Parameters for the Adabas Audit Server* for an explanation of the parameters used for loading the Auditing system file. You need to specify the AUDITING parameter on the ADALOD LOAD function:

```
ADALOD LOAD FILE=nnnn,AUDITING
```

where `nnnn` is the number of the Auditing system file.

You have to also specify the supplied Auditing system file dataset `ALAvrs.SYSF` on the DDE-BAND input DD name.

- 2 Do either of the following in Natural to identify the physical database file to be associated with the system file:
  - Run a Natural NTLFILE macro for the file. For complete information, refer to Software AG's [Empower web site](#) > *Natural for Mainframes > Natural LFILE parameter* documentation.
  - When you start the Adabas Auditing Configuration ensure an LFILE parameter is specified either as a dynamic parameter or inside a Natural SYSPARM profile.

Regardless of which method you use, the LFILE setting should be:

```
LFILE=(89,dbid,file)
```

where `dbid` is the database ID of the Adabas Audit Server you created during installation and `file` is the Auditing system file you have loaded using ADALOD.

## Step 6. (Optional) Load an SLOG System File

If you intend to use the subscription logging (SLOG) facility, you will need an Auditing SLOG system file which is an Adabas system file on the Adabas Audit Server. Refer to the *Operations chapter > Using the Subscription Logging Facility > Setting up Subscription Logging* for an explanation of how to set up the Auditing SLOG facility.

## Step 7. Load the Adabas Auditing Configuration

---

Adabas Auditing Configuration is used to create and maintain Auditing definitions in the Auditing system file. You have to load it into Natural. To do this, use Natural's INPL utility to load the `ALAvrs.INPL` data set (and any supplied `ALAvrs.IXnn` updates) into the Natural system file libraries.

## Step 8. Set Up the Adabas Audit Server Start-up JCL

---

Set up the start-up JCL and parameters for the Adabas Audit Server job. Use the JCL for an existing Adabas nucleus as a starting point for creating the Audit Server JCL. A sample Audit Server start-up job is provided in member `ADANUC2` of the `ALAvrs.JOBS` data set.

Note the specification of the required Audit Log datasets `DDALOGRn` and the Audit Error dataset `DDAUDERR` as shown in the `ADANUC2` member.

If the `DDAUDERR` file is directed to a dataset it will be given the DCB attributes `RECFM=FB`, `LRECL=80`. Messages on `DDAUDERR` are formatted similarly to a multi-line WTO: the message number and DBID appear on only the first line of the message. Each line is prefixed with the Julian date and local time.

Refer to the *Reference* chapter > *Pertinent ADARUN Parameters for Auditing* for an explanation of the ADARUN parameters necessary for successful operation of Adabas Audit Server. Recommended values for some ADARUN parameters are as follows:

1. Set ADARUN parameter `LAP` to the size of the Auditing buffer. For performance reasons Software AG recommends setting `LAP` to a relatively large value (e.g. `LAP=40M`).
2. Set ADARUN parameter `LU` to 167,000 or greater.
3. Set ADARUN parameter `NAB` to a value greater than or equal to:

```
41 * 10 * the-number-of-Adabas-nuclei-sending-data-to-the-Adabas-Audit-Server
```

For example, if one Adabas nucleus will be sending data to the Adabas Audit Server, set the `NAB` parameter greater than or equal to 410 (for example `NAB=420`).

4. Set ADARUN parameter `NT` to a value greater than or equal to 15.

You must also make the following license-related modifications:

- Software AG licensing requires that the modules `LICMAIN` and `LICUTIL` be loaded when your Audit Server starts up. These modules are distributed in the `MLCvrs.LOAD` library. You must either:
  - Copy `LICMAIN` and `LICUTIL` into `ALAvrs.LOAD` or

- Concatenate `MLCvrs.LOAD` with `ALAvrs.LOAD`.
- Verify that the appropriate product license file is correctly referenced in the Audit Server job. Do either of the following:
  - Verify that the license load module installed in [Step 3: Check, Prepare, and Install the Product License File](#) is stored in a load library that is accessible to the Audit Server job. Add the user load library in which the license load module resides to the STEPLIB concatenation of the Audit Server job or copy the licensing module into `ALAvrs.LOAD` or
  - Verify that there is no ALALIC module accessible to the Audit server job and that the following DD statement is included in the Audit Server job:

```
//DDLALA DD DISP=SHR,DSN=dsn
```

where *dsn* is the data set name of the license file loaded from the tape in ASCII format. Note that *dsn* could reference a member in a partitioned data set.



**Note:** Adabas first tries to load the license load module ALALIC and, and if unsuccessful, it reads from the DDLALA data set.

## Step 9. Start the Adabas Audit Server

Run the Adabas Audit Server job you set up in the previous step. A sample Audit Server job is provided in member `ADANUC2` of the `ALAvrs.JOBS` data set.



# 5

## Activating Auditing for Application Files

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Once Adabas Auditing has been installed, the auditing of application files can be implemented as described by the following steps:

## Step 1. Supply Auditing Definitions to the Audit Server

---

Auditing definitions are used to customize the auditing process. This includes specifying the application files that are to be processed for auditing.

These auditing definitions are maintained in the Auditing system file and are read by the Adabas Audit Server at start-up. Refer to *Adabas Auditing Configuration* for information regarding creating and maintaining auditing definitions in the Auditing system file.

Stop and restart the Audit Server to pick up or refresh the auditing definitions in the Auditing system file.

## Step 2. Enable Database Auditing with ADARUN AUDITING=YES

---

To enable database auditing, you must add the ADARUN parameter `AUDITING=YES` to each Adabas nucleus job containing those application files which have been specified in the Auditing definitions used by the Audit Server.

Refer to the *Reference* chapter > *Pertinent ADARUN Parameters for Auditing* for more information on the `AUDITING=` parameter and other auditing related ADARUN parameters appropriate for an Adabas nucleus running `AUDITING=YES`.

## Step 3. Identify Files for Auditing by an Audit Name

---

Each Adabas file participating in auditing must have an audit name. This is a user assigned 8-character value allowing audit information to be tracked. The Audit ID should be unique across all files participating in auditing.

There are 2 ways to assign an audit name to a file:

1. Use the `AUDITNM=` parameter when the file is loaded with ADALOD.
2. Use the MODFCB function of ADADBS with the `AUDITNM=` parameter.

For more information about the use of the `AUDITNM=` parameter with ADALOD LOAD and ADADBS MODFCB, refer to *Reference* > *Utilities Used with Adabas Auditing*.

## Step 4. Enable File Auditing using Database ADAANP statements

---

To implement and activate auditing for application files, you must perform the following:

1. Add the DD name ADAANP to each Adabas nucleus running `AUDITING=YES`.
2. Allocate a sequential file or PDS member to this DD name.
3. For each application file to be audited, add the appropriate for your requirements ADAANP statements to the sequential file or PDS member in the corresponding nucleus JCL.

Refer to the *Reference > Adabas Nucleus Auditing Parameters* for more information about the required ADAANP parameters.

When all necessary modifications have been made, restart the Adabas nuclei.





# 6

## Activating Auditing for TP Monitors

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The following sections describe how to activate auditing for TP monitors.



**Note:** If you wish Natural-related client information to be included in the auditing data, then you must ensure that the Natural Profile parameter `ADAPRM=ON` is set.

## Installing Adabas Auditing under Com-plete

---

To prepare the Adabas link routine:

1. Copy sample member LCOGBL (provided in the `ADAvrs.SRCE` library) to any appropriate user source library where it can be modified.
2. Modify the LGBLSET parameters in the copied LCOGBL member according to your site requirements ensuring the parameter `AUDIT=` is added and set to YES.
3. Modify sample job ASMGBLS provided in the `ADAvrs.JOBS` library as described at the top of the job. When fully modified, the SET statement in the job should reference the LCOGBL member you prepared in the previous step, and the NAME link edit control statement should reference the name specified by the GBLNAME parameter within that member.
4. Once modified, submit the ASMGBLS job to assemble and link-edit the link globals module. A new link globals module with the name specified by the GBLNAME parameter will be generated in the user load library identified in the ASMGBLS job.
5. Copy sample job LNKLCO8 provided in the `ADAvrs.JOBS` library to a user source library.
6. Modify the sample job LNKLCO8 to link the new link globals module you created along with the following INCLUDE statement:

```
INCLUDE ALALIB(EABXCOM)
```

where ALALIB references the `ALAvrs.LOAD` library.



**Note:** Instructions for modifying the sample job are described at the top of the job. Be sure to direct the output from the job to an appropriate user load library. The module resulting from this job is called ADALCO.

7. Place the newly linked ADALCO module in a load library available to the Com-plete job.

For general information regarding the installation of Adabas with Com-plete and an explanation of the associated LGBLSET parameters, refer to the *Adabas for Mainframes* documentation > *Installing Adabas with TP Monitors*.

## Installing Adabas Auditing under CICS

To prepare the Adabas link routine:

1. Copy sample member CICSGBL (provided in the `ACIvrs.SRCE` library) to any appropriate user source library where it can be modified.
2. Modify the LGBLSET parameters in the copied CICSGBL member according to your site requirements ensuring the parameter `AUDIT=` is added and set to YES.
3. Modify sample job ASMGBLS (provided in the `ADAvrs.JOBS` library) as described at the top of the job. When fully modified, the SET statement in the job should reference the CICSGBL member you prepared in the previous step, and the NAME link edit control statement should reference the name specified by the GBLNAME parameter within that member.
4. Once modified, submit the ASMGBLS job to assemble and link-edit the link globals module. A new link globals module with the name specified by the GBLNAME parameter will be generated in the user load library identified in the ASMGBLS job.
5. Copy sample job LNKGCICS (provided in the `ACIvrs.SRCE` library) to a user source library.
6. Modify the sample job LNKGCICS to link the new link globals module you created along with the following INCLUDE statement:

```
INCLUDE ALALIB(EABXCIC)
```

where ALALIB references the `ALAvrs.LOAD` library.



**Note:** Instructions for modifying the sample job are described at the top of the job. Be sure to direct the output from the job to an appropriate user load library that will be made available to CICS in the DFHRPL library concatenation.

For general information regarding the installation of Adabas with CICS and an explanation of the associated LGBLSET parameters, refer to the *Adabas for Mainframes* documentation > *Installing Adabas with TP Monitors*.

## Installing Adabas Auditing under Batch/TSO

To prepare the Adabas link routine:

1. Copy sample member LNKGBLS (provided in the `ADAvrs.SRCE` library) to any appropriate user source library where it can be modified.
2. Modify the LGBLSET parameters in the copied LNKGBLS member according to your site requirements ensuring the parameter `AUDIT=` is added and set to YES.

3. Modify sample job ASMGBLS (provided in the `ADAvrs.JOBS` library) as described at the top of the job. When fully modified, the SET statement in the job should reference the LNKGBLS member you prepared in the previous step and the NAME link edit control statement should reference the name specified by the GBLNAME parameter within that member.
4. Once modified, submit the ASMGBLS job to assemble and link-edit the link globals module. A new link globals module with the name specified by the GBLNAME parameter will be generated in the user load library identified in the ASMGBLS job.
5. Copy sample job LNKLNK8 (provided in the `ADAvrs.JOBS` library) to a user source library.
6. Modify the sample job LNKLNK8 to link the new link globals module you created along with the following INCLUDE statement:

```
INCLUDE ALALIB(EABXMVS)
```

where ALALIB references the `ALAvrs.LOAD` library.



**Note:** Instructions for modifying the sample job are described at the top of the job. Be sure to direct the output from the job to an appropriate user load library. The module resulting from this job is called ADALNK.

7. Place the newly linked ADALNK module in a load library available to the Batch/TSO job.

For general information regarding the installation of Adabas with Batch/TSO and an explanation of the associated LGBLSET parameters, refer to the *Adabas for Mainframes* documentation > *Installing Adabas with TP Monitors*.

## Installing Adabas Auditing under IMS/TM

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To prepare the Adabas link routine:

1. Copy sample member LNIGBL (provided in the `AI Ivrs.SRCE` library) to any appropriate user source library where it can be modified.
2. Modify the LGBLSET parameters in the copied LNIGBL member according to your site requirements ensuring the parameter `AUDIT=` is added and set to YES.
3. Modify and run sample job ASMGBLS (provided in the `ADAvrs.JOBS` library) as described at the top of the job. When fully modified, the SET statement in the job should reference the LNIGBL member you prepared in the previous step, and the NAME link edit control statement should reference the name specified by the GBLNAME parameter within that member.
4. Once modified, submit the ASMGBLS job to assemble and link-edit the link globals module. A new link globals module with the name specified by the GBLNAME parameter will be generated in the user load library identified in the ASMGBLS job.
5. Copy sample job LNKLNK8 (provided in the `AI Ivrs.SRCE` library) to a user source library.

- Modify the sample job LNKLN18 to link the new link globals module you created along with the following INCLUDE statement:

```
INCLUDE ALALIB(EABXIMS)
```

where ALALIB references the `ALAvrs.LOAD` library.



**Note:** Instructions for modifying the sample job are described at the top of the job. Be sure to direct the output from the job to an appropriate user load library. The module resulting from this job is called ADALNI.

- Place the newly linked ADALNI module in a load library available to the IMS MPP regions.

For general information regarding the installation of Adabas with IMS/TM and an explanation of the associated LGBLSET parameters, refer to the *Adabas for Mainframes* documentation > *Installing Adabas with TP Monitors*.

## Adabas Auditing and Adabas Review

If you wish to install Adabas Auditing under a TP monitor which currently has Adabas Review installed, please observe the following points:

- Your existing LGBLSET Review-related parameters (REVIEW=, REVHID=, RVCLNT=) should be maintained. This is in addition to the `AUDIT=YES` parameter required to install Adabas Auditing.



**Note:** The parameter values `REVIEW=COR` and/or `RCVCLNT=COR` are not currently compatible with `AUDIT=YES` therefore replace these parameter values with `REVIEW=YES` and/or `RVCLNT=YES` accordingly.

- In your TP monitor Adabas link job which link-edits the Adabas link globals module with the Adabas Review TP monitor component, replace the Adabas Review component with the corresponding Adabas Auditing component according to the following table:

TP Monitor	Adabas Review Component	Adabas Auditing Component
Com-plete	RDBLXCOM	EABXCOM
CICS	RDBLXCIC	EABXCIC
Batch/TSO	RDBLXMVS	EABXMVS
IMS/TM	RDBLXIMS	EABXIMS

- If you have installed REVUEX1 (Review User Field User Exit), then you will have previously linked your user exit to the appropriate Adabas Review TP monitor component using the sample member LREVUEX1 (provided in the `REVvrs.JOBS` library). Use this same sample member to

link your user exit to the equivalent Adabas Auditing TP monitor component. Refer to the table above for the names of the corresponding components.

# 7     Activating Auditing for LUW applications

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The following section describes how to activate auditing for LUW applications.

## Enable LUW applications for auditing

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- Set the Natural Profile Parameter ADAPRM to on.
- Set the ACL variable WCLAUDIT=YES. This can be set as an environment variable, or in the wclclients.config file.



**Note:** Currently, for LUW, only Natural programs are eligible for auditing.