

Adabas for Linux, UNIX and Windows

External Backup Support

Version 7.0

October 2022

This document applies to Adabas for Linux, UNIX and Windows Version 7.0 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 © 1987-2022 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: ADAOS-EXTBACK-70-20220622

Table of Contents

External Backup Support v

1 About this Documentation 1

 Document Conventions 2

 Online Information and Support 2

 Data Protection 3

2 External Backup Support 5

External Backup Support

This document contains information about external backup support.

The following topic is covered:

- *External Backup Support*

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

Product Documentation

You can find the product documentation on our documentation website at <https://documentation.softwareag.com>.

In addition, you can also access the cloud product documentation via <https://www.software-ag.cloud>. Navigate to the desired product and then, depending on your solution, go to “Developer Center”, “User Center” or “Documentation”.

Product Training

You can find helpful product training material on our Learning Portal at <https://knowledge.softwareag.com>.

Tech Community

You can collaborate with Software AG experts on our Tech Community website at <https://tech-community.softwareag.com>. From here you can, for example:

- Browse through our vast knowledge base.
- Ask questions and find answers in our discussion forums.
- Get the latest Software AG news and announcements.
- Explore our communities.
- Go to our public GitHub and Docker repositories at <https://github.com/softwareag> and <https://hub.docker.com/publishers/softwareag> and discover additional Software AG resources.

Product Support

Support for Software AG products is provided to licensed customers via our Empower Portal at <https://empower.softwareag.com>. Many services on this portal require that you have an account. If you do not yet have one, you can request it at <https://empower.softwareag.com/register>. Once you have an account, you can, for example:

- Download products, updates and fixes.
- Search the Knowledge Center for technical information and tips.
- Subscribe to early warnings and critical alerts.
- Open and update support incidents.
- Add product feature requests.

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 External Backup Support

Adabas supports backing up databases using foreign, external backup systems. Such systems have several advantages over the backup utility ADABCK:

- a database that is split across several disks can be backed up or restored in a relatively short time.
- a volume mirror with the database containers can be easily restored.

These features can considerably reduce the time required to recover a database from a disaster situation.

External Backup

For an offline database, there are no special considerations to be taken into account, and the external backup system can be used without any Adabas-specific actions being required. However, there must not be any updating utility functions active (e.g. ADAMUP).

For an online database (if it is to meet the 24 x 7 requirement), the external backup system can only be used if the Adabas database is in a synchronized state. The parameter EXT_BACKUP of the operator utility ADAOPR can be used to ensure this: the keywords PREPARE and CONTINUE can be used.

EXT_BACKUP=PREPARE brings the database into a transaction-consistent state. New transactions will be blocked, but transactions that are currently open will continue processing. Database access and control calls are not delayed. The following restrictions apply:

- EXT_BACKUP=PREPARE will only be permitted if there are no updating utility functions active (e.g. ADAMUP).
- New utility update functions will be blocked or rejected.
- The ADAOPR functions SHUTDOWN, CANCEL, LOCK, STOPUSER, UNLOCK and FEOF=PLOG are not permitted once the EXT_BACKUP = PREPARE call has finished processing.
- Non-activity timeout checks are suspended.

If the EXT_BACKUP=PREPARE call is successful, the database is in the required state, and the following message is written to the database log file:

```
%ADANUC-I-EXTBPREP, preparing for external backup, (time stamp)
```

The external backup system can now be started to perform the backup. Once the backup has been made, EXT_BACKUP=CONTINUE should be used to lift the transaction-blocking mode and continue normal database operations. The following actions are performed:

- A new PLOG (implicit FEOF=PLOG) with a new session number is opened.
- Updating utility functions are reenabled.
- Non-activity timeout checks are reenabled.
- Suspended transaction commands are resumed.

After successful completion of the EXT_BACKUP=CONTINUE call, the following message is written to the database log file:

```
%ADANUC-I-EXTBCONT, continue from external backup, (time stamp)
```

External Restore

If an Adabas database is to be restored from an external backup system, the database must be offline, so there are no Adabas-specific considerations to be taken into account



Notes:

1. ADAOPR will write a SYNX checkpoint.
2. If an external backup system is used to backup/restore at the volume level (activation of disk mirrors), the PLOG must not be located on the same volume as the database.
3. If an external backup is to be aborted, you can issue EXT_BACKUP=ABORT from ADAOPR. In this case, the PLOG isn't switched, and no checkpoint is written.

Examples

The examples subdirectory of the installation contains some procedures that simplify the use of external backups and restores. There is one program each for backup and restore - these procedures are triggered by a configuration file. See the configuration file *xxx_conf* for detailed information. These procedures currently support the following system:

- Network Appliance (Filer snapshots, files napp_*)