

Adabas for UNIX, Windows and OpenVMS

Adabas Installation Guide

Version 6.3.1

April 2013

Adabas

This document applies to Adabas for UNIX, Windows and OpenVMS Version 6.3.1.

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

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Preface

This documentation provides you with the information necessary to install Adabas on UNIX, Windows and OpenVMS platforms.



Note: Before installing Adabas, we strongly recommend that you read the file *readme.txt* in the directory `<mountpoint>/unix/operating_system/ada/vnnn` (UNIX systems) or `<cdrom>\windows\ada` (Windows). This applies especially if you perform the installation in the character mode (UNIX only). The file *readme.txt* contains information that you should be aware of after the installation has completed and before you start to use Adabas - it can also be displayed at the end of the installation if selected by the user.

The installation guide consists of the following sections:

Section	Description
Adabas License Key	Information about the Adabas license key and how to use it
Installing and Setting Up Software AG Products under UNIX	Gives information about the installation package and the Software AG environment and describes the pre-installation steps which are common to all installations of Software AG products on a UNIX platform. It is relevant if you are installing a Software AG product for the first time.
UNIX	How to install Adabas on UNIX platforms
Windows	How to install Adabas on Windows platforms
OpenVMS	How to install Adabas on OpenVMS

Unless otherwise specified in our documentation, we encourage installing the latest service packs, patch bundles and fixes for the supported operating systems and products if these are recommended by the respective vendor. Please report defects resulting from 3rd party-supplied fixes, patches or service packs to the vendor directly.

Software AG tests its software against specific versions of operating systems and supported products (RDBMSs, JDKs, browsers, application servers, directory servers) and not specifically against all possible combinations of patches, fixes and hardware that might comprise that platform. Therefore, Software AG may not use the exact same versions of fixes, patches or service packs for operating systems and supported software products, when troubleshooting a customer issue.

1 Adabas License Key

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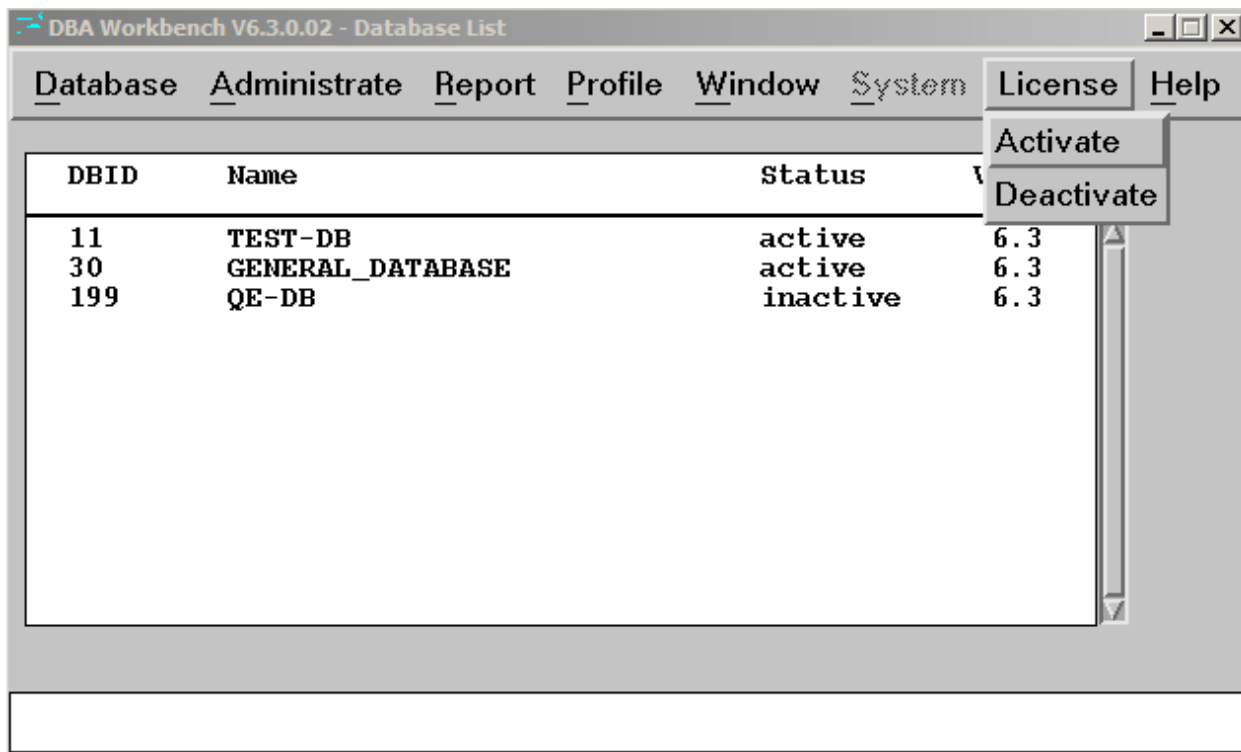
The Adabas software is protected by a license key. Every time the Adabas software starts, the license key is read and the validity of the license key is checked. On Unix and OpenVMS platforms, the license key is required also for the installation. On Windows platforms, Adabas can be used as a “Community Edition” without a license key. Therefore, the license key is not required for the Windows installation. If you start Adabas without a license key, the Adabas functionality is restricted.

License Key Activation

The license key file *ada_{vrs}.xml*, where *vrs* is the version and release level of the product, is either provided on a storage medium distributed with the Adabas kit, or transmitted via email.

During the UNIX installation, you must specify the location from which the license key file will be copied into the Software AG common area; if the license is valid only for a limited period of time (e.g. with a trial version), the expiration date is displayed during the installation. On Windows platforms, specifying the license key during the installation is optional.

You can also activate a license key using the DBA Workbench after you have installed Adabas. The DBA Workbench can also be used to replace a given license key by a new license key, for example if the old license key is only valid for a limited period of time.





Note: If you start ADANUC from the Windows command line without a license key activated, Adabas functionality is restricted, and in particular protection log usage is disabled. Therefore, you must specify the ADANUC parameter NOPLOG in this case.

The License Key File

The license key file is provided as an XML document. This document can be viewed, using a browsing tool or text editor. It contains text, which represents the licensing information and a digital signature. It displays SAG, legal notices, copyright information, etc., as well as the product license information.



Caution: If the license key file is modified in any way, the digital signature will become invalid and the license key check will fail. If the check fails, you will not be able to install or run the product. In the event of a check failure, please contact your Software AG Support representative.

2 Installing and Setting Up Software AG Products under UNIX

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General Information

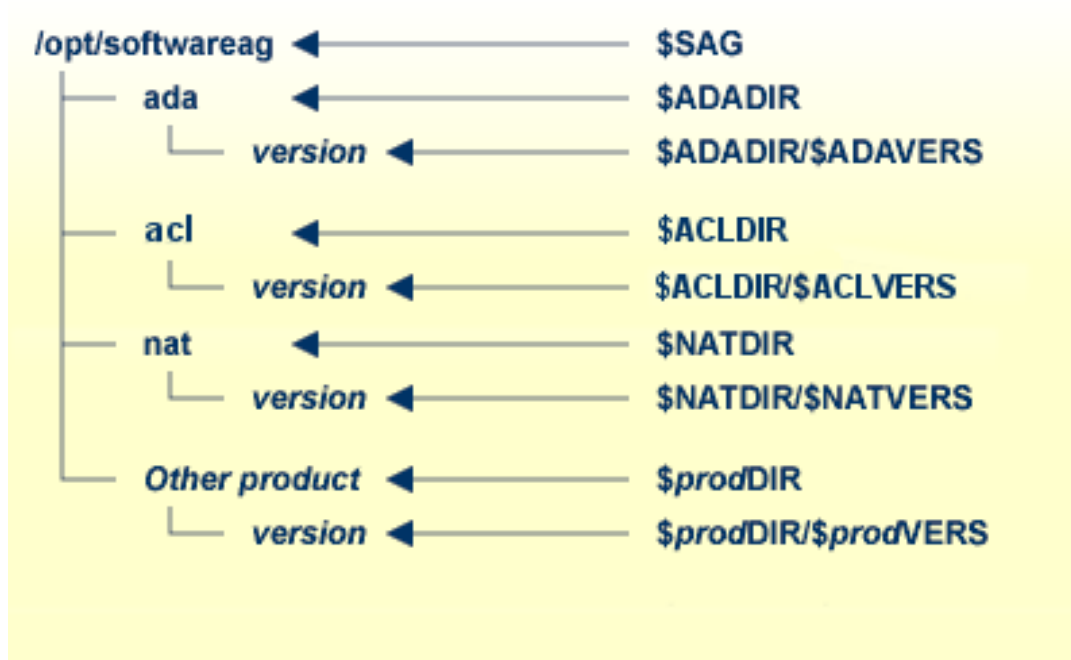
Installation Package

The installation package containing Software AG products is provided on a CD-ROM conforming to the ISO 9660 standard.

The CD-ROM contains a complete directory structure which clearly specifies product and platform.

Software AG Environment

The following figure shows the general directory structure generated during installation and the environment variables which reference the specified directories:



The environment variable `$SAG` defines the root directory for all Software AG products. It is recommended to define `SAG=/opt/softwareag`.



Note: If you want to use applications with S-bit, which call Adabas, it is *required* to define `SAG=/opt/softwareag`.

For each product, the variable `$prodDIR` is set to the path of the main directory of the product specified, where `prod` is a three-letter product code in upper-case letters. For example, all files for Natural, whose product code is NAT, are contained in the directory `$NATDIR`.

However, there are exceptions to this convention. For example, the product code for Predict is “PRD” but the environment variables use the prefix “DIC” instead.

The name of the main directory is usually the same as the product code in lower-case letters. For example, the main directory for Natural is named *nat*.

Version-independent parts of the product, such as examples or data, are stored in a subdirectory of the product main directory.

Version-dependent components of the product are kept in the version directory $\$prodDIR/\$prodVERS$. For example, the current version of Natural is stored in the directory $\$NATDIR/\$NATVERS$.

The environment variables *prodDIR* and *prodVERS* for all products specified during installation are defined in the file *sagenv.new*. The same applies for any other environment variables needed for the various products.

Multiple \$SAG Environments on the same Machine

If you want to install more than one \$SAG environment in parallel on the same machine, you should consider the following points:

- In this case, no \$SAG must be set to */opt/softwareag*.
- */opt/softwareag* must not be defined as a link to one of the \$SAG.
- It is not possible to use applications with S-bit, which call Adabas.
- The \$SAG environments are not completely independent, in particular, it is not possible to start Adabas databases with the same database ID from different \$SAG environments in parallel.

Before Installing your Software AG Product

It is recommended that you use */opt/softwareag* as one common root directory for all of your Software AG products. For Linux systems, this location is the registered name with LANANA.

The default search path for dependent libraries of some Software AG products is */opt/softwareag*. They are loaded from this location or using the environment variable $LD_LIBRARY_PATH$ ($SHLIB_PATH$ on HP-UX systems). If you install the product to a different location (for example, */usr/SAG* instead of */opt/softwareag*), you may create a symbolic link to your \$SAG directory to get a valid default search path:

```
su
cd /opt
ln -s $SAG softwareag
```

The following activities must be performed if you are installing a Software AG product for the first time, or if your environment is not yet set correctly due to any other causes.

This section covers the following topics:

- [Creating the Administrator's Account and Group](#)
- [Backing Up Your Current Product Version](#)
- [Logging in as User "sag"](#)

Creating the Administrator's Account and Group

You must create one administrator account and one group for all Software AG products when you install your first Software AG product.

1. Define an administrator account to which all of the Software AG products installed at your site belong. Since all environment definition files for the products are written in Bourne shell syntax, the Bourne (or Korn) shell is recommended as the login shell for the administrator account. This section assumes that the administrator account is called "sag".
2. Define a group to which the administrator belongs. This section assumes that this group is also called "sag".
3. Create a login directory for the user "sag".
4. Add the group "sag" in the system file */etc/group* and the user "sag" in the system file */etc/passwd*.



Note: To perform these steps, use an appropriate system administration tool.

Backing Up Your Current Product Version

When upgrading a product, it is strongly recommended that you back up your current product version.

Logging in as User "sag"

This description assumes that the user "sag" is the administrator for Software AG products. Log in as the user "sag" (it is not recommended to log in as "root").

Installing the Contents of the CD-ROM to Disk

Before performing the following steps, make sure that the administrator user and group have been created and defined.

► **To install the contents of the CD-ROM to disk**

- 1 Load the CD-ROM in the CD-ROM drive and mount it if this is not done automatically.

Command	Description
<code>su - root</code>	To mount a CD-ROM you may need to be root.
<code>mkdir /mount-dir</code>	You may need to create a mount directory for the CD-ROM.
<code>mount platform-specific_mount_options device-name /mount-dir</code>	Execute the mount command (see the table below for operating system-specific mount commands).
<code>exit</code>	Return to "sag" user.

Platform-specific mount command and options to mount the CD-ROM as ISO9660 or High-Sierra file system:

Platform	Mount Command
AIX	<code>/usr/sbin/mount -F cdfs -o cdcase device-name /mount-dir</code>
HP-UX	<code>/usr/sbin/mount -F cdfs -o cdcase device-name /mount-dir</code>
Solaris	<code>/usr/sbin/mount -F hsfs -o ro device-name /mount-dir</code>
Linux (IA-32)	<code>/bin/mount -t iso9660 -o ro device-name /mount-dir</code>

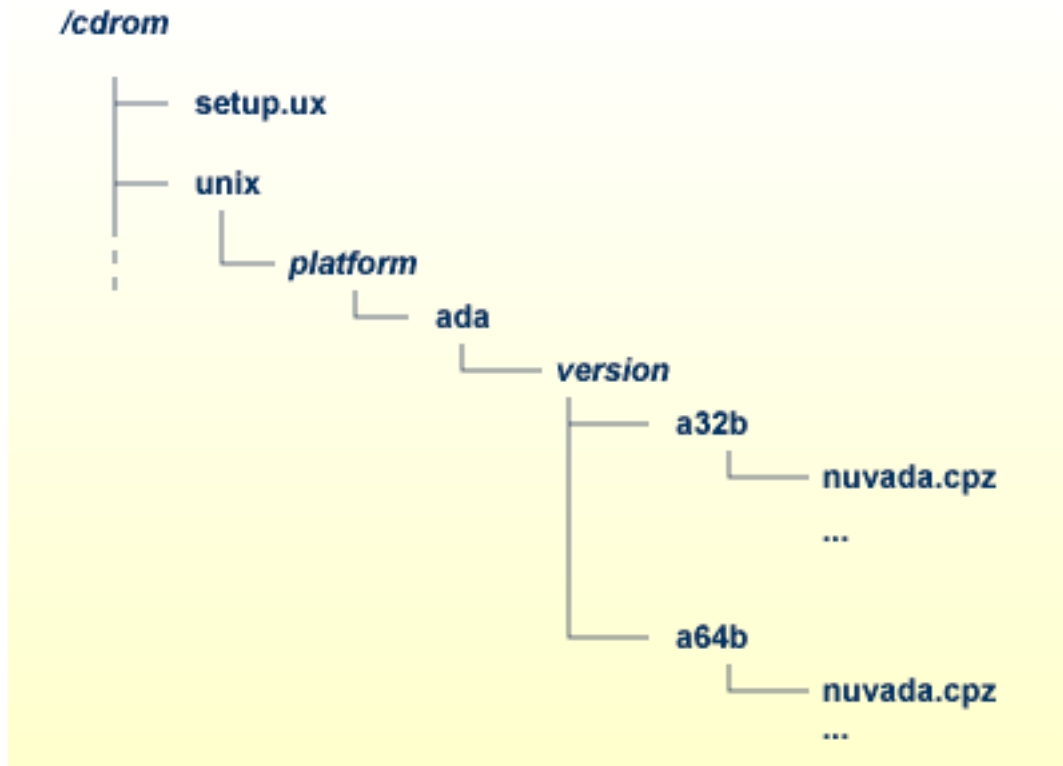


Note: On Solaris, the volume management daemon *vold* might be active. This daemon mounts the CD-ROM automatically.

Example for Linux:

```
/bin/mount -t iso9660 -o ro /dev/cdrom/mnt
```

- 2 Check the directory structure of the UNIX part of the CD-ROM. When you run an `ls(1)` command on the CD-ROM, you will see a structure like the following:



Note: Depending on the mount options used, the files will be all upper case or all lower case. If you mount the CD-ROM as a pure ISO 9660 Interchange Level I CD, you will also see a version number ;1 appended to all files. Please note this for the following steps and use the correct name format.

- 3 Please continue reading the step-by-step installation instructions for the Software AG product being installed.

3 Installing Adabas on UNIX

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This chapter provides you with the information necessary to install and to configure Adabas on UNIX platforms.

Installing Adabas

This section describes the prerequisites for installing Adabas and how to perform the Adabas installation on UNIX.

This section contains the following topics:

- [Before You Start the Installation](#)
- [Installing the Product](#)
- [Batch Installation](#)
- [Adabas Client Installation](#)

Before You Start the Installation

Before you start installing Adabas, make sure that you meet the prerequisites for your environment as described below.



Note: The RAM size given in the hardware prerequisites for each platform only applies if you do not intend to use LOBs. For LOB processing, you need at least four times the size of the LOB data concurrently accessed. However, it may happen also with this memory size that large LOBs cannot be processed because of memory fragmentation.

Hardware and Software Prerequisites for HP-UX (PA RISC)

For the installation of Adabas, the following hardware requirements apply:

Hardware Prerequisites for HP-UX	
Processor:	PA_RISC
RAM:	1GB
Disk space:	Installing the optimized version of Adabas requires approximately 85MB. An additional 180MB are required if you install the trace version of Adabas. These figures do not include disk space requirements for other databases that you will create.
CD-ROM drive:	A CD-ROM drive to install the software.

For the installation of Adabas, the following software requirements apply:

Software Prerequisites for HP-UX	
Operating System:	HP-UX 11i Version 3

We suggest that you install all of the manufacturer's recommended patches before you start the installation.

Hardware and Software Prerequisites for HP-UX (Itanium)

For the installation of Adabas, the following hardware requirements apply:

Hardware Prerequisites for HP-UX	
Processor:	Itanium
RAM:	1GB
Disk space:	Installing the optimized version of Adabas requires approximately 85MB. An additional 180MB are required if you install the trace version of Adabas. These figures do not include disk space requirements for other databases that you will create.
CD-ROM drive:	A CD-ROM drive to install the software.

For the installation of Adabas, the following software requirements apply:

Software Prerequisites for HP-UX	
Operating System:	HP-UX 11i Version 3.

We suggest that you install all of the manufacturer's recommended patches before you start the installation.

Hardware and Software Prerequisites for IBM AIX

For the installation of Adabas, the following hardware requirements apply:

Hardware Prerequisites for IBM AIX	
Architecture:	IBM e-Server pSeries
RAM:	1GB
Disk space:	Installing the optimized version of Adabas requires approximately 45MB. An additional 60MB are required if you install the trace version of Adabas. These figures do not include disk space requirements for other databases that you will create.
CD-ROM drive:	A CD-ROM drive to install the software.

For the installation of Adabas, the following software requirements apply:

Software Prerequisites for IBM AIX	
Operating System:	IBM AIX Version 6.1 (64 bit) with at least system technology level 6100-04-01 IBM AIX Version 7.1

We suggest that you install all of the manufacturer's recommended patches before you start the installation.

Hardware and Software Prerequisites for Solaris

For the installation of Adabas, the following hardware requirements apply:

Hardware Prerequisites for Solaris	
Processor:	UltraSPARC
RAM:	1GB
Disk space:	Installing the optimized version of Adabas requires approximately 45MB. An additional 60MB are required if you install the trace version of Adabas. These figures do not include disk space requirements for other databases that you will create.
CD-ROM drive:	A CD-ROM drive to install the software.

For the installation of Adabas, the following software requirements apply:

Software Prerequisites for Solaris	
Operating System:	SUN Solaris Version 10 (64 bit) If you use the ufs file system, you must install the Solaris 10 patch 139483-03. Problems with starting the workbench may be caused if the following Solaris 10 patch is missing: 119059-45.

We suggest that you install all of the manufacturer's recommended patches before you start the installation.

Hardware and Software Prerequisites for Linux

For the installation of Adabas, the following hardware requirements apply:

Hardware Prerequisites for Linux	
Processor:	x86 or x86-64
RAM:	1GB
Disk space:	Installing the optimized version of Adabas requires approximately 45MB. An additional 60MB are required if you install the trace version of Adabas. These figures do not include disk space requirements for other databases that you will create.
CD-ROM drive:	A CD-ROM drive to install the software.

For the installation of Adabas, the following software requirements apply:

Software Prerequisites for Linux	
Operating System:	<p>SUSE Linux Enterprise Server 11 (x86, x86-64).</p> <p>Red Hat Enterprise Linux 5 AS (x86, x86-64).</p> <p>Red Hat Enterprise Linux 6 AS (x86-64).</p> <p>1. Please ensure that your host name is correctly configured. Issue the following command</p> <pre>hostname</pre> <p>or</p> <pre>uname -u</pre> <p>If these commands return a fully-qualified domain name (FQDN), everything is OK. If, however, they return only the node name (other than localhost), you should look in the file <i>/etc/hosts</i> and ensure that the node name is not an alias for localhost. You may have to reconfigure your network and set an FQDN as host name.</p> <p>2. The libstdc++ package must be installed.</p>



Notes:

1. It is recommended to use the file system ext3 on Linux.
2. Adabas Workbench requires OpenMotif Version 2.2. SUSE Linux Enterprise Server 11 delivers OpenMotif Version 2.3, which is not downwardly compatible with OpenMotif Version 2.2. A workaround is to use a software channel from Novell. Novell provides an "Unsupported Extras Channel" in the online repositories. Registered customers can install OpenMotif Version 2.2 from this channel. Software AG will not provide support for OpenMotif Version 2.2 or for Adabas Workbench problems that are caused by the OpenMotif version.

Hardware and Software Prerequisites for IBM zLinux

For the installation of Adabas, the following hardware requirements apply:

Hardware Prerequisites for IBM zLinux	
Architecture:	IBM System z, z9 and z10 (but not z890, z900, z990)
RAM:	1GB
Disk space:	Installing the optimized version of Adabas requires approximately 45MB. An additional 60MB are required if you install the trace version of Adabas. These figures do not include disk space requirements for other databases that you will create.
CD-ROM drive:	A CD-ROM drive to install the software.

For the installation of Adabas, the following software requirements apply:

Software Prerequisites for IBM zLinux	
Operating System:	<p>SUSE Linux Enterprise Server 11.</p> <p>Red Hat Enterprise Linux 5 AS.</p> <p>Red Hat Enterprise Linux 6 AS.</p> <p>1. Please ensure that your host name is correctly configured. Issue the following command</p> <pre>hostname</pre> <p>or</p> <pre>uname -u</pre> <p>If these commands return a fully-qualified domain name (FQDN), everything is OK. If, however, they return only the node name (other than localhost), you should look in the file <i>/etc/hosts</i> and ensure that the node name is not an alias for localhost. You may have to reconfigure your network and set an FQDN as host name.</p> <p>2. If you want to perform a graphical installation, you will need the following additional 32-bit packages (the version or release number may vary):</p> <ul style="list-style-type: none"> ■ xorg-x11-libs-6.8.1-23.EL.s390.rpm ■ xorg-x11-Mesa-libGL-6.8.1-23.EL.s390.rpm ■ zlib-1.2.1.2-1.s390.rpm ■ expat-1.95.7-4.s390.rpm ■ fontconfig-2.2.3-7.s390.rpm ■ freetype-2.1.9-1.s390.rpm <p>Otherwise start the installation as described below and add <code>-nw</code> as an option to <code>setup .ux</code>.</p>

**Notes:**

1. It is recommended to use the file system ext3 on Linux.
2. Adabas Workbench requires OpenMotif Version 2.2. SUSE Linux Enterprise Server 11 delivers OpenMotif Version 2.3, which is not downwardly compatible with OpenMotif Version 2.2. A workaround is to use a software channel from Novell. Novell provides an "Unsupported Extras Channel" in the online repositories. Registered customers can install OpenMotif Version 2.2 from this channel. Software AG will not provide support for OpenMotif Version 2.2 or for Adabas Workbench problems that are caused by the OpenMotif version.

Increasing System V Resources (does not apply to AIX)

Adabas requires increased System V resources. You can check your current settings by using the command `showipc -s`. In the following, the resources required for Adabas are described. Note that there are also other processes running on your system that require IPC resources. Therefore, you must add the IPC resources required by the other processes to parameters that describe a systemwide maximum number or size of resources. For parameters that describe the maximum size of a resource, the value must, of course, be large enough for the other processes.



Note: Instead of specifying kernel parameters, on Solaris 10 it is possible to change these parameters dynamically, for example for a non-global Solaris 10 zone. Please refer to the Solaris 10 documentation for further details.

Check, and if necessary, change the values of the following parameters:

AIO_MAX

The maximum number of outstanding I/O operations. A minimum of 5000 is recommended.

AIO_LISTIO_MAX

The maximum number of AIO ops that can be specified in a `lio_listio` call. In earlier versions of Adabas (before V3.3), PIO is used. The value for this parameter should be set to 256 or 128. This parameter applies to HP-UX only.



Note: The value of the parameter `max_thread_proc` should be set to `aio_listio_max` plus a minimum of 128 plus the value specified for the keyword `total` from the ADANUC parameter `READ_PARALLEL_LIMITS`.

SHMMAX (max-shm-memory on Solaris 10)

The maximum size (in bytes) of a shared memory segment. The size of SHMMAX limits the size of the Adabas buffer pool (Adabas LBP nucleus parameter) and the number of attached buffers (Adabas LAB nucleus parameter). The required size is the maximum value of (750 KB + LAB + LBP) of all databases.

SHMMNI (max-shm-ids on Solaris 10)

The maximum number of shared memory segments, systemwide. Each Adabas database uses 4 shared memory segments.

SHMSEG

The maximum number of shared memory segments per process. Adabas requires 4 segments.



Notes:

1. This parameter does not exist on all UNIX platforms.
2. This parameter has become obsolete for Solaris 10.

MSGMNB (max-msg-qbytes on Solaris 10)

The maximum size (in bytes) of a given queue (i.e. the sum of all messages in that queue). The value should be $32 * \text{the maximum value of NCL of all databases}$. A value of 65535 bytes is recommended if you use NET-WORK.

MSGMAX

The size (in bytes) of the largest message that can be sent. A value of 32 is required. A value of 65535 bytes is recommended if you use NET-WORK.



Note: This parameter has become obsolete for Solaris 10.

MSGMNI (max-msg-ids on Solaris 10)

The maximum number of message queues, systemwide. Each Adabas client requires one message queue per accessed database ID. The required value is given by the sum of $(2 + \text{NCL} + \text{max.}(2, \text{NT}/3))$ for all databases.

MSGTQL (max-msg-messages on Solaris 10)

The maximum size of all messages, systemwide. This parameter limits the combined number of concurrent clients of all database. The value should be the sum of $(32 * \text{NCL})$ for all databases. A value of 65535 bytes is recommended if you use NET-WORK.



Note: On some platforms, this parameter is called MSGMNM, or it may not be available.

SEMMNI (max-sem-ids on Solaris 10)

The maximum number of semaphore sets, systemwide. Each Adabas database requires 2 semaphore sets.

SEMMSL (max-sem-nsems on Solaris 10)

The maximum number of semaphores per semaphore set. This parameter limits the number of users per database (NCL parameter). This parameter should be at least as large as the largest NCL value of all databases + 1.

SEMMNS


The maximum number of semaphores, systemwide. This parameter limits the combined number of concurrent clients of all databases. Each database requires $2 + \text{NCL}$.



Note: This parameter has become obsolete for Solaris 10.


SEMVMX

The maximum value of any semaphore. A value of 32767 is recommended.

 **Note:** This parameter has become obsolete for Solaris 10.

SEMMNU

The maximum number of undo structures, systemwide. The value is given by the sum of (NCL +2) for all databases.

 **Note:** This parameter has become obsolete for Solaris 10.

Enabling Asynchronous I/O (AIX)

Adabas uses the AIX asynchronous I/O facility, which by default is not enabled in the AIX kernel. Perform the following steps as superuser to enable asynchronous I/O:

▶ To enable asynchronous I/O (5.3)

- 1 Start the AIX system administration command `smit`.
- 2 Go to Devices -> Asynchronous I/O -> Change/Show Characteristics of Asynchronous I/O. Accept the values provided.
- 3 Go to Devices -> Asynchronous I/O -> Configure Defined Asynchronous I/O and execute it. If this command executes successfully, the following should be displayed:

```
aio0 available
```

▶ To enable asynchronous I/O (6.1)

- The I/O facility is enabled by default. Make sure it is available by running the command `ioo -a | grep active`. If the command runs successfully, the system returns this message:

```
aio_active = 1 posix_aio_active = 1
```

Changing the Thread Scheduling Model (AIX)

The performance of Adabas can be improved by making some changes to the thread scheduling model. By default, AIX uses 8:1 as the ratio of user threads to kernel threads. There are two ways in which you can change this ratio:

- By setting the environment variable `AIXTHREAD_MNRATIO`. You can choose any ratio.

Example

```
AIXTHREAD_MNRATIO=1:1
export AIXTHREAD_MNRATIO
```

- By setting the environment variable AIXTHREAD_SCOPE.

Example

```
AIXTHREAD_SCOPE=S
export AIXTHREAD_SCOPE
```

This gives you a 1:1 ratio.

Example

```
AIXTHREAD_SCOPE=P
export AIXTHREAD_SCOPE
```

This gives you an M:N ratio.

AIXTHREAD_SCOPE=S is the recommended setting.

Adding User Account for Administration of Software AG Products

In this section the following is assumed:

- The user account for the administrator of Software AG products is called "sag".
- The group to which the administrator and all users of Software AG products are assigned is called "sag".
- The home directory for the user "sag" is */opt/softwareag*.
- The root directory for Software AG products is */opt/softwareag*.



Caution: If you use a different administrator user and/or group name, *showipc*, which is also used by the Adabas nucleus, only works after some environment variables have been set. For further information, please refer to *ADANUC* in *Utilities* and *showipc* in *Administration*.

- ▶ To perform these steps, use an appropriate system administration tool (e.g. *smit*).

1 Create the administrator's account and group

1. Create one administrator's account and one group for all Software AG products when you install your first Software AG product.

2. Define an administrator account to which all of the Software AG products installed at your site belong. Since all environment definition files for the products are written for the Bourne shell, this shell is required as the login shell for the administrator account.
3. Define a group to which the administrator and all users of Software AG products belong.
4. Create a login directory for the user "sag".

Example:

It is assumed that user and group accounts are defined in the respective files in */etc*.

The following is a possible entry in the system file */etc/group*:

```
sag:*:21:sag
```

The following is a possible entry in the system file */etc/passwd*:

```
sag::100:21:SAG - Product Administrator:/opt/softwareag:/bin/sh
```

2 Define the SAG environment variable

The environment variable "SAG" defines the default location under which the directory trees of installed Software AG products are located. In the Bourne shell you can define it like this:

```
SAG=/opt/softwareag ; export SAG
```

The Adabas software will be installed in, and under the subdirectory *ada* of the location specified by \$SAG.

Installing the Product

Once you have set up your installation environment as described above, you can proceed with the installation itself, which will only take a few minutes.

The Adabas installation offers the three installations "Typical", "Minimal", and "Customized". "Typical" performs a complete installation (including the examples and the DBA Workbench). If you select "Minimal", Adabas will be installed with just the nucleus, the utilities and the Adabas client package (ACL). The "Customized" installation allows you to select the components you wish to install. Customized scenarios include just the nucleus and the Adabas client package (ACL) only (the absolute minimum configuration), the nucleus, the Adabas client package (ACL) and the DBA Workbench, or just the nucleus alone (when installing a new patch level). If you choose not to install one or more units during the installation procedure, you can add them at a later stage by re-running the Adabas installation procedure. Note that the installation procedure does not check which units are already installed.



Note: The Adabas client package (ACL) is a subproduct that is also installed with Entire Net-Work client. It contains the Adabas interface modules that are required to access Adabas

from applications. ACL has its own versioning, because new versions may be delivered by Adabas and by Entire Net-Work, and therefore using the versioning of Adabas or Entire Net-Work is not appropriate. For further information about the Adabas interface modules, see *Linking Application Programs* in *Command Reference*.

The installation procedure examines the environment variable `DISPLAY` to determine whether to run in graphical or interactive text-oriented mode. If the environment variable `DISPLAY` points to an active X-Server, the graphical installation mode starts, otherwise the interactive text-oriented installation mode starts. There is also a batch mode available (see [Batch Installation](#) for further information).



Note: If you run the installation procedure in character mode, at each command prompt, you must type in the exact wording (for example: accept for "accept", not just y or the ENTER key).

▶ To set the `DISPLAY` environment variable

- Enter the following shell commands (this example is for Bourne shell):

```
DISPLAY="<machine_name>:0"  
export DISPLAY
```

replace "*<machine_name>*" by the name of your terminal device.

Note that the graphical mode can only start if there is an X-Server currently active.

▶ To install the Adabas product

- 1 To perform this step, you must be the user "sag" with "su" or "sudo" privileges.

You need to have superuser permissions for some parts of the installation procedure. You can choose between entering the password of the root user and entering your own password if the third party tool "sudo" is installed and configured.

Mount the installation CD (in the following it is assumed that the mountpoint is "/cdrom").

Start the installation procedure from a writable working directory.

Enter the command:

```
/bin/sh /cdrom/setup.ux
```

The setup program is started and guides you through the installation.

If you want to install the trace version of the product, you have to use a parameterized call of setup.ux. In this case, enter the command:

```
/bin/sh /cdrom/setup.ux ada version
```

where version is the Adabas trace version number, e.g. t63003 (t stands for trace, and 63003 is the version and service pack number).

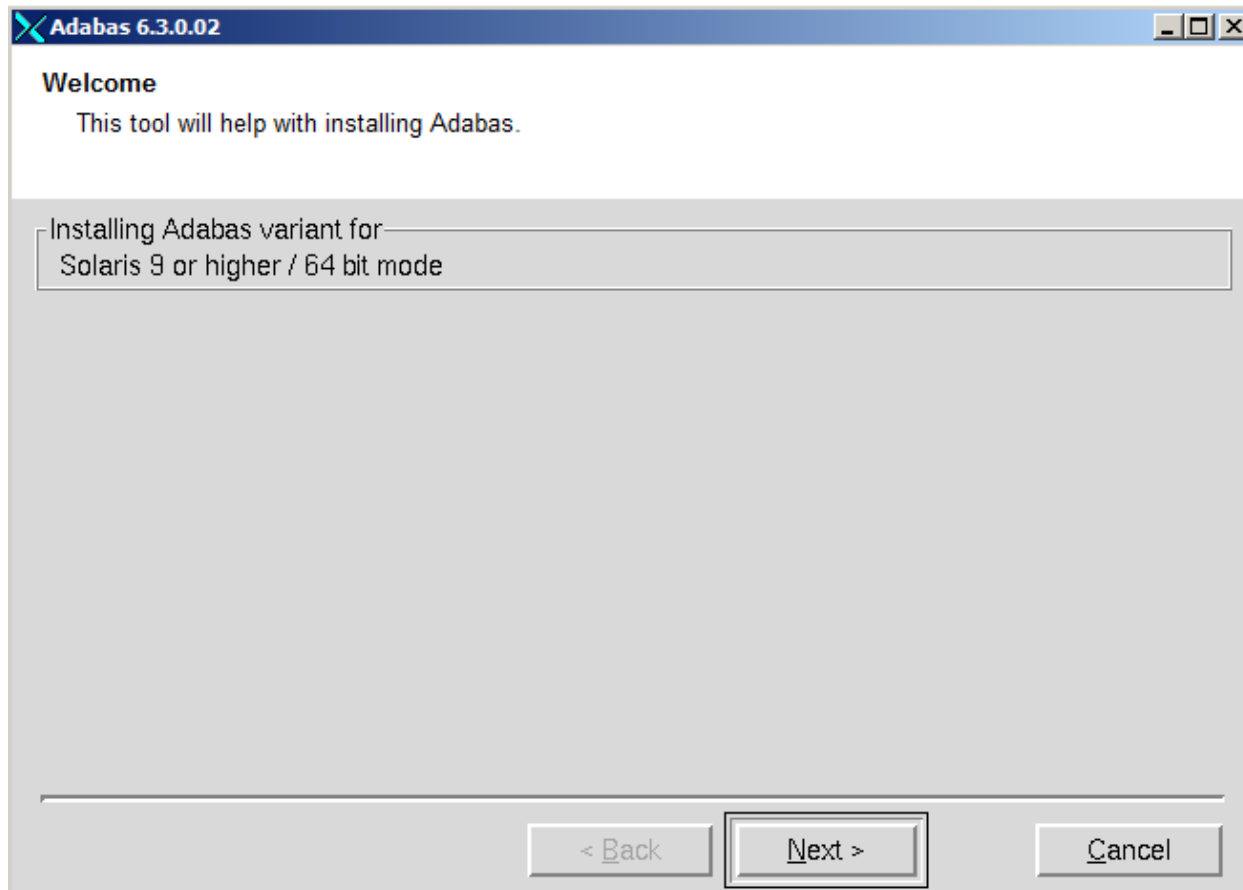


Note: The Adabas client package installation is a subinstallation of Adabas. In the case of a batch installation, a prerequisite for a trace installation is that all trace subinstallations have to be installed before the main product can be installed.

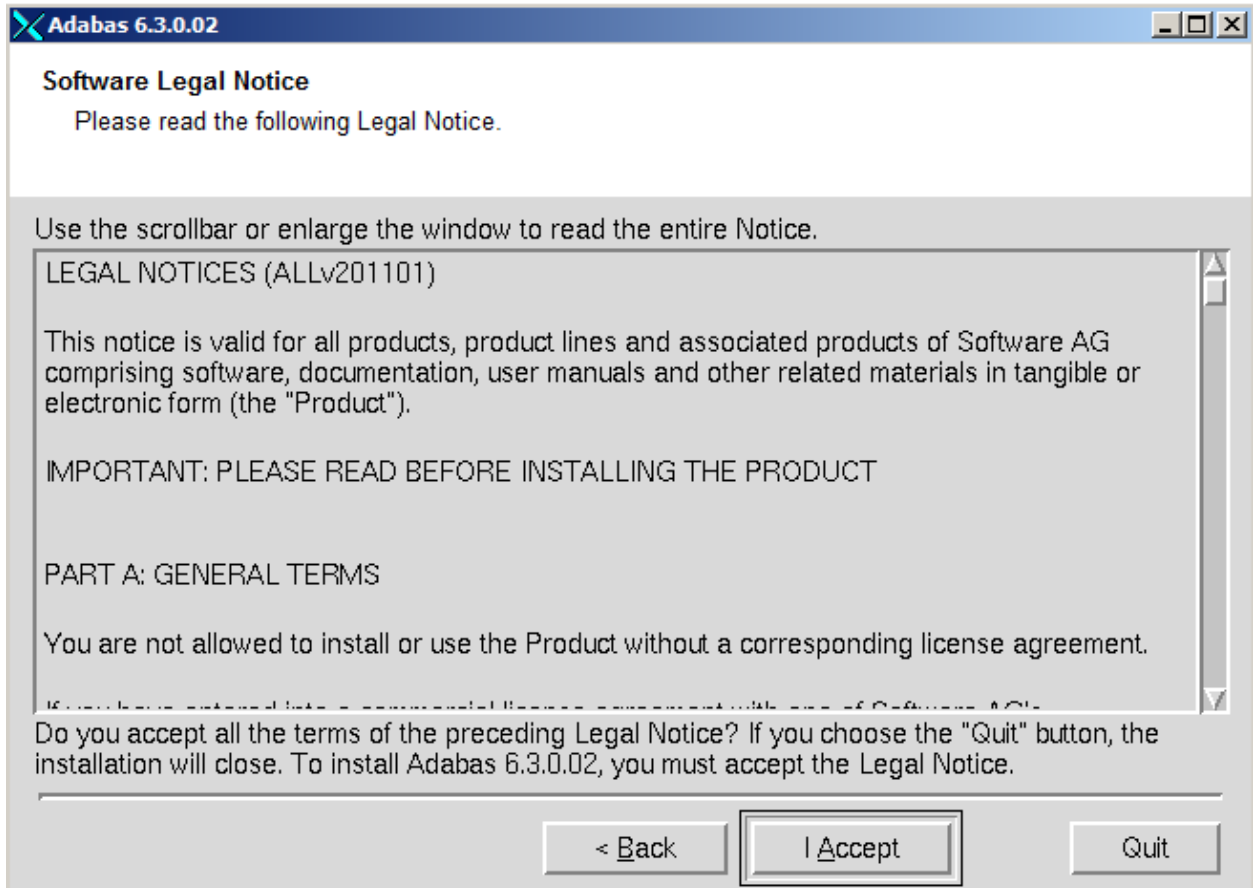
Example: Installing Adabas Trace Version

1. Installing ACL trace version: `/bin/sh/cdrom/setup.ux acl tversion`
 2. Installing ADA trace version: `/bin/sh/cdrom/setup.ux ada tversion`
- 2 The file *sagenv.new* is created at the end of the installation. This file contains the settings for all required environment variables. Insert these settings into your profile (for example, ".profile"). Software AG strongly recommends that you save an old *sagenv.new* file before you start the installation or that you select another name for the file.

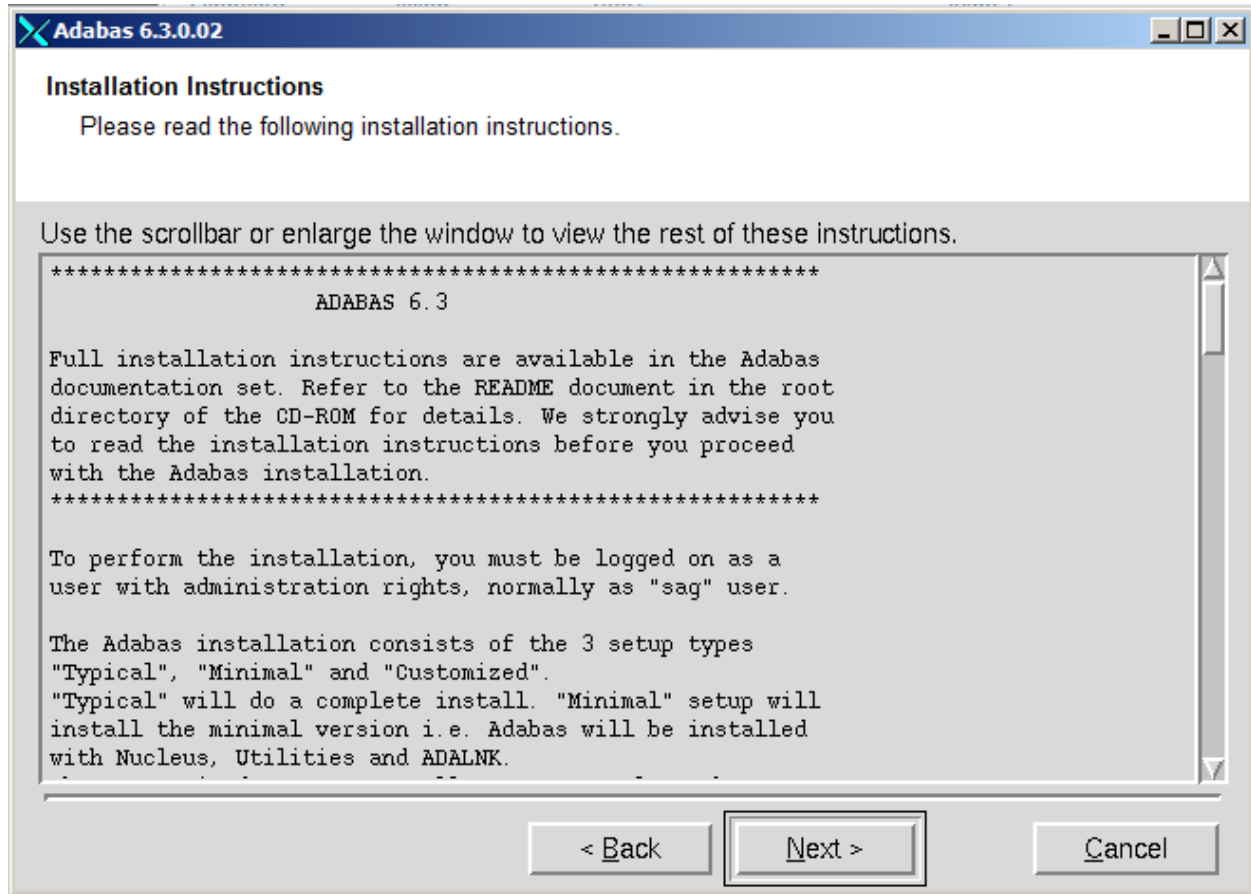
The following screen shots show an installation made on a Solaris machine in the graphical mode - please note that the exact number of the service pack may differ from the actual service pack that you are installing



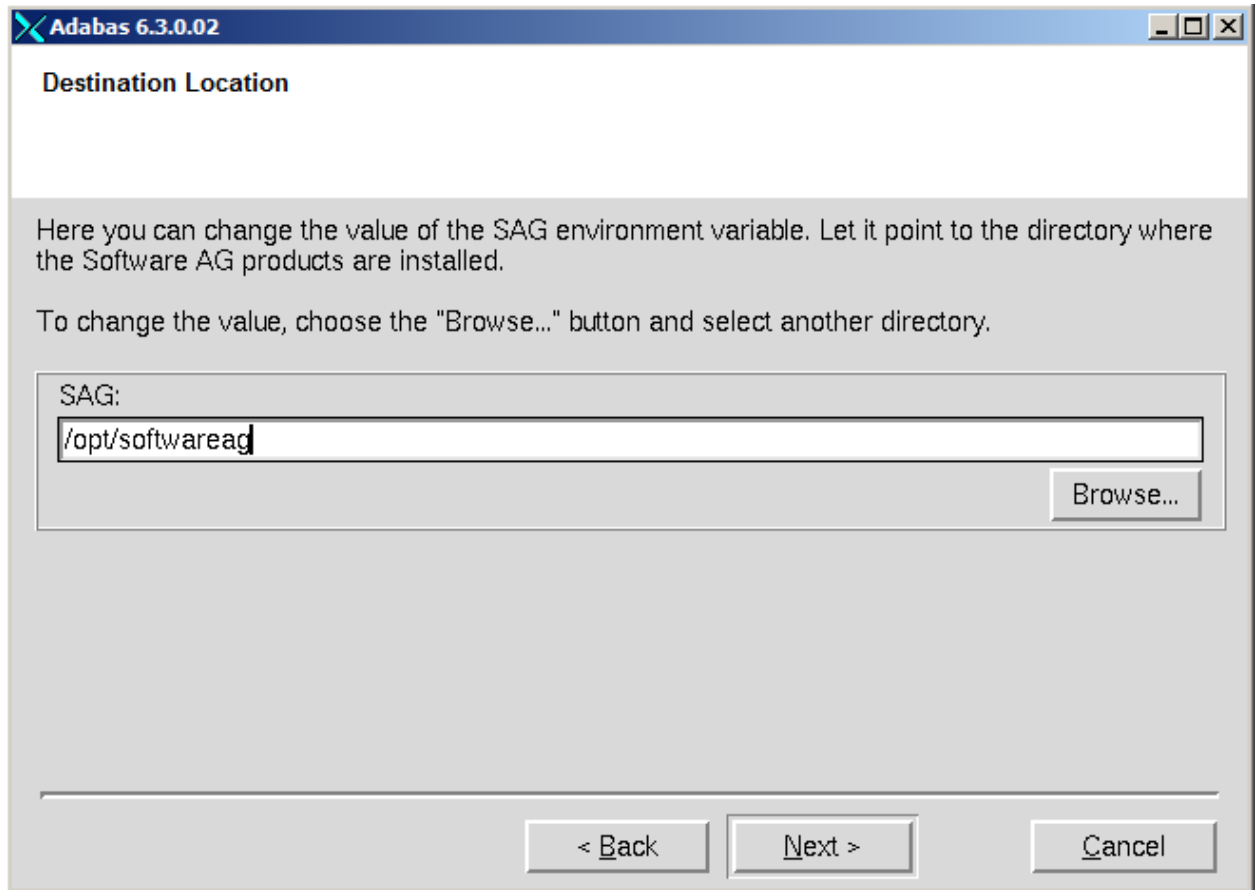
Choose **Next** to continue.



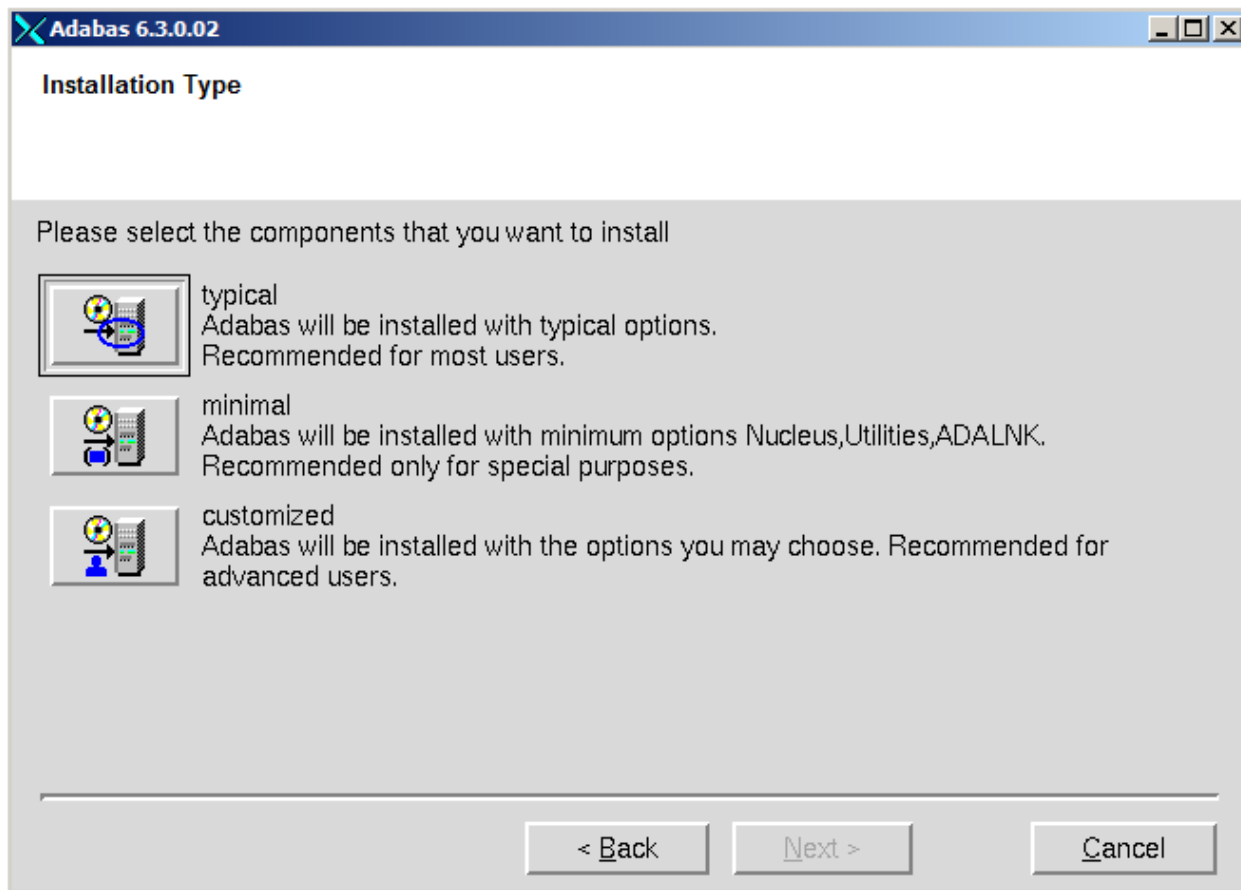
The license agreement is displayed. Choose **I Accept** to continue with the installation.



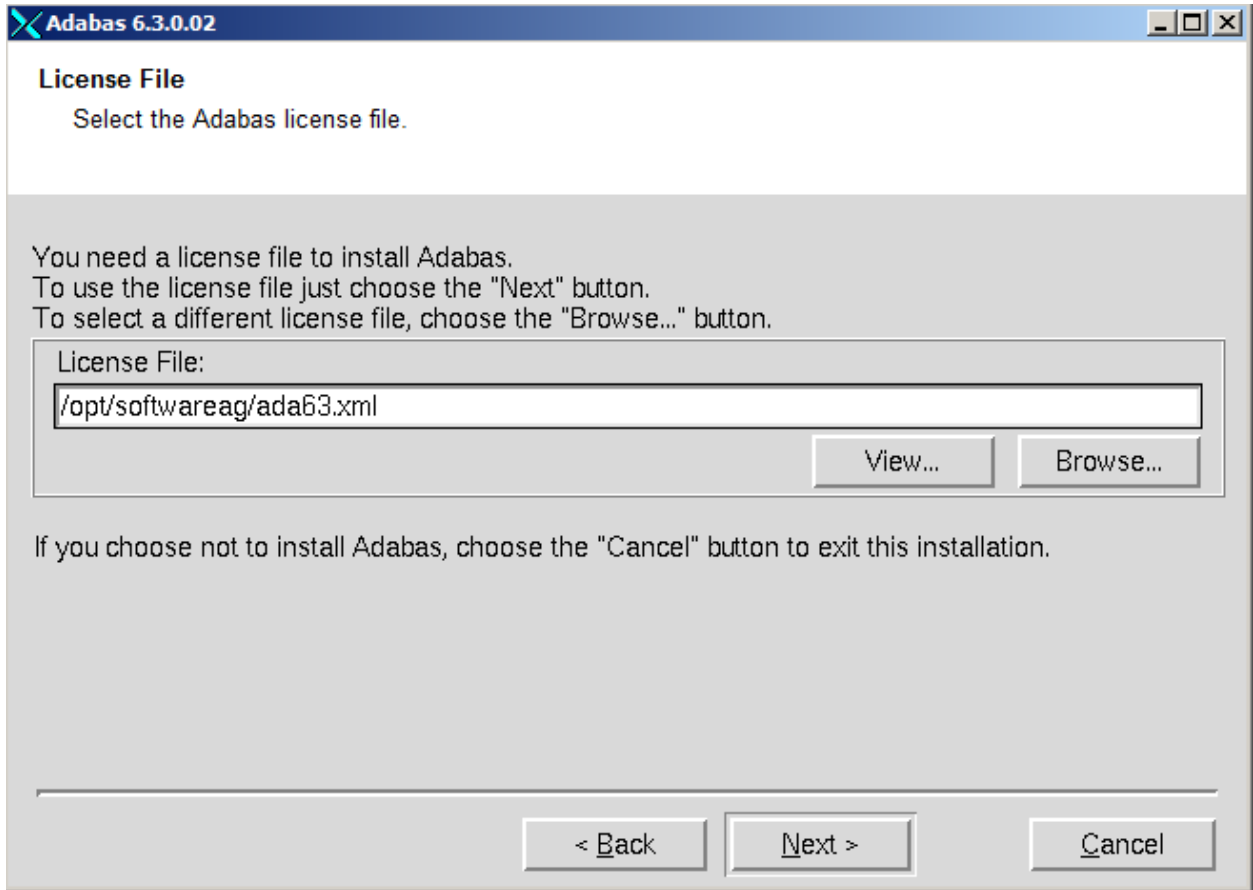
The installation instructions are displayed. Once you have read them, choose **Next** to continue.



The **Destination Location** dialog box is displayed. Enter the value of the directory of the \$SAG environment variable, or browse to a SAG directory if you already have one. If the destination you specify does not exist, you will be asked if you want to create it. Choose **Next** to continue.



Choose the type of installation that you want to make.

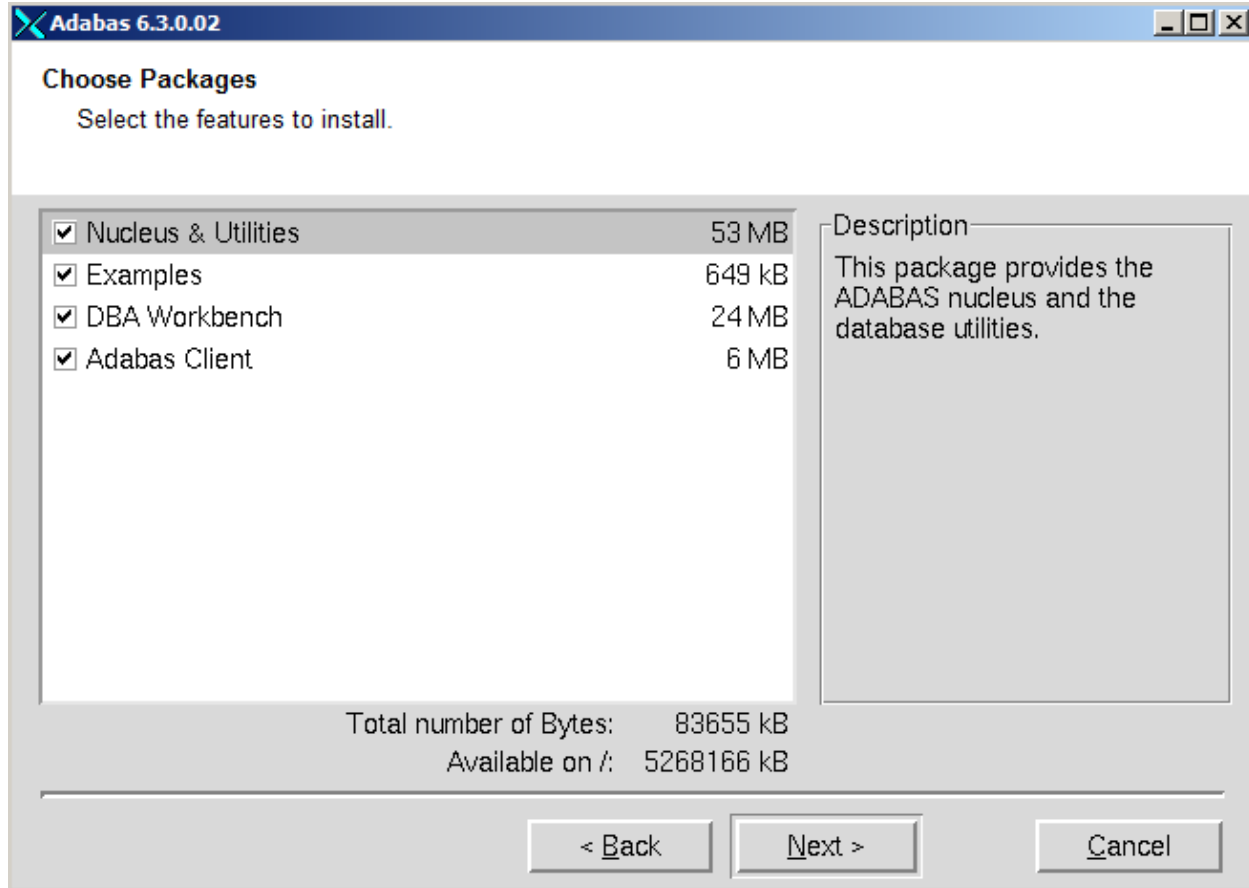


Enter the path where your license file can be found, then choose **Next** to continue.


 **Notes:**

1. You can display the contents of the specified license file by choosing **View**.
2. If you want to change the license file later on, you should do this using the DBA Workbench: choose License -> Activate from the menu bar, then either browse/navigate to the location of the license file using the Directories window, or enter the complete path name and name of the license file in the text box.
3. If you have a license file that is only valid for a limited period of time, a warning will be displayed.

If you choose customized, the following installation options are available:




Option	Meaning
Adabas Client	<p>Installs everything that is required in order to build an application, including shared libraries and header files. If only Adabas Client is selected, you can only access remote databases if you have Entire Net-Work installed.</p> <p>Note: If you install the trace version, Adabas Client is not installed to \$SAG/common/lib, which means that \$ADADIR/\$ADAVERS/shared must be included in the LD_LIBRARY_PATH if you want to use the trace version of Adabas Client.</p>
Nucleus & Utilities	<p>Implies the Adabas Client option, in addition all utilities (except the Workbench) and the nucleus can be executed after installation. Local Adabas calls are possible.</p>
DBA Workbench	<p>Implies both the Adabas Client and the Nucleus & Utilities option, in addition the Workbench is installed.</p>
Examples	<p>Only installs all example programs and the files required to load the demo data.</p>

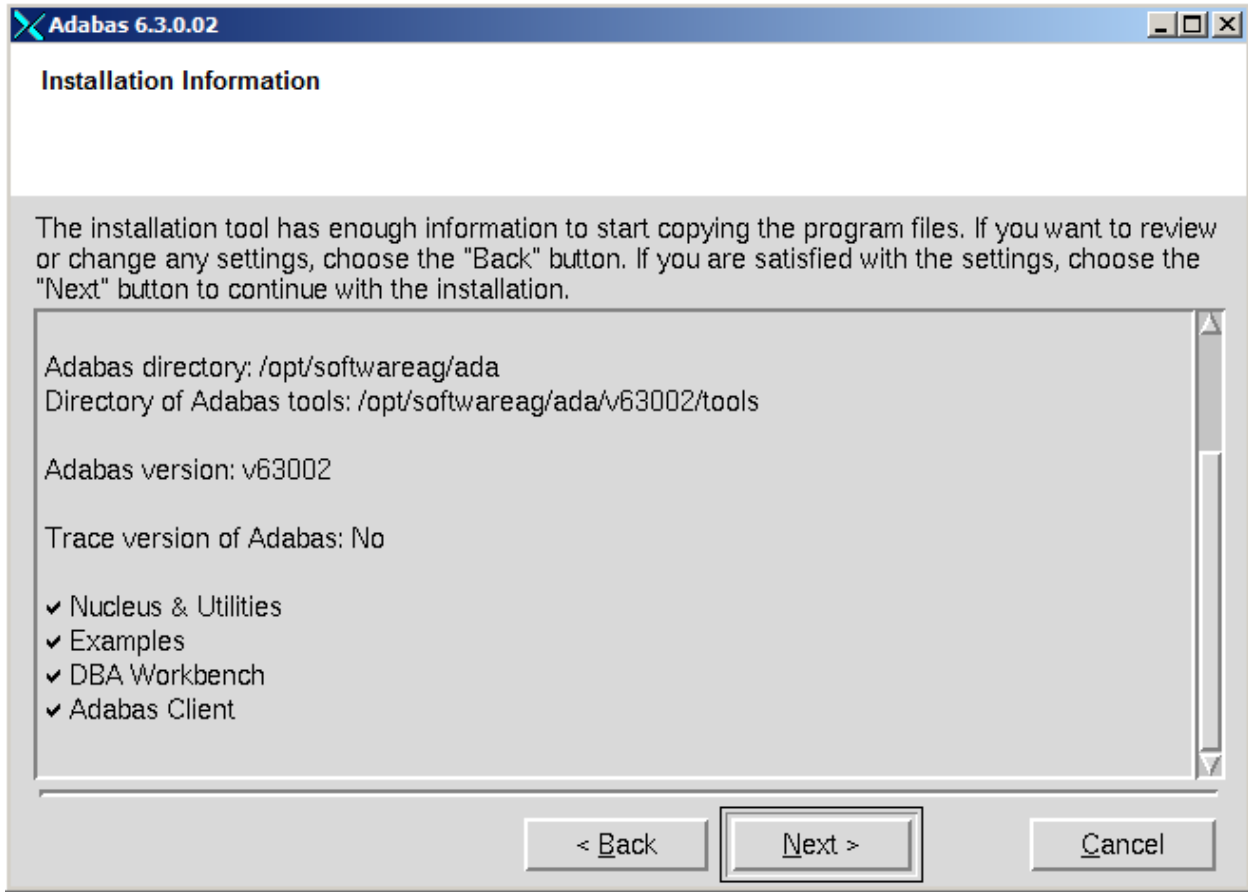
 **Note:** This screen is not displayed if you are making the installation as 'root'.

From the drop-down list box select one of the options shown in the following table.

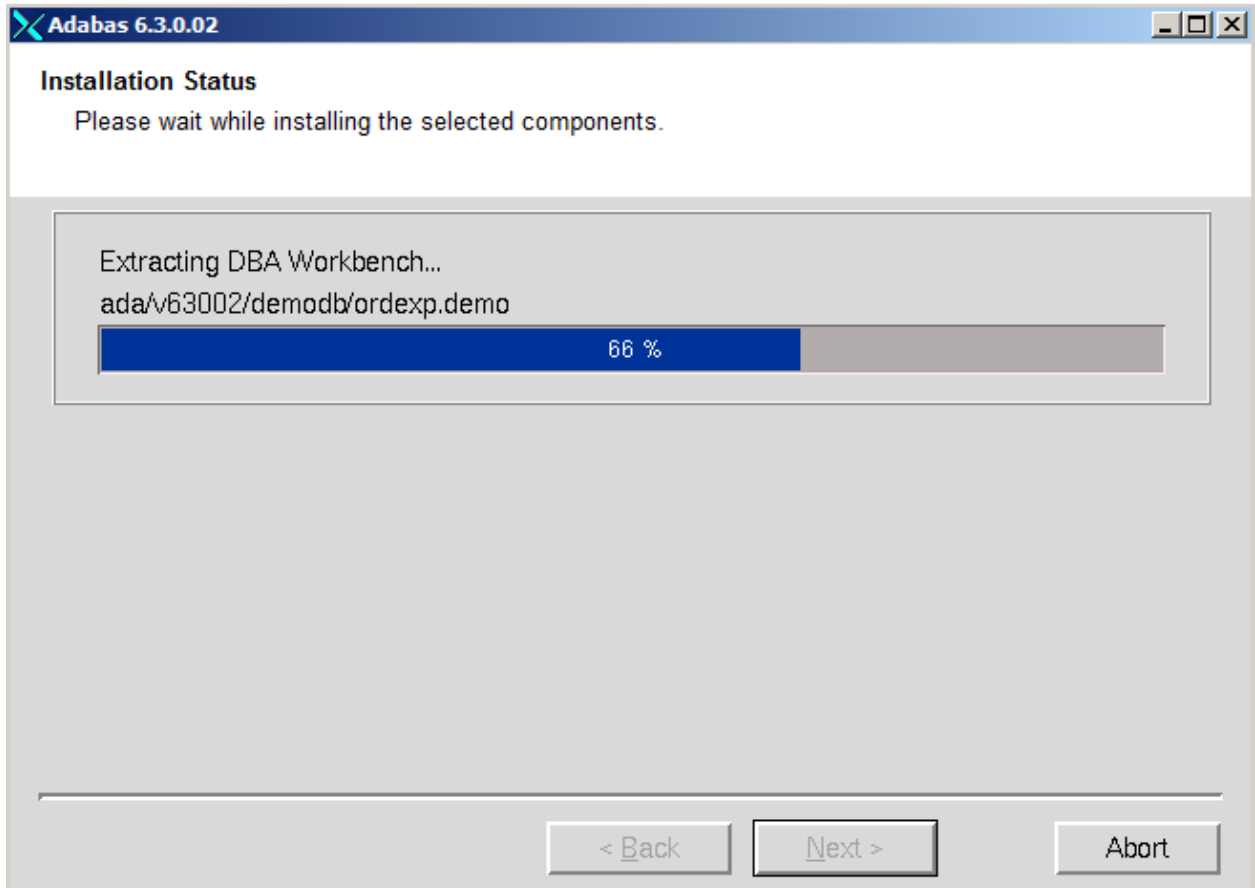
Option	Meaning
none	Password entry is disabled, requested privileged actions that are otherwise performed during the installation are written to a script <i>instpriv.bsh</i> , that can be executed later with sudo or root authentication.
sudo	Sudo password must be entered.
root	Root password must be entered.

Select the *root* command or the *sudo* command to perform privileged actions, then enter either the root password or your own sudo password, where appropriate. Choose **Next** to continue.

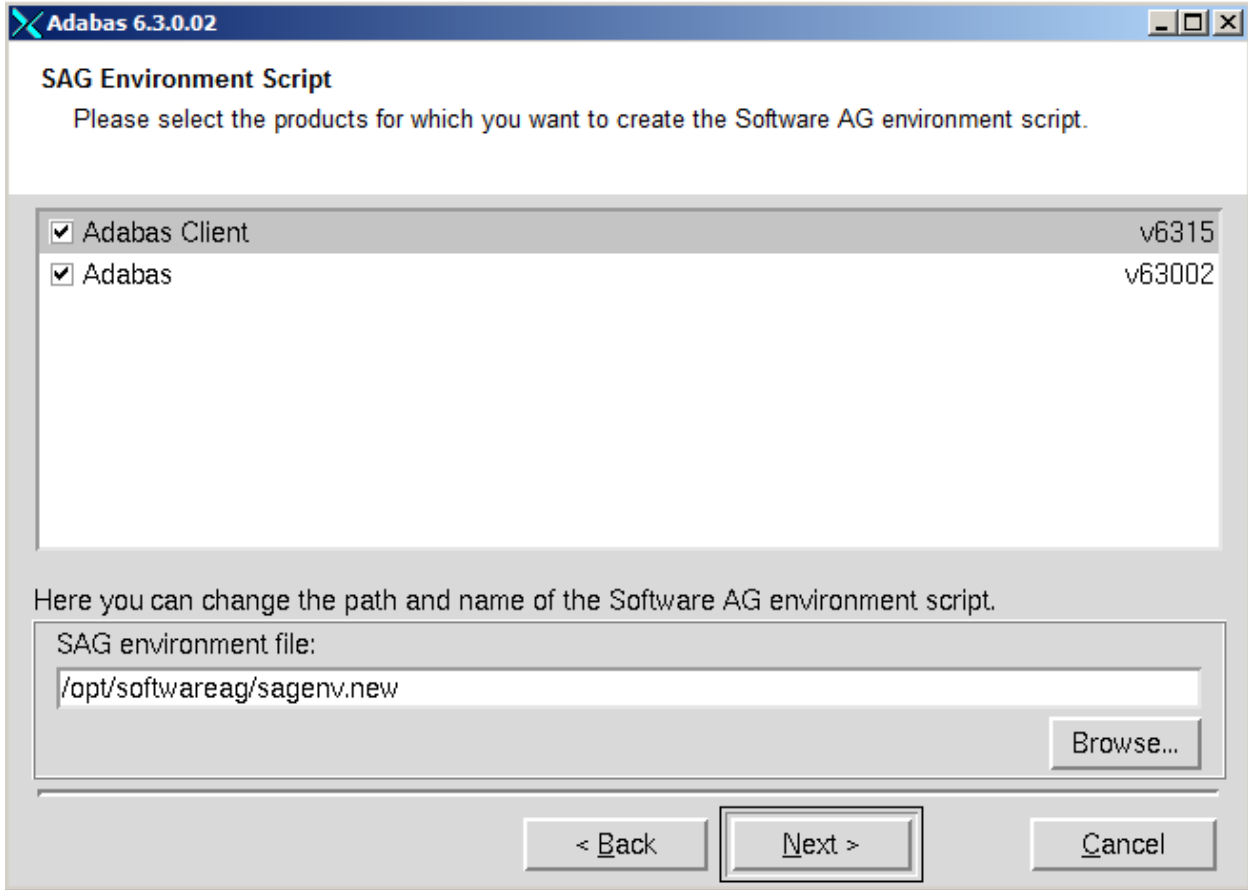
 **Note:** Root permission is required for the following reasons: for changing the owner to root and setting the s-bit for showipc/showkrn, and for performing the installation in the recommended default directory `"/opt/softwareag"` (if you are not the owner of this directory).



The settings you have selected are now displayed. Choose **Back** to change the settings, or choose **Next** to start extracting the files.



Once the files have been extracted, choose **Next** to start copying them.

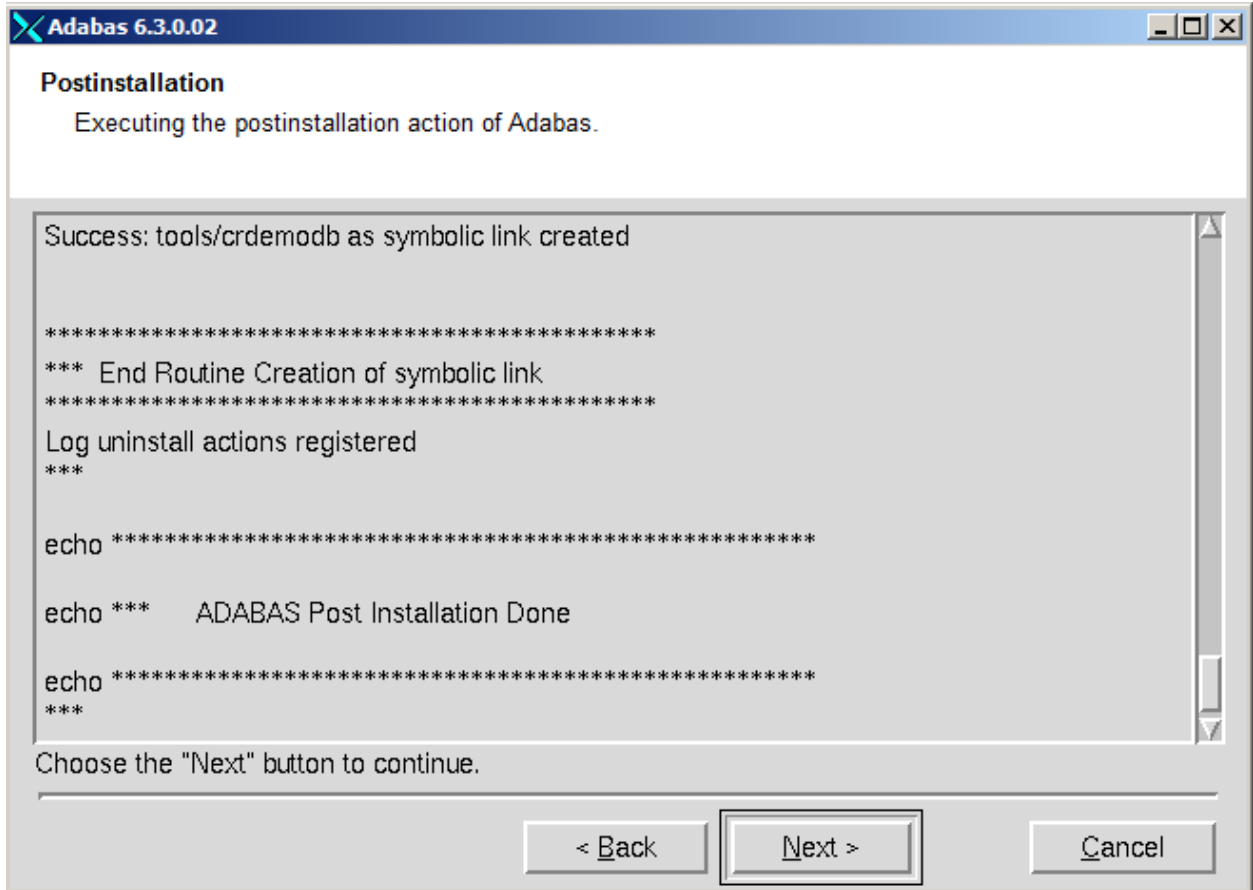


Select the products for which you want to create the environment file *sagenv.new*.

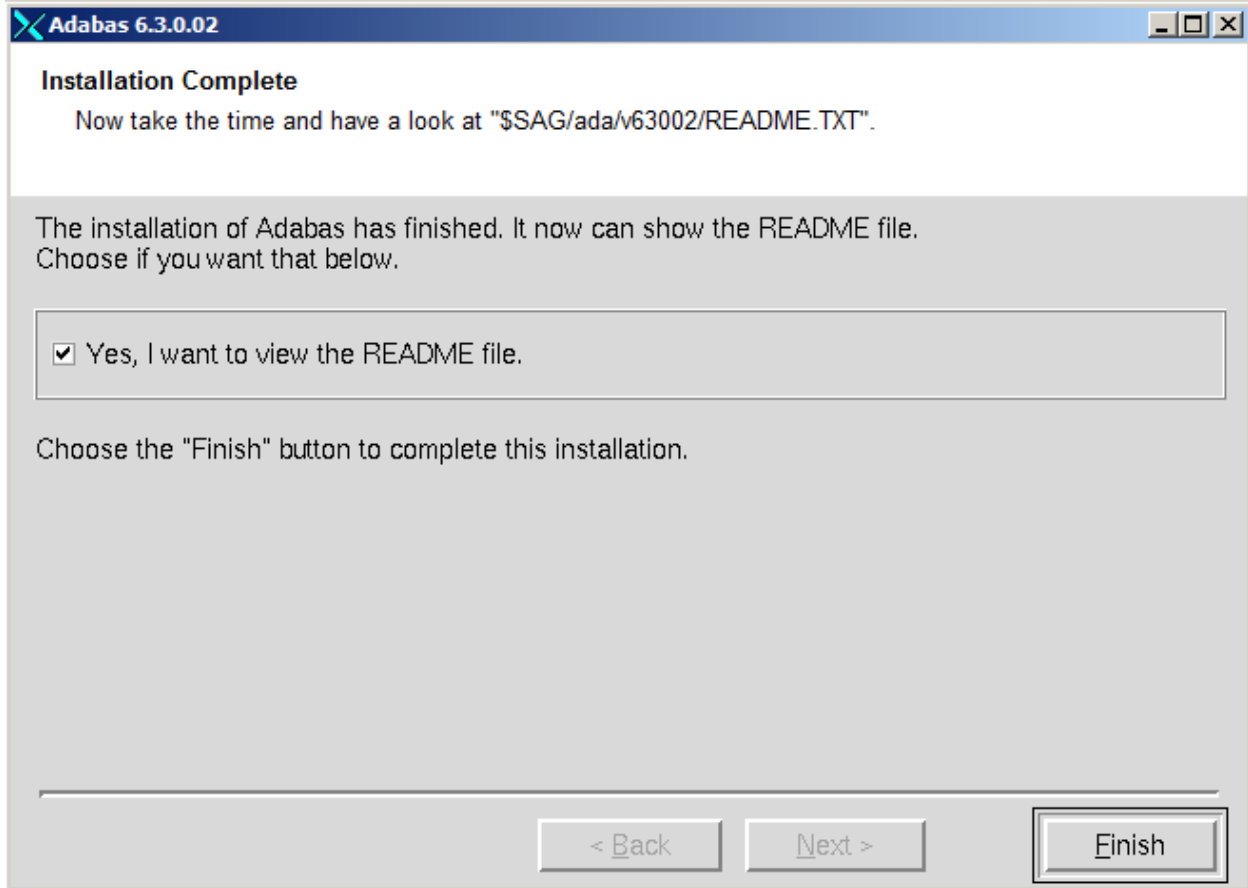
Choose **Next** to continue.



Note: If you need local Adabas calls, both products must be selected.



The postinstallation actions are displayed. Once they have finished, choose **Next** to continue.



Once the installation has completed, the readme file is displayed. Uncheck the check box if you don't want to display the readme file. Choose **Finish** to leave the installation program.

```

*****
*****
*****          readme.txt          *****
*****
*****      This file contains the latest technical details for *****
*****      this ADABAS version. *****
*****
*****      Note: *****
*****      ----- *****
*****      The file delivered with the kit contains the information *****
*****      available at release time. It is recommended to look in *****
*****      Empower, whether a newer readme.txt is available. *****
*****
*****
*****
=====
ADABAS for Open Systems          Version 6.3.0.02          March 2011
=====
Copyright (c) 2001-2011, Software AG Darmstadt, Germany and/or Software AG USA,
Inc., Reston, VA, United States of America, and/or their suppliers.
All rights reserved.

Contents
  
```

Batch Installation

When Adabas is installed, the log file (*ADAv630nnInst.log*, where *nn* is the service pack number, is written, and another file, *ADAv630Inst.sh*, which contains the batch installation settings of this particular installation, is written to `$SAG/ada/v630/INSTALL`. This file can then subsequently be executed as a shell script. An example is shown below.

If you install the product in character mode, the option `-batch` can be used to execute the installation program without further user interaction. If user input is required, the default values are used; if these values are not appropriate, the correct values have to be set using the corresponding options in the command line. The available command line options can be displayed by calling the installation program with the `-help` option.

Caution: Since the value of `$SAG` cannot be set using an option, it must already have the correct value in the calling shell.

All prerequisites and parameters are checked for correctness: missing or invalid values will cause the batch installation to terminate.

Root Authentication

Installation programs that require post-installation actions executed as a superuser usually have the following three options:

Variable/Flag Name	Type	Value	Explanation
-user	string	()	User account of SAG user
-password	string	()	Root password (usage not recommended)
-authcmd	choice	(su sudo "")	Command used for authentication

It is possible to specify the superuser password (or the user's password in connection with -authcmd sudo), as the value of the -password option, but this should not be done, because the password would appear as readable plain text on the screen or, even worse, be stored in the calling shell script. Instead, we recommend that you start the installation program using su or sudo, specifying the name of the SAG user (i.e. its own account) as the value of the -user option as shown below:

```
# Unsafe method
sh /cdrom/setupux -batch -password secret

# Recommended method
su root -c "sh /cdrom/setup.ux -batch -user sag"
```

Example 1

This example shows a log file for Adabas that was created during a custom installation. The user is abc, the sudo command was used and a password was supplied.

```
#!/usr/xpg4/bin/sh
# ----- <Start of generated batch script> -----
# -- <Adapt the following lines until end of generated> --
# ----- < batch script to your needs > -----
#
# Please consult the installation documentation for the
# necessary prerequisites.
#
# You may need to install the following Software AG products
# separately below the same $SAG, before the batch is actually started.
# Please consult the installation documentation.
# - acl v6315 "Adabas Client"
# You will find the batch scripts for the other installations
# in the respective INSTALL/ directories of the products.
#
# You should replace SECRET by the actual password
# or (even better) call this script with superuser privileges.
#
SAG="/opt/softwareag"; export SAG
/usr/xpg4/bin/sh /FS/fs2059/install/cdrom_ada63002/setup.ux ada v63002 -batch ←
-directory a64b \
```

```

-sagenv /opt/softwareag/sagenv.new \
-installtype customized \
-user abc \
-password SECRET \
-authcmd sudo \
-license /opt/softwareag/ada63.xml \
-packages "
  Nucleus & Utilities : on
  Examples : on
  DBA Workbench : on" \
-products "
  acl v6315 : on
  ada v63002 : on"
# ----- <End of generated batch script> -----

```

Example 2

This example shows the generated batch file for the Adabas client package (ACL) that was created during a custom installation. The user is abc.

```

#!/usr/xpg4/bin/sh
# ----- <Start of generated batch script> -----
# -- <Adapt the following lines until end of generated> --
# ----- < batch script to your needs > -----
#
# Please consult the installation documentation for the
# necessary prerequisites.
#
  SAG="/opt/softwareag"; export SAG
  /usr/xpg4/bin/sh /FS/fs2059/install/cdrom_ada63002/setup.ux acl v6315 -batch ←
-directory a64b \
-user abc \
-sagenv /opt/softwareag/sagenv.new \
-caller ada \
-packages "" \
-products "
  acl v6315 : on"
# ----- <End of generated batch script> -----

```

Example 3

This example shows the generated batch file for Adabas that was created during a custom installation. The user is abc, and the user has a root login on the machine.

```
#!/usr/xpg4/bin/sh
# ----- <Start of generated batch script> -----
# -- <Adapt the following lines until end of generated> --
# ----- < batch script to your needs > -----
#
# Please consult the installation documentation for the
# necessary prerequisites.
#
# You may need to install the following Software AG products
# separately below the same $SAG, before the batch is actually started.
# Please consult the installation documentation.
# - acl v6315 "Adabas Client"
# You will find the batch scripts for the other installations
# in the respective INSTALL/ directories of the products.
#
# You should replace SECRET by the actual password
# or (even better) call this script with superuser privileges.
#
  SAG="/opt/softwareag"; export SAG
  /usr/xpg4/bin/sh /FS/fs2059/install/cdrom_ada63002/setup.ux ada v63002 -batch ↵
-directory a64b \
-sagenv /opt/softwareag/sagenv.new \
-installtype customized \
-user abc \
-password SECRET \
-authcmd su \
-license /opt/softwareag/ada63.xml \
-packages "
  Nucleus & Utilities : on
  Examples : on
  DBA Workbench : on" \
-products "
  acl v6315 : on
  ada v63002 : on"
# ----- <End of generated batch script> -----
```

Example 4

This example shows the script *instprio.bsh* that is created when the installation is executed without `sudo` or root privileges. This script can be executed after the installation once the user has logged on again as `sudo` or root.

```
# Created by Software AG installation at 2011-03-29 10:20:05 MEST
# Please execute this shell script as root.
#
SAG="/opt/softwareag"; export SAG
#
# 2011-03-29 10:20:05 MEST
# No permissions to: Auth command for /opt/softwareag/ada/v63002/bin/showkrn
echo "Executing: Auth command for /opt/softwareag/ada/v63002/bin/showkrn"
cd /opt/softwareag
```

```
chown root /opt/softwareag/ada/v63002/bin/showkrn
#
# 2011-03-29 10:20:05 MEST
# No permissions to: Auth command for /opt/softwareag/ada/v63002/bin/showkrn10
echo "Executing: Auth command for /opt/softwareag/ada/v63002/bin/showkrn10"
cd /opt/softwareag
chown root /opt/softwareag/ada/v63002/bin/showkrn10
#
# 2011-03-29 10:20:05 MEST
# No permissions to: Auth command for /opt/softwareag/ada/v63002/bin/showipc.bin
echo "Executing: Auth command for /opt/softwareag/ada/v63002/bin/showipc.bin"
cd /opt/softwareag
chown root /opt/softwareag/ada/v63002/bin/showipc.bin
```

Adabas Client Installation

The Adabas client installation is a subinstallation of Adabas, which installs the Adabas client communication components. During the installation, the environment variables \$ACLDIR and \$ACLVERS are set in *aclenv* and are sourced in *sagenv.new* before *adaenv* is sourced. Please ensure that the corresponding Adabas Client option is set during the Adabas installation dialog **SAG Environment File**.

After the Installation

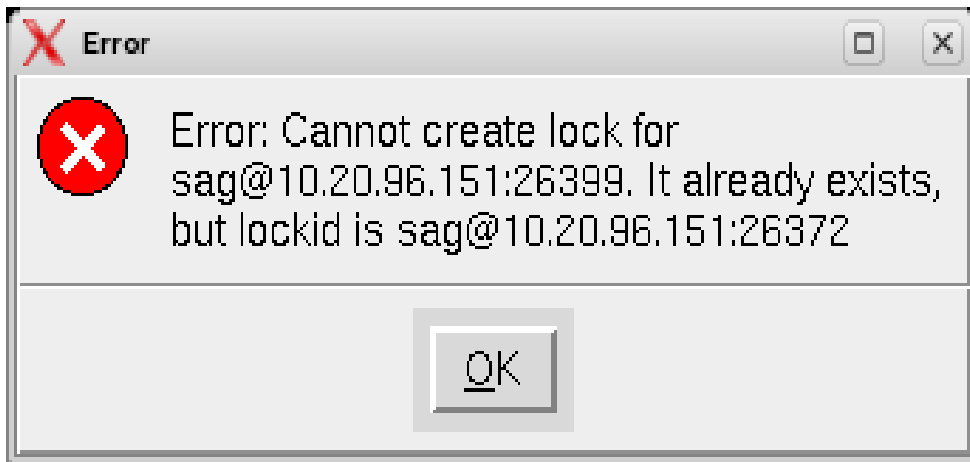
This section contains information about what to do after the actual Adabas installation. For a summary of bug fixes, known problems and restrictions and last-minute news please see the *README.TXT* file, which has been copied to *\$SAG/ada/vnnn*. The contents of this file are displayed automatically at the end of the installation procedure.

This section contains the following topics:

- [Unlocking the Installation](#)
- [Preparing the System for Raw Disk I/O Usage](#)
- [Verifying the Installation](#)
- [Examples](#)

Unlocking the Installation

By convention, a lock file (*install.lock*) is written to \$SAG during the installation in order to prevent parallel installation into \$SAG at the same time.



This may happen if you accidentally close XWindows sessions, or if you end your installation/uninstallation process with a kill command.

You must remove this link, because as long as this link exists, it is not possible to install/uninstall into this \$SAG. Before you remove *install.lock* make sure that the process on the machine mentioned in the link no longer exists.

Example

The link below contains the current user, host ip address and process id .

```
lrwxrwxrwx  1 sag      sag      22 Feb 12 10:25 install.lock -> ↵  
sag@10.20.96.151:26372
```

Preparing the System for Raw Disk I/O Usage

On a UNIX system, disk space can either be used directly via the raw disk I/O interface, or indirectly via a regular file of a mounted file system, using the UNIX cache as a buffer. If you do not intend to use the raw sections, no further action is required here.

Disk Sectioning

By convention, the disks on UNIX systems are divided into sections in order to manage the space more efficiently and flexibly. Each section defines a range of sectors, and spans contiguous tracks and cylinders.

Some sections are formed by merging smaller sections, which means that the same physical space is defined twice. Usually, there is only one section scheme for all disk types. On smaller disk types, some of the sections are smaller and some may even be missing, but the relative order and the overlapping of existing sections is the same on all disks.

Disk-Section Device Files

In UNIX systems, physical devices are treated as if they were files. Each device is represented by one or more entries in the directory */dev* or in one of its subdirectories. The entries are called device files or special files.

There are two types of I/O device drivers:

- raw or character device drivers;
- block device drivers.

Block device drivers use the UNIX cache to read/write and buffer a block of a disk or tape. Disk devices have both a raw and a block interface. Each section of a disk is represented by two device files, one for the block interface and one for the raw interface.

The AIX operating system supports freely-definable logical volume names. These names are defined using the system management interface tool (SMIT). Refer to your system documentation for further information about defining logical volume names.



Note: Do not use the name */dev/adabas*, as this will lead to serious problems.

Disk Section Usage and Security

On UNIX systems, disk sections can be used as file systems, swap space or directly by application programs. Because there is no automatic check for multiple use of the same or overlapping disk sections, the system manager and the DBA have to cooperate. Usually, only the system manager has both read and write access to the device files that represent the raw interface of disk sections.

When using a disk section for ADABAS containers, the system manager must set read and write access for ADABAS by changing the owner of the disk section to the owner of adabas images. When doing so, care must be taken to ensure that the read/write privilege only applies to disk sections that do not overlap with sections that are used for other purposes.

On UNIX systems that maintain a mount table, ADABAS performs a check during the initialization of a disk section to determine whether the disk section overlaps with one that is already mounted. If an overlap is detected, the initialization request is refused, if the option MOUNTCHECK has been specified in ADADEV.

Disk Section Usage by Adabas

Each disk section used by ADABAS must be initialized once by using the disk-space management utility ADADEV. Once this has been done, there only remains one difference between using the raw disk I/O interface and using the file system. The environment variable of an Adabas container file or sequential file must be set to the path name of the device file that represents the raw interface of the disk section, rather than to the path name of a regular file of a file system.

Example (Bourne shell)

```
ASS01=/dev/rrz0c
export ASS01
```

Example (C shell)

```
setenv ASS01 /dev/rrz0c
```

In this version of Adabas, the container files and some sequential files can be located on either raw device or file system, and some can only be located on file system.

The following table lists the Adabas container files and sequential files which can be located on either raw device or file system:

Type	Environment Variable
ASSO	ASSO1, ASSO2, ...
DATA	DATA1, DATA2, ...
WORK	WORK
SORT	SORT1, SORT2, ...
TEMP	TEMP1, TEMP2, ...
PLOG	NUCPLGx, PLPPLGx, RECOUx, RECPLGx
CLOG	NUCCLGx, CLPCLGx
BACKUP	BCK00nx, BCKOUTx
DTA	CMPDTAx, DCUDTAx, MUPDTAx, ULDDTAx
DVT	CMPDVTx, MUPDVTx, ULDDVTx
ADAMUP LOG	MUPLOGx
ADAMUP TEMP	MUPTMPx
Error File	CMPERRx, DCUERRx, ERRINx, INVERRx, MUPERRx, RECERRx

The following table lists all of the Adabas sequential files which can only be located on file system:

Type	Environment Variable
ADAMUP ISN	MUPISN
FDT	CMPFDT, DCUFDT, FDUFDT
Raw Data	CMPIN, DCUOUT

The COPY function of the Adabas utility ADADEV can be used to COPY an Adabas container file or sequential file from one disk section to another, to a file system or to a tape, or vice versa. Please refer to the chapter ADADEV in the Adabas Utilities Manual for more detailed information.

Verifying the Installation

Generate a database using the procedure *dbgen*, then change the working directory to \$ADADIR/db<dbid>, where <dbid> is the database number.

Start the Adabas nucleus either by using the DBA Workbench or by using the script *adanuc.bsh*.

You can verify that the nucleus is now online by, for example, running the ADABAS report utility *adarep* as follows:

```
adarep db=<dbid>
```

If the installation was successful, the utility will respond in a way similar to the following:

```
%ADAREP-I-STARTED,          29-MAR-2011 14:12:39, Version 6.3  
%ADAREP-I-DBON,  database <dbid> accessed online
```

Shut down the nucleus by entering the following:

```
adaopr db=<dbid> shutdown
```

Examples

The Adabas kit contains several example files. These files include both input data for creating and loading the demo files, as well as sample programs for accessing this data and for user exits and hyperexits. Please refer to the following sections for further information about the example files:

- *Appendix A - Example Utility Input Files in Utilities*
- *Appendix D - Example Files In The Adabas Kit in Command Reference*

Uninstalling Adabas under UNIX

In order to uninstall Adabas on UNIX platforms, perform the steps that are described in the following section.

- [Preparations](#)
- [Remove the Adabas Files](#)
- [Remove the Adabas Client ACL](#)
- [Adapt sagenv.new](#)

Preparations

Ensure that neither the nucleus nor any utilities of the version that you want to uninstall are running.

Remove the Adabas Files

In the first step, you will remove the Adabas files (which were extracted from the installation CD to your machine) and the Adabas product entry in the SAGInst.xml installation catalog

▶ To remove the Adabas files

- 1 Start the SAGRM utility from the \$SAG directory or a directory above it by issuing the following command:

```
sagrm
```

- 2 Select the Adabas version you want to uninstall. All files which have been extracted from CD will now be removed and the selected product is removed from the SAGInst.xml installation catalog.
- 3 All of the container files of Adabas databases and the directory \$ADADIR/etc containing the Adabas INI files are still present. If you want to remove Adabas completely, you must remove these files manually.

Remove the Adabas Client ACL

▶ To remove the Adabas client product ACL

- 1 Start the SAGRM utility from the \$SAG directory or a directory above it by issuing the following command:

```
sagrm
```

- 2 Select the ACL version you want to uninstall. SAGRM checks whether the ACL version selected to be uninstalled is required for a product version that is still installed. All files that were extracted from the installation CD are now removed and the selected product is removed from the SAGInst.xml installation catalog.
- 3 If you use a symbolic link from the /opt/softwareag directory to your \$SAG directory to find dynamically linked executables in a shared library, and if you do not need this link for other product versions, you can remove it with the following command:

```
rm /opt/softwareag
```



Note: You need root permissions to execute this command.

Adapt sagenv.new

▶ To adapt the file sagenv.new

- By default, the script sagenv.new is generated to set up the environments for all Software AG products during installation. This script is not adapted by SAGRM. If you use this script, or any copy of this script or any other script to set up your Adabas environment, remove the instructions which set up the Adabas environment for the uninstalled version, as shown in the following example:

Example

```
# Adabas
if [ -f "$SAG"/ada/v63001/INSTALL/adaenv ]; then
. "$SAG"/ada/v63001/INSTALL/adaenv
fi
```

4 Installing Adabas on Windows

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This chapter provides you with the information necessary to install and to configure Adabas on Windows platforms.

Installing Adabas

This section describes the prerequisites for installing Adabas and how to perform the Adabas installation on Windows.

The installation procedure uses the standard InstallShield mechanism.

If for any reason you wish to stop the installation procedure before it has completed, you can choose **Cancel**.

This section contains the following topics:

- [Before You Start the Installation](#)
- [Installing Adabas](#)
- [After the Installation](#)
- [Location of Files after Installation](#)

Before You Start the Installation

Before you start installing Adabas make sure that you meet the prerequisites for your environment as described below.



Caution: On Windows server operating systems, you can switch on 'Disk Write Caching'.

This may increase the operating system performance, but it is strongly recommended to use it only for disks with a backup power supply, because otherwise it may result in a corrupted database.

Hardware and Software Prerequisites for Windows

For the installation of Adabas, the following hardware requirements apply:

Hardware Prerequisites for Windows	
Processor:	x86 or x86-64
RAM:	2GB
Disk space:	Installing the optimized version of Adabas requires approximately 75MB. An additional 25MB are required if you install the trace version of Adabas. These figures do not include disk space requirements for other databases that you will create.
CD-ROM drive:	A CD-ROM drive to install the software.



Note: The RAM size given in the hardware prerequisites only applies if you do not intend to use LOBs. For LOB processing, you need at least four times the size of the LOB data concurrently accessed. However, it may happen also with this memory size that large LOBs cannot be processed because of memory fragmentation.

For the installation of Adabas, the following software requirements apply:

Software Prerequisites for Windows	
Operating System:	<p>Adabas Version 6.3 is available for the following Windows platforms:</p> <ul style="list-style-type: none"> ■ Windows XP Professional SP2 (or higher) ■ Windows Server 2008 SP2 (32 and 64 bit) ■ Windows Server 2008 R2 (32 and 64 bit) ■ Windows 7 (32 and 64 bit)

We suggest that you install all of the manufacturer's recommended patches before you start the installation - there should be no open critical patches.

Installing Adabas

If you have fulfilled the prerequisites as described above, you can proceed with the installation itself, which will only take a few minutes.

To perform the installation, you must be logged on as a user with administration rights.

To start the installation, insert the CD-ROM into the CD-ROM drive. If the Windows Autorun mode is active (this is the default), the installation procedure will ask you whether you want to run setup.exe or not. If Autorun mode is not active, you can install manually by running setup.exe in the root folder of the CD-ROM.

Also, the CD-ROM should not be removed from the CD-ROM drive until the installation is finished.

The Adabas installation offers the three installations "Typical", "Compact", and "Customized". "Typical" performs a complete installation (including the examples, DBA Workbench and the documentation). If you select "Compact", Adabas will be installed with just the nucleus, the utilities, the adabas client, DBA Workbench and the examples. The "Customized" installation allows you to select the components you wish to install. "Customized" scenarios include just the nucleus and the Adabas client only (the absolute minimum configuration), the nucleus, the Adabas client and the DBA Workbench, or just the nucleus alone (when installing a new patch level). You should also choose Customized if you want to install the trace version of Adabas. If you choose not to install one or more units during the installation procedure, you can add them at a later stage by re-running the Adabas installation procedure. Note that the installation procedure does not check which units are already installed.



Notes:

1. The Adabas installation distinguishes between the different Windows operating systems, and does not allow you to install Adabas in compatibility mode for another Windows operating system - for example, it is not possible to install Adabas on Windows 7 in compatibility mode with Windows XP (you can define the compatibility mode in the properties of SETUP.EXE). You should, therefore, ensure that the compatibility mode is defined for neither the current user nor for all users.
2. On Windows XP, a reboot is required before the Adabas database service works correctly.
3. During the installation you can specify an Adabas license file. Specifying a license file is optional - without a license file the Adabas functionality is limited to the functionality defined for the Adabas community edition. Caution: the Adabas installation does not check the license file. If you didn't specify a license file, or if the license file specified was wrong or has expired, you can activate a new license file with the DBA workbench.

After the Installation

On a server operating system such as Windows Server 2008, you may have more than one DBA, and only DBAs should have access to the database directories and be allowed to execute Adabas utilities. You can achieve this as follows:

- Create a user group, for example adadba, and include all adabas DBAs.
- Modify the permissions of the ADADIR folder:
 - Add the group adadba with full control permissions.
 - Deselect the inheritance of permissions from the object's parent in order to disable the permissions for other users, then remove all unwanted users who inherited permissions.
- On Windows 7 and Windows server 2008, there is a separate ADAPROGDIR folder, you should modify the permissions for this folder as follows:
 - Add the group adadba with read and execute permissions.
 - Deselect the inheritance of permissions from the object's parent in order to disable the permissions for other users, then remove all unwanted users who inherited permissions.
- In some cases, you may have the situation in which DBAs are only allowed to maintain a subset of the Adabas databases. If this is the case, you should proceed as follows:
 - Create user groups for the administration of the different groups of databases, for example adadbatest and adadbaprod for the administration of the test and production databases, and include all Adabas DBAs that are allowed to administrate the corresponding databases.
 - After you have created a database, modify the permissions of the database folder in ADADIR:
 - Add the relevant group with full control permissions.
 - Deselect the inheritance of permissions from the object's parent in order to disable the permissions for other DBAs, then remove the group adadba.

Behaviour without Changing Permissions

When a new database is created, the database folder and the files stored in it inherit their permissions from the parent folder, and the user that created it has full control of the files in the database folder. If you don't change the permissions, all users that belong to the group Users usually have the permission to create new files, and read permission for existing files in the folder. In addition, administrators have full control. However, note that there is different behavior between older Windows operating systems, such as Windows XP, and the newer operating systems Windows 7 and Server 2008: on the old operating systems, administrators automatically had administrator rights, but on the new operating systems they don't have administrator rights by default, except when they run an application as an administrator. This has the following consequences:

- On the old operating systems, it is not a problem for administrators to start a database created by another user.
- If you start a database created by another user on one of the new operating systems, the database is started as a read-only database.

Location of Files after Installation

For Windows operating systems prior to Windows 7, both program files and data files are installed below the same folder, ADADIR. This folder can be specified only in a customized installation when you install the first Adabas version on the system; if another version of Adabas is already installed, the new Adabas version is installed below the same folder that is already used for the existing Adabas version.

This has been changed on Windows 7 because with Windows 7, administrator rights are required to write in the program files folder: program files are installed by default below the folder %ProgramFiles%\Software AG\Adabas, now referenced as ADAPROGDIR, and data files are installed by default below the folder %ALLUSERSPROFILE%\Software AG\Adabas, now referenced as ADADIR.



Notes:

1. These folders can be specified only in a customized installation when you install the first Adabas version on the system; if another Adabas version is already installed, the new Adabas version is installed in the same folder.
2. The Adabas installation only sets two environment variables: ACLDIR (where adalnxx and other DLLs are stored), and PATH, which includes ACLDIR.
3. ADADIR, ADAPROGDIR, ADAVERS and SAG_COMMON are only available as system environment variables if you set them using the button **Set Adabas System Environment**. Then %ADAPROGDIR%\%ADAVERS% and %ADAPROGDIR%\%ADAVERS%\tools are included in PATH. You can undo these changes again using the button **Unset Adabas System Environment**.

4. The environment variables are also available in a command prompt started with the **Adabas Command Prompt** button. In this case, the environment variables ADABINPATH (%ADADIR%\%ADAVERS%) and ADATOOLS (%ADADIR%\%ADAVERS%\tools) are also available.

Examples

The Adabas kit contains several example files. These files include both input data for creating and loading the demo files, as well as sample programs for accessing this data and for user exits and hyperexits. Please refer to the following sections for further information about the example files:

- *Appendix A - Example Utility Input Files in Utilities*
- *Appendix D - Example Files In The Adabas Kit in Command Reference*

Running Utilities as a Non-Administrator User

Adabas utilities and the nucleus can be executed by non-administrator users.



Note: If you are an administrator on Windows 7, you should not run utilities including the DBA Workbench or the nucleus as administrator. If you do so, any files generated by the nucleus or utilities can no longer be processed without administrator rights.

Migrating to Windows 7

By default, previous installations of Adabas on Windows platforms installed all files in the Program Files folder. Because Adabas also writes into some of these files, you can only continue working with Adabas in the XP compatibility mode. Upgrading to a new Adabas version is not possible.

We therefore recommend that you proceed as follows:

1. Create a backup of all your databases with ADABCK
2. Delete the databases
3. Uninstall Adabas
4. Upgrade to Windows 7
5. Install Adabas
6. Recreate the databases with the Adabas Workbench
7. Restore the databases with ADABCK

8. Continue working with the databases

Uninstalling Adabas

To uninstall Adabas, use the standard **Add/Remove Programs** feature in the Windows Control Panel. In the list of installed programs in the Add/remove Programs feature, Adabas appears as *Software AG Adabas n.n.n.n*, where *n.n.n.n* is the product version number.

The Adabas client package that appears as *Software AG Adabas ClientPackage n.n.n.n* has to be uninstalled separately.

5 Installing Adabas on OpenVMS

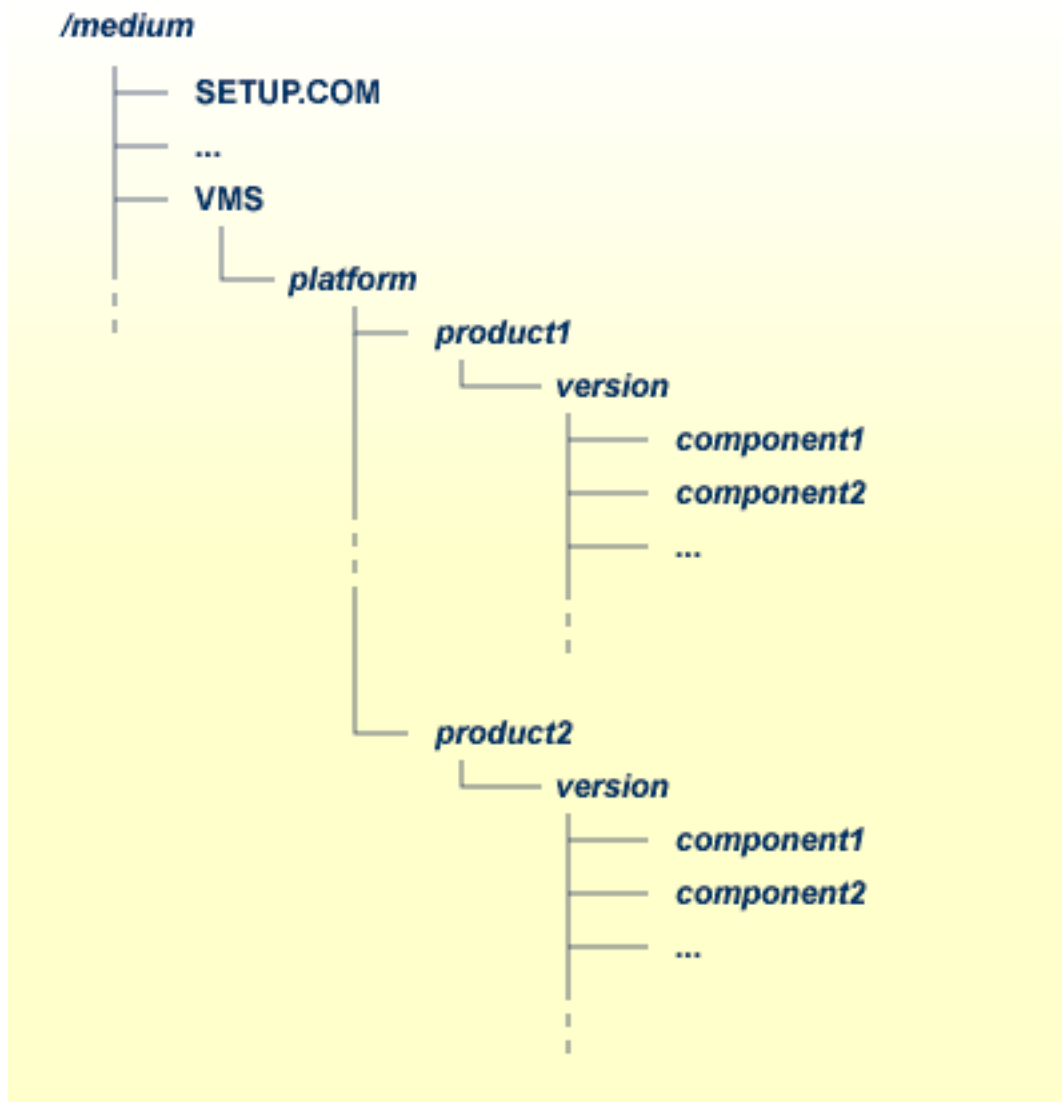
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This documentation provides you with the information necessary to set up and install Adabas on an OpenVMS platform.

Directory Structure of the Installation Medium

The installation package containing Software AG products is provided on a CD-ROM conforming to the ISO 9660 standard.

The following figure shows the general directory structure for Software AG products on the installation medium:



platform in the above graphic can stand for I64 or AXP, and *component* can stand for a suite file (*.SUI) or a product file (*.PCS).

A single product is saved in the product PCSI file *<product><version>.PCS*, for example *ADA6310.PCS* for an Adabas installation contained in the *<version>* directory.

A product suite contains several PCSI files for single products with the file extension *PCS* and an additional product suite file with the file extension *SUI*, for example *ADA6310.SUI* which is also contained in the *<version>* directory.

The *SETUP.COM* procedure invokes the installation.

Product License Key

A Software AG product is protected by a license key. Every time the Software AG product starts, the license key is read and the validity of the license key is checked.

Please note that the license key file is not contained on this installation medium. It is delivered separately in your product package. If this is not the case, it can be obtained from Software AG.

License Key File Location and Use

Before you start the product installation, you have to copy the license key file to the *SYS\$LOGIN* directory of the installing user.

During the installation, the license key file will be copied from the *SYS\$LOGIN* directory to the *[LKEY]* directory beside your product installation directory.

The License Key File

The license key file is provided as an XML document. This document can be viewed using a browsing tool or text editor. It contains text which represents the licensing information and a digital signature. It displays Software AG legal notices, copyright information etc. as well as the product license information.



Caution: If the license key is modified in any way, the digital signature will become invalid and the license key check will fail. If the check fails, you will not be able to install or run the product. In the event of a check failure, please contact your Software AG Support representative.

Before You Start The Installation

In the past, it was absolutely necessary to install the Software AG product Sagbase before you installed the main product (Adabas, Natural, ...). Sagbase was a prerequisite for all Software AG products. Starting with Adabas Version 6, Sagbase is no longer required. Nevertheless, you will find the Sagbase product (GBA 1.3.1) on the Adabas installation medium.

If you plan to install Adabas and Natural to work together, Software AG strongly recommends that you install Sagbase first. The files *Install.pdf* and *Install.txt* in the folder *VMS/I64/GBA/version/* contain a detailed description how to install Sagbase. After the installation, you will have a logical name *SAG\$ROOT* in the SYSTEM logical name table.



Caution: Please note that Adabas can only be installed on an ODS-5 volume. Also, in order to access the current version of Adabas, UIC rights are set to (RWED,RWED,,) during the installation.

Before you start installing Adabas, make sure that you meet the prerequisites for your environment as described below.



Note: The RAM size given in the hardware prerequisites for each platform only applies if you do not intend to use LOBs. For LOB processing, you need at least four times the size of the LOB data concurrently accessed. However, it may happen also with this memory size that large LOBs cannot be processed because of memory fragmentation.


Hardware and Software Prerequisites for OpenVMS (Itanium)

For the installation of Adabas, the following hardware requirements apply:

Hardware Prerequisites for OpenVMS	
Processor:	Itanium
RAM:	1GB
Disk space:	Installing the optimized version of Adabas requires approximately 36MB. An additional 10MB are required if you install the trace version of Adabas. These figures do not include disk space requirements for other databases that you will create.
CD-ROM drive:	A CD-ROM drive to install the software.

For the installation of Adabas, the following software requirements apply:

Software Prerequisites for OpenVMS	
Operating System:	OpenVMS 8.4. It is recommended to install the latest patch bundle, at least VMS84I_UPDATE-V0600 is required.

 **Note:** The minimum number of available global sections should be equal to the number of databases multiplied by the value of either the NU or NCL parameter (which ever is the largest).

We suggest that you install all of the manufacturer's recommended patches before you start the installation.

You can now proceed with the Adabas installation as described in the following sections.

Mounting the Installation Medium

▶ To mount the installation medium

- 1 Log in to the OpenVMS system manager's account or equivalent account.
- 2 Mount the installation medium using the following command:

```
MOUNT/OVERRIDE=ID/MEDIA=CD/UNDEF=VAR:CR <device-name>
```

The */OVERRIDE=ID* qualifier is necessary because the volume label may differ from installation medium to installation medium.

PCSI Installation Procedure

Start the installation using the command procedure *SETUP.COM*, which is located on the installation medium, to install Adabas in the OpenVMS environment.

SETUP.COM copies the Adabas PCSI file from the installation medium to the *SYS\$COM-MON:[SAGKITS]* directory and (optionally) starts the Adabas installation of the Polycenter Software Installation utility (PCSI). During the installation procedure, a number of general information messages are displayed: read all messages carefully and follow any advice they may provide.

Continue the Installation

If you interrupted the *SETUP.COM* procedure after it copied the product kits from the installation medium to the *[SAGKITS]* directory, you can also start the Adabas installation by entering the following:

```
product install ADA_631_0, ACL_631nn /destin=device:[directory] /OPTIONS=NOVALIDATE ↵
```

where *device:[directory]* is the target location where Adabas will reside after installation.

After the Adabas installation is started, you will be informed:

```
The following product has been selected:
SAG I64VMS ACL_631nn V6.3           Layered Product
SAG I64VMS ADA_631 V6.3           Layered Product

Do you want to continue? [YES]
```

Enter "YES" to continue the installation.

```
Configuration phase starting ...
...
SAG I64VMS ACL_631nn V6.3: ACL for OpenVMS/Itanium

Do you want the defaults for all options? [YES]

Enable this Adabas environment as default during system startup? [NO]
```

If you want to set the Adabas environment during system startup, enter "NO" to the first question and "YES" to the second question. Now you will be asked to provide the license file for Adabas.

```
Configuring SAG I64VMS ADA_631 V6.3: ADABAS for OpenVMS/Itanium

You need a license file to install ADABAS.

Accept the > default < or enter a different file.

If you choose not to install ADABAS, press Ctrl-C.

License file > SYS$LOGIN:ADA63.XML <:
```

If your license file is in the *SYS\$LOGIN* directory, you can accept the default, otherwise enter the path to the license file.

After a successful installation, the PCSI utility displays the message:

```
The following products have been installed:
SAG I64VMS ACL_631nn V6.3 Layered Product
SAG I64VMS ADA_631 V6.3 Layered Product
```

Your installation is now complete.

To set your Adabas environment enter:

```
SET DEFAULT device:[<install-directory>.ADABAS]
@LOGIN
```

You can now start using Adabas.

Environment Overview following successful Installation

Starting with Adabas Version 6.3, the arrangement of Adabas and Adabas Client (ACL) logical names has changed. Most Adabas and ACL logical names are now defined in the special product logical name tables `sag$adabas_v<version>` and `sag$acl_v<version>`. These tables are in turn defined in the logical name table `lnm$sag_table`.

In particular, those logical names that point to the shared images (see graphic below) that are used by user-written Adabas applications, are defined in the new product tables. There are, however, still some logical names kept in `LNLM$PROCESS_TABLE` and `LNLM$SYSTEM_TABLE`.

Environment after System Startup

If the administrator chooses the installation option to set the Adabas environment during system startup, the product tables and the `lnm$sag_table` will be created in the `LNLM$SYSTEM_DIRECTORY`. The `LNLM$SAG_TABLE` will be added to the `LNLM$FILE_DEV` in `LNLM$SYSTEM_DIRECTORY`.

Also, appropriate files will be created in `SYS$STARTUP` and registered in the system database `STARTUP$STARTUP_LAYERED`.

Phase	Mode	File
LPBETA	DIRECT	ADAENV_STARTUP.COM
LPBETA	DIRECT	ADA_IMAGES.COM
LPBETA	DIRECT	ACLENV_STARTUP.COM
LPBETA	DIRECT	ACL_IMAGES.COM

Executing `ADA_IMAGES.COM` and `ACL_IMAGES.COM` ensures the permanent installation of Adabas and ACL shared images during system startup, which in some cases, this could cause a

performance improvement, if, for example, Adabas or ACL shared images are concurrently mapped by different processes. But the Adabas and ACL shared images are installed during the installation process.

The DCL scripts `SYS$STARTUP:ADAENV_STARTUP.COM` and `SYS$STARTUP:ACLENV_STARTUP.COM` call the appropriate `LOGICALS.COM` to define the Adabas and ACL logical names.

Environment after Process Login

In order to use the Adabas utilities, the administrator has to execute the script `ADABAS$MAIN:LOGIN.COM`. This executes `ACL$MAIN:LOGIN.COM` automatically, after which the product tables and the `lnm$sag_table` are created in the `LNМ$PROCESS_DIRECTORY`. The `lnm$sag_table` will be added to the logical name `LNМ$PROCESS`. Currently the product tables within the `LNМ$SYSTEM_DIRECTORY` are hidden by the product tables in the `LNМ$PROCESS_DIRECTORY`. Appropriate DCL symbols required to execute the Adabas utilities and ACL tools are set by `ADABAS$VERSION:SYMBOLS.COM` and `ACL$VERSION:SYMBOLS.COM`, which are also executed during the `LOGIN.COM` process.

Creating a Database

To create a database enter:

```
@ADABAS$VERSION:DBGEN
```

You will be guided through all of the necessary steps. Once you have created a database, you can start it with:

```
@ADABAS$VERSION:START_ADANUC<dbid>
```

where `dbid` is the number of your database.

User Maintenance

Starting with Adabas Version 6.1, all Software AG products (except for Natural) use the Access Control Lists (ACL) protection mechanism on OpenVMS.

This provides a more refined level of protection than that which is available with UIC-based protection. ACLs can be used to grant or deny access rights for individual users or groups of users.

Software AG products differentiate between administrators, users and non-users. An administrator has full access to all Software AG products. Users have access to all non-critical functionality of all Software AG products. Non-users cannot use Software AG products. Please note that this concept does not distinguish between different Software AG products - a defined administrator or user for Adabas is also a defined administrator or user for Net-Work or other Software AG products.

This concept is based on the two rights identifiers `sag$admin` and `sag$user`. The `sag$admin` identifier allows RWED access and is included in the ACL of each file or directory. The `sag$user` identifier allows R or RE access and is included in the ACL for just some files but for most of the directories. An administrator account has the identifier `sag$admin` in the UAF record. A user account has the identifier `sag$user` in the UAF record.

The following example shows the security settings of the Adabas utilities ADATST and ADAOPR:

```
$ DIR/SEC ADATST, ADAOPR

Directory RDS1C$USER:[SAG.ADABAS.V618]

ADATST.EXE;1      [SYSTEM]                      (RWED,RWED,RE,)
                  (IDENTIFIER=SAG$ADMIN,ACCESS=READ+WRITE+EXECUTE+DELETE)
                  (IDENTIFIER=SAG$user,ACCESS=READ+EXECUTE)
ADAOPR.EXE;1      [SYSTEM]                      (RWED,RWED,RE,)
                  (IDENTIFIER=SAG$ADMIN,ACCESS=READ+WRITE+EXECUTE+DELETE)
```

Both utilities are fully-accessible from an administrator account, but a user account can only access the ADATST utility.

Software AG provides a DCL procedure `USERADMIN.COM` to define which accounts are administrators or users. The procedure is in the directory `.[SAGCOMMON]` which belongs to your product directory (e.g. `.[ADABAS]`).

The following example shows the main menu:

```
$ @[.SAGCOMMON]USERADMIN

      S o f t w a r e   A G   -   U s e r   M a i n t e n a n c e
      r e q u e s t i n g   p a r a m e t e r   i n p u t
-----

*****
*   This procedure enables and disables accounts           *
*   to use Software AG products.                          *
*                                                         *
*   Version:   1.3   Feb 2010                             *
*****

      1   Add User
      2   Add Administrator
      3   Delete User
      4   Delete Administrator
      5   Show Users
      6   Show Administrators
```

```
          9  Exit
Enter number:
```

In addition to adding both identifiers to the accounts, the procedure also provides each administrator or account with the identifier VMS\$MEM_RESIDENT_USER. This allows access to the memory-resident global sections. Furthermore, each administrator or user account is assigned to the privileges GRPNAM, PRMGBL, SYSGBL, SYSLCK, SYSNAM and PRMMBX.



Important: The procedure cannot work correctly if you use different accounts with the same UIC - doing so may also cause additional problems on your machine (not related to Software AG products).

None of the accounts that are not defined as an Administrator or a user are able to use Adabas or any other Software AG product (except for Natural). However, the SYSTEM account or other accounts with appropriate privileges can bypass this restriction.

Accounts which are defined as a user can access most of the files in the example directory and the following Adabas utilities:

```
ADAERR.EXE
ADAMON.EXE
ADAREP.EXE
ADASHOW.EXE
ADATST.EXE
ADAVFY.EXE
```

Uninstalling the Product

You can uninstall products delivered with a product suite by calling the PCSI uninstallation of the product suite.

If you want to uninstall a Software AG product from your OpenVMS machine enter:

```
PRODUCT REMOVE <name>_<version>0
```