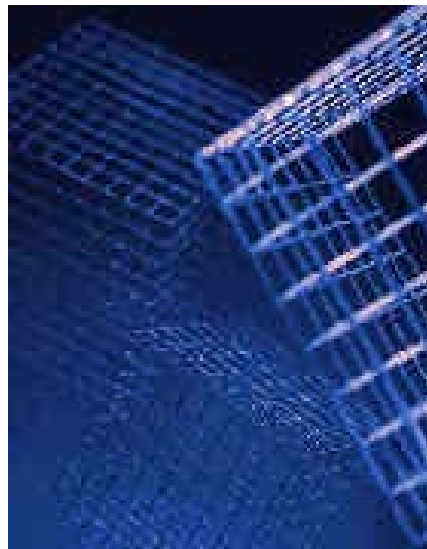


# Installation Manual: SAP DB








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<http://www.gnu.org/copyleft/fdl.html#SEC4>.

## Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

## Typographic Conventions

Type Style	Description
<i>Example text</i>	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options.  Cross-references to other documentation.
<b>Example text</b>	Emphasized words or phrases in body text, titles of graphics and tables.
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.
Example text	Screen output. This includes file and directory names and their paths, messages, source code, names of variables and parameters as well as names of installation, upgrade and database tools.
EXAMPLE TEXT	Keys on the keyboard, for example, function keys (such as F2) or the ENTER key.
<b>Example text</b>	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.

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# Installation Manual: SAP DB

## Purpose

This documentation describes the installation, update, and uninstallation of SAP DB software, as well as the update of database instances on [operating system platforms](#) supported by SAP DB.

It is particularly concerned with the following programs:

- SDBINST for the installation or update of [installation profiles \[Page 35\]](#) and individual [SAP DB software components \[Page 36\]](#), while taking into account dependencies between the components
- SDBUNINST for uninstalling SAP DB software components, while taking into account dependencies between the components
- SDBUPD for [updating database instances and their software \[Page 21\]](#)



For a short description of the **standard** installation or update, and standard uninstallation, of the **entire** SAP DB software package **outside of SAP systems**, see the documentation [Database Software Installation Guide: SAP DB 7.4](#).

For general information on the SAP DB database system, see the documentation [The SAP DB Database System](#) on the SAP DB Homepage <http://www.sapdb.org> under *Documentation*.

The description of updating database instances and their software also applies to SAP DB database instances in **SAP systems**.

## Constraints

This documentation is **not** relevant for installing or uninstalling SAP DB software in **SAP systems**. The installation or uninstallation of the SAP DB software required for SAP systems is described in SAP-specific guides. SAP customers can find these guidelines in the SAP Service Marketplace, under <http://service.sap.com>.

## Implementation Considerations

The programs SDBINST, SDBUNINST and SDBUPD are part of the SAP DB software.

Open source users can download the entire SAP DB software free of charge from the SAP DB Homepage <http://www.sapdb.org> under *Software*, or order a free SAP DB CD-ROM, at the same address.

SAP customers receive the SAP DB software with the SAP installation CD or in the Service Marketplace at <http://service.sap.com>.

The following description is based on using the software available online on the SAP DB Homepage and the SAP Service Marketplace.

[Installing and Updating SAP DB Software \[Page 6\]](#)

[Uninstalling the SAP DB Software \[Page 19\]](#)

[Updating Database Instances and Their Software \[Page 21\]](#)



# Installing and Updating SAP DB Software

## Implementation Considerations

You can install or update SAP DB software either interactively, or in the background.

You can install complete [installation profiles \[Page 35\]](#), or just install or update individual [SAP DB software components \[Page 36\]](#). The installation program itself decides whether it is dealing with a new installation or an update.

The system [logs \[Page 37\]](#) the installation process.

Before you start the installation or upgrade of the SAP DB software:

- Make sure you have taken precautions against the most common errors that can cause an installation or update to terminate ([Troubleshooting \[Page 31\]](#)).
- Inform yourself about the advantages and disadvantages of interactive and background installations.
- Decide whether you need one or more database instances.



If you plan to run multiple database instances, we recommend a separate (parallel) software installation for each database instance. This makes subsequent updates easier, since any errors will only affect one database instance.

- Choose an appropriate installation profile, or decide whether, in special cases, you only need to install or update one or more individual SAP DB software components. You can install individual components in the background only.



We recommend that you perform your installation or update with installation profiles. This is a simple and secure way of choosing the SAP DB software installation that meets your needs.

## Conventions

[Variables](#), supported [Operating System Platforms](#)

## Interactive Installation/Update

You install complete installation profiles in an interactive installation or update. The installation program SDBINST queries all necessary information, and offers you defaults and options for the installation profiles and installation paths. The program then installs the software package and registers it.

## Background Installation/Update

In a background installation or update, you use options to specify the information needed by SDBINST. The actual installation process then runs in the background.

## Advantages of Installation in the Background

- Performing an installation or an upgrade in the background takes less time.
- You have the option of installing or updating individual SAP DB software components (parts of installation profiles).
- You can use an embedding in a call script to generate identical software installations on different servers.

## Disadvantages of Installation in the Background

- You must enter all the required options in the call script correctly and completely.
- The system determines some options from the software packages only at runtime. The system cannot check the completeness of the information at the start of the installation. It starts the installation, and then interrupts it if any information is missing.

## Installation/Update with Installation Profiles

You can choose between various combinations of software components, which meet different requirements. You choose the installation profile that is appropriate for your needs, and do not need to worry about the sequence of the installation, or any dependencies between software components. You simply have a fully functioning software installation.

The **standard** installation or update of the **entire SAP DB software package** is in the installation profile *all*.



For a short description of the **standard** installation or update of the **entire SAP DB software package**, see the documentation [Database Software Installation Guide: SAP DB 7.4](#)

## Installation/Update with Software Components

You install individual components of the SAP DB software to update parts of your SAP DB software installation. We recommend this installation in special cases only.

You must take into account the dependencies between the individual software components. Otherwise, you see an appropriate error message, and the system terminates the installation.



### Background Installation of the SAP DB Software Component Precompiler (CPC <version>)

You want to update only the C++ Precompiler in your existing software installation. Start the installation of the software component *CPC SDK <version>*. The system recognizes that this component requires a new version of the software component *CPC Base*. You are reminded that the package *CPC SDK <version>* depends on the package *CPC Base*, which must be installed first. The installation terminates.

If there are many dependencies, you must restart the installation many times (each time with a different installation package).

Avoid this problem by using, for example, the installation profile *C Precompiler*.

[Installing and Updating Software on UNIX \[Page 7\]](#)

[Installing and Updating Software on Linux \[Page 13\]](#)

[Installing and Updating Software on Microsoft Windows \[Page 15\]](#)



## Installing and Updating Software on UNIX

### Use

You are installing or updating a chosen [installation profile \[Page 35\]](#) or SAP DB software [component \[Page 36\]](#). Use the following procedure for updates only if no [database instances](#) refer to the installation path of the software that you want to update.



If database instances refer to the installation path of the software, you must update the database instances together with the software ([Updating Database Instances and Their Software \[Page 21\]](#)). Otherwise, you risk making the database instances incompatible with the database software, and you will not be able to run them.

The system [logs \[Page 37\]](#) the installation process.

## Procedure

1. First, unpack the SAP DB software to a local directory.  
[Unpacking the Software on UNIX \[Page 8\]](#)
2. Now decide whether you want to perform an interactive installation (only possible for installation profiles) or a background installation.
  - i [Interactive Installations/Updates on UNIX \[Page 9\]](#)
  - i [Background Installations/Updates on UNIX \[Page 11\]](#)

For the advantages and disadvantages of these installation procedures, see [Installing and Updating SAP DB Software \[Page 6\]](#).



## Unpacking the Software on UNIX

### Conventions

#### [Variables](#)

### Procedure

1. Choose the appropriate software package for your operating system architecture, your database instance type, and the [installation profile \[Page 35\]](#).

If you want to install or update an individual [SAP DB software component \[Page 36\]](#) only, then select an installation profile that contains this software component.

**Installation from the SAP Service Marketplace** (*service.sap.com*, for SAP customers only)

- For [SAP DB OLTP](#) choose  
*SAP Software → Download → SAP Support Packages & Patches → SAP DB → SAP DB OLTP 64-BIT → SAP DB <version> OLTP → <os> → SAPDB<version>\_<build>-<GUID>.SAR*
- For [liveCache](#) (SAP APO system) choose  
*SAP Software → Download → SAP Support Packages & Patches → SAP APO → SAP APO <apo\_version> → Binary Patches → APO LC<version>/LCAPPS<apo\_version> → <os> → LC<version>A<apo\_version>\_<apo\_build>-<GUID>.SAR*

**Installation from the SAP DB Homepage** (*www.sapdb.org*)

- [SAP DB OLTP](#) only  
 Go to *Software*, choose your operating system, and follow the instructions for downloading the software package  
*SAPDB-<inst\_profile>-<os>-64bit-<arch>-<version>\_<build>.tgz*

2. Copy the software package to a local directory of your choice.



3. Unpack the software with the following command:

**Installation from the SAP Service Marketplace** (*service.sap.com*):

```
SAPCAR -xvf SAPDB7300_32-<GUID>.SAR
```

**Installation from the SAP DB Homepage** (*www.sapdb.org*)

```
tar xvzf sapdb-<inst_profile>-<os>-64bit-<arch>-<version>_<build>
```

## Result

The system creates the following in this local directory

- for SAP DB-OLTP, the subdirectory  
sapdb-<inst\_profile>-<os>-64bit-<arch>-<version>
- for SAP DB liveCache, the subdirectory  
sapdb-apo<apo\_version>\_livecache-<os>-64bit-<arch>-<version>

and saves the software to it.



## Interactive Installations/Updates on UNIX

### Use

You are using the program SDBINST to install or update [installation profiles \[Page 35\]](#) of the SAP DB software on UNIX. The program queries all necessary information during the installation process.



You must stop the program V Server before you update the database software. Remember that this interrupts the communication between the clients and **all** local database instances.

### Conventions

#### [Variables](#)

### Prerequisites

- You are in a `root` shell.
- You have downloaded the installation package, and unpacked it in a local directory of your choice ([Unpacking the Software on UNIX \[Page 8\]](#)).

### Preparations

If the following conditions apply to your system, you must perform the accompanying steps before a new installation:

- The installation program enters the services `sql6`, `sql30` and `sapdb ni 72` in the file `/etc/services`, if they do not already exist there. If these services are managed centrally for your system on your network (NIS), you must enter them there as follow:  

```
sql6          7210/tcp
sql30         7200/tcp
sapdb ni 72   7269/tcp
```
- You must specify the group and owner of the SAP DB database software for the installation. If this information is managed centrally in the network, you must create it there.

- If the path `<independent_program_path>/bin` is not yet entered in the environment variable `PATH`, enter it now.

## Procedure

1. If you want to update an existing SAP DB installation,
  - Stop each SAP DB database instance assigned to the installation directory that you want to update with the command  
`dbmcli -d <database_name> -u <dbm_user>,<password>  
db_offline`
  - Stop V Server (`Xserver` service) with the command  
`x_server stop`

For a new installation, start at step 2.

2. Switch to the directory  
`sapdb-<inst_profile>-<os>-64bit-<arch>-<version>_<build>`,  
 which contains the installation software for your chosen [installation profile \[Page 35\]](#).  
 Enter `./SDBINST` to start the installation/update program.
3. The system proposes your chosen installation profile.  
 If your installation profile contains other installation profiles (*all*, for example), you can also select one of these profiles. Specify the appropriate ID. Confirm your selection.
4. The system prompts you to enter the group `<group>` and owner `<owner>` of the SAP DB database software.

The system defaults are:

- For an **installation outside of the SAP system**:  
 For `<group>` **sapsys** and for `<owner>` **sapdb**  
 If **sapsys** and **sapdb** have not yet been created, the system asks you whether you want to create them. Specify your chosen values, or confirm the defaults.
- For an **update outside of an SAP system**, the values chosen for the preceding installation/update

For an **update within an SAP system**

For SAP DB OLTP for `<group>` **sapsys** and for `<owner>` **sqdsid**

For liveCache for `<group>` **sapsys** and for `<owner>` **sidadm**.)

5. The system now checks your server for SAP DB installations that can be updated.

It lists any relevant installations.

- If you want to update an existing installation, specify its ID.  
 The system then updates the software in `<independent_data_path>` and `<independent_program_path>`. Depending on your chosen profile, the software in `<dependent_path>` is also updated, if the installation package contains newer versions of the data.
- If you want to perform a new installation of the database software in **parallel** with the existing installation, specify `none`. You then have the option of specifying a new installation path. Define an installation path in parallel with the existing installation path.

If **no** SAP DB installation exists yet on your server, the SAP DB components in the installation profile are now installed, one by one. Depending on your chosen installation profile, the system prompts you for the following paths:

- Path for saving data, configurations, and run directories of SAP DB database instances and SAP DB applications (system default is  
`/var/opt/sapdb/indep_data`)

- Path for saving programs and libraries shared by SAP DB database instances and SAP DB applications (system default is `/opt/sapdb/indep_prog`)

Specify paths, or confirm the defaults.

6. If there has not been a SAP DB installation on your server up to now, add the entry `<independent_program_path>/bin` to the environment variable `PATH` for each user that wants to use SAP DB.

You see a message about the successful completion of the installation.

## Result

The chosen installation profile of the SAP DB software has been installed and registered in the new version on your server. You can check the progress of the installation in the log ([Logging \[Page 37\]](#)).

You can now create new database instances with the Database Manager

(See:

- [Creating a Database Instance](#) in *Database Manager CLI: SAP DB 7.4* or
- the [Web DBM](#) documentation.)



## Background Installations/Updates on UNIX

### Use

You are using the program `SDBINST` to install or update [installation profiles \[Page 35\]](#) or individual [components \[Page 36\]](#) of the SAP DB software on UNIX. You specify all required information on the command line, together with the command for starting the installation program.



You must stop the program V Server before you update the database software. Remember that this interrupts the communication between the clients and **all** local database instances.

### Conventions

#### [Variables](#)

### Prerequisites

- You are logged on to your server as the `root` user.
- You have unpacked the required software ([Unpacking the Software on UNIX \[Page 8\]](#)).

### Preparations

If the following conditions apply to your system, you must perform the accompanying steps before a new installation:

- The installation program enters the services `sql6`, `sql30` and `sapdbni72` in the file `/etc/services`, if they do not already exist there. If these services are managed centrally for your system on your network (NIS), you must enter them there as follow:
 

<code>sql6</code>	<code>7210/tcp</code>
<code>sql30</code>	<code>7200/tcp</code>
<code>sapdbni72</code>	<code>7269/tcp</code>

- You must specify the group and owner of the SAP DB database software for the installation. If this information is managed centrally in the network, you must create it there.
- If the path `<independent_program_path>/bin` is not yet entered in the environment variable `PATH`, enter it now.

## Procedure

1. If you want to update an existing SAP DB installation,
  - Stop each SAP DB database instance assigned to the installation directory that you want to update with the command  
`dbmcli -d <database_name> -u <dbm_user>,<password>  
db_offline`
  - Stop V Server (`Xserver` service) with the command  
`x_server stop`

For a new installation, start at step 2.

2. Start the installation/update process for the SAP DB OLTP software with the following command:  
`./SDBINST [-b] -profile <inst_profile> [,<inst_profile2>...] | -  
package <package_name>[,<package_name2>...] -indep_data  
<independent_data_path> -indep_prog <independent_program_path> -  
depend <dependent_path> -o <owner> -g <group>`

Start the installation/update process for the liveCache software (in SAP APO systems only) with the following command:

- For the [installation profile \[Page 35\]](#) *APO liveCache*  
`./SDBINST [-b] -profile "APO LiveCache" -indep_data  
<independent_data_path> -indep_prog  
<independent_program_path> -depend <dependent_path> -o  
<owner> -g <group>`
- For the [SAP DB software component \[Page 36\]](#) *APO LC APPS* (from APO Version 4.0) or *APO COM*  
`./SDBINST [-b] -package "APO LC APPS" | "APOCOM" -depend  
<dependent_path>`



For an explanation of the options, see [Overview of the Options for the Program SDBINST \[Page 38\]](#).

You must place any names of installation profiles and SAP DB software components that contain blanks in double quotation marks.

You do not need to specify the options `-indep_prog`, `-indep_data` and `-depend` for certain installation profiles or SAP DB components. If you do specify them, the system ignores them. See the overview of the options for more information.

You see a message about the successful completion of the installation.

## Result

The software packages are installed and registered. You can check the result of your installation using the log ([Logging \[Page 37\]](#)).

You can now create new database instances with the Database Manager

(See:

- [Creating a Database Instance](#) in *Database Manager CLI: SAP DB 7.4* or
- the [Web DBM](#) documentation.)



## Installing and Updating Software on Linux

### Use

You choose a [SAP DB software component \[Page 36\]](#), and install it.

Use the following procedure for updates only if no [database instances](#) refer to the installation path of the software that you want to update.



If database instances refer to the installation path of the software, you must update the database instances together with the software ([Updating Database Instances and Their Software \[Page 21\]](#)). Otherwise, you risk making the database instances incompatible with the database software, and you will not be able to run them.

Two programs are available for installations on Linux:

- [Installations/Updates with the Red Hat Package Manager \[Page 13\]](#)
- [Installations/Updates with SDBINST \[Page 14\]](#)



## Installations/Updates with the Red Hat Package Manager

### Use

You are installing or updating [components \[Page 36\]](#) of the SAP DB software on Linux. You specify all required information on the command line, together with the command for starting the installation program.

You must take into account the dependencies between the SAP DB components to guarantee that the software installation can function.



If you have already installed SAP DB software on your server with the Red Hat Package Manager (installation with rpm package), then you can now use this program only for subsequent installations and updates.  
You can no longer use SDBINST for installations and updates (installation with tgz package).

### Prerequisites

- You are in a `root` shell.
- You can access to the rpm packages that you want to install.

### Procedure

#### First Installation of the SAP DB Software

1. Execute the installation command:  
`rpm -Uhv sapdb*.rpm`
2. Add the entry `<independent_program_path>/bin` to the environment variable `PATH` for each user that wants to use SAP DB.

## Updating the SAP DB Software



Stop all existing SAP DB software on the server where you want to update the SAP DB software version.

Stop V Server (`Xserver` service). Remember that this interrupts the communication between the clients and **all** local database instances.

1. Stop all SAP DB database instances assigned to the installation directory that you want to update with the command  
`dbmcli -d <database_name> -u <dbm_user>, <password> db_offline`
2. Execute the installation command:  
`rpm -Uhv sapdb*.rpm`

## Result

The SAP DB software components in the chosen package have been installed and registered with the new version.

You can now create new database instances with the Database Manager

(See:

- [Creating a Database Instance](#) in *Database Manager CLI: SAP DB 7.4* or
- the [Web DBM](#) documentation.)



## Installations/Updates with SDBINST

### Use

You are installing or updating [components](#) [Page 36] of the SAP DB software on Linux. You specify all required information on the command line, together with the command for starting the installation program.

You must take into account the dependencies between the SAP DB components to guarantee that the software installation can function.



If you have already installed SAP DB software on your server with the Red Hat Package Manager (installation with rpm package), then you can now use this program only for subsequent installations and updates.

You can no longer use SDBINST for installations and updates (installation with tgz package).

## Procedure

Proceed as described under [Installing and Updating the Software on UNIX](#) [Page 7].



# Installing and Updating Software on Microsoft Windows

## Use

You are installing or updating a chosen [installation profile \[Page 35\]](#) or SAP DB software [component \[Page 36\]](#). Use the following procedure for updates only if no [database instances](#) refer to the installation path of the software that you want to update.



If database instances refer to the installation path of the software, you must update the database instances together with the software ([Updating Database Instances and Their Software \[Page 21\]](#)). Otherwise, you risk making the database instances incompatible with the database software, and you will not be able to run them.

The system [logs \[Page 37\]](#) the installation process.

## Procedure

1. First, unpack the SAP DB software to a local directory.  
[Unpacking the Software on Microsoft Windows \[Page 15\]](#)
2. Now decide whether you want to perform an interactive installation (only possible for installation profiles) or a background installation.
  - ┆ [Interactive Installations/Updates on Microsoft Windows \[Page 16\]](#)
  - ┆ [Background Installations/Updates on Microsoft Windows \[Page 18\]](#)

For the advantages and disadvantages of these installation procedures, see [Installing and Updating SAP DB Software \[Page 6\]](#).



# Unpacking the Software on Microsoft Windows

## Conventions

[Variables](#)

## Procedure

1. Select the SAP DB software package that is appropriate for your installation profile and operating system architecture.

If you want to install or update an individual [SAP DB software component \[Page 36\]](#) only, then select an installation profile that contains this software component.

**Installation from the SAP Service Marketplace** (*service.sap.com*, for SAP customers only)

- For [SAP DB OLTP](#) choose

### 32 bit version

*SAP Software → Download → SAP Support Packages & Patches → SAP DB → SAP DB OLTP → SAP DB <version> OLTP → <os> → SAPDB<version>\_<build>-<GUID>.SAR*

### 64 bit version

*SAP Software → Download → SAP Support Packages & Patches → SAP DB →*

*SAP DB OLTP 64-BIT* → *SAP DB <version> OLTP* → *<os>* →  
 SAPDB<version>\_<build>-<GUID>.SAR

- For [liveCache](#) (SAP APO system) choose  
*SAP Software* → *Download* → *SAP Support Packages & Patches* → *SAP APO*  
 → *SAP APO <apo\_version>* → *Binary Patches* → *APO*  
*LC<version>/LCAPPS<apo\_version>* → *<os>* →  
 LC<version>A<apo\_version>\_<apo\_build>-<GUID>.SAR

#### Installation from the SAP DB Homepage ([www.sapdb.org](http://www.sapdb.org))

- [SAP DB OLTP](#) only  
 Go to *Software*, choose your operating system, and follow the instructions for downloading the software package  
 SAPDB-<inst\_profile>-win-<32|64>bit-<arch>-  
 <version>\_<build>.zip
2. Copy the software package to a local directory of your choice.
  3. Unpack either
    - a `sar` package with the program `SAPCAR`
    - or a `zip` package with the program `Winzip`
 to a local directory of your choice.

## Result

The system creates the following in this local directory

- for SAP DB-OLTP, the subdirectory  
 sapdb-<inst\_profile>-win-<32|64>bit-<arch>-<version>
- for SAP DB liveCache, the subdirectory  
 sapdb-apo<apo\_version>\_livecache-win-<32|64>bit-<arch>-<version>

and saves the software to it.



## Interactive Installations/Updates on Microsoft Windows

### Use

You are using the program `SDBINST` to install or update [installation profiles \[Page 35\]](#) of the [SAP DB software on Microsoft Windows](#). The program queries all necessary information during the installation process.



You must stop the program `V Server` before you update the database software. Remember that this interrupts the communication between the clients and **all** local database instances.

### Conventions

#### [Variables](#)



## Prerequisites

- You have administrator rights for your server.
- You have downloaded and unpacked the installation package ([Unpacking the Software on Microsoft Windows \[Page 15\]](#)).

## Procedure

1. If you want to update an existing SAP DB installation,
  - Stop each SAP DB database instance of all installed SAP DB versions with the command  
`dbmcli -d <database_name> -u <dbm_user>,<password>  
db_offline`
  - Stop V Server (Xserver service) with the command  
`x_server stop`

For a new installation, start at step 2.

2. Open a command prompt and navigate to the local directory that contains the installation files:
  - for SAP DB-OLTP, the directory  
`sapdb-<inst_profile>-win-<32|64>bit-<arch>-<version>`
  - for liveCache, the directory  
`sapdb-apo<apo_version>_<livecache>-win-<32|64>bit-<arch>-<version>`
3. Enter `sdbinst` to start the installation/update program.
4. The system proposes your chosen [installation profile \[Page 35\]](#). If your installation profile contains other installation profiles (*all*, for example), you can also select one of these profiles. Specify the appropriate ID. Confirm your selection.
5. The system now checks your server for SAP DB installations that can be updated.

It lists any relevant installations.

- If you want to update an existing installation, specify its ID. The system then updates the software in `<independent_data_path>` and `<independent_program_path>`. Depending on your chosen profile, the software in `<dependent_path>` is also updated, if the installation package contains newer versions of the data.
- If you want to perform a new installation of the database software in **parallel** with the existing installation, specify `none`. You then have the option of specifying a new installation path. Define an installation path in parallel with the existing installation path.

If **no** SAP DB installation exists yet on your server, the SAP DB components in the installation profile are now installed, one by one. Depending on your chosen installation profile, the system prompts you for the following paths:

- Path for saving data, configurations, and run directories of SAP DB database instances and SAP DB applications (system default is `/var/opt/sapdb/indep_data`)
- Path for saving programs and libraries shared by SAP DB database instances and SAP DB applications (system default is `/opt/sapdb/indep_prog`)

Specify paths, or confirm the defaults.

You see a message about the successful completion of the installation.

6. If there has not been a SAP DB installation on your server up to now, we recommend that you shut down your server, and restart it, so that the system can recognize the `<independent_program_path>`.

This is not necessary if you are updating database software.

## Result

The chosen installation profile of the SAP DB software has been installed and registered in the new version. You can check the progress of the installation in the log ([Logging \[Page 37\]](#)).

You can create new database instances with the Database Manager

(See:

- [Creating or Initializing a Database Instance](#) in *Database Manager GUI: SAP DB 7.4*
- [Creating a Database Instance](#) in *Database Manager CLI: SAP DB 7.4*
- or the [Web DBM](#) documentation.)



## Background Installations/Updates on Microsoft Windows

### Use

You are using the program SDBINST to install or update [installation profiles \[Page 35\]](#) or individual [components \[Page 36\]](#) of the SAP DB software on Microsoft Windows. You specify all required information on the command line, together with the command for starting the installation program.



You must stop the program V Server before you update the database software. Remember that this interrupts the communication between the clients and **all** local database instances.

### Conventions

[Variables](#)

### Prerequisites

- You have administrator rights for your server.
- You have downloaded and unpacked the installation package ([Unpacking the Software on Microsoft Windows \[Page 15\]](#)).

### Procedure

3. If you want to update an existing SAP DB installation,
  - i Stop each SAP DB database instance assigned to the installation directory that you want to update with the command  
`dbmcli -d <database_name> -u <dbm_user>, <password>  
db_offline`
  - i Stop V Server (`Xserver` service) with the command  
`x_server stop`

For a new installation, start at step 2.

4. Start the installation/update process for the SAP DB OLTP software with the following command:  
`sdbinst [-b] -profile <inst_profile> [,<inst_profile2>...] | -  
package <package_name>[,<package_name2>...] -indep_data  
<independent_data_path> -indep_prog <independent_program_path> -  
depend <dependent_path>`

Start the installation/update process for the liveCache software (in SAP APO systems only) with the following command:

- i For the [installation profile \[Page 35\]](#) *APO liveCache*  
`sdbinst [-b] -profile "APO LiveCache" -indep_data  
<independent_data_path> -indep_prog  
<independent_program_path> -depend <dependent_path>`
- i For the [SAP DB software component \[Page 36\]](#) *APO LC APPS* (from APO Version 4.0) or *APO COM*  
`sdbinst [-b] -package "APO LC APPS" | "APO COM" -depend  
<dependent_path>`



For an explanation of the options, see [Overview of the Options for the Program SDBINST \[Page 38\]](#).

You must place any names of installation profiles and SAP DB software components that contain blanks in double quotation marks.

You do not need to specify the options `-indep_prog`, `-indep_data` and `-depend` for certain installation profiles or SAP DB components. If you do specify them, the system ignores them. See the overview of the options for more information.

You see a message about the successful completion of the installation.

## Result

The software packages are installed and registered. You can check the result of your installation using the log ([Logging \[Page 37\]](#)).

You can create new database instances with the Database Manager

(See:

- [Creating or Initializing a Database Instance](#) in *Database Manager GUI: SAP DB 7.4*
- [Creating a Database Instance](#) in *Database Manager CLI: SAP DB 7.4*
- or the [Web DBM](#) documentation.)



## Uninstalling the SAP DB Software

### Implementation Considerations

You use the uninstall program SDBUNINST to uninstall some or all of the [SAP DB software components \[Page 36\]](#), while taking into account the dependencies between them. It is included in the SAP DB software from Version 7.4.

You can use it to uninstall SAP DB software as of Version 7.2.

[Overview of Options for the Program SDBUNINST \[Page 39\]](#)



For a short description of the **standard** uninstallation of **all the SAP DB software**, see the documentation [Database Software Installation Guide: SAP DB 7.4](#)

## Conventions

[Variables](#), supported [Operating System Platforms](#)

## Prerequisites

- One or more SAP DB software versions are installed on your server. These include at least one installation of Version 7.4, which includes SDBUNINST.
- You have administrator rights for your server.

## Procedure

1. On UNIX/Linux: Switch to the `root` shell.  
On Microsoft Windows: Open the command prompt on your server.
2. Stop V Server (`Xserver` service):  
`x_server stop`
3. Stop each SAP DB database instance on your server with the command:  
`dbmcli -d <database_name> -u <dbm_user>,<password> db_offline`
4. Delete each SAP DB database instance on your server with the command:  
`dbmcli -d <database_name> -u <dbm_user>,<password> db_drop`
5. Call the uninstall program with your chosen options:
  - If you want to uninstall all SAP DB software components, specify the option `-all`; otherwise, specify your chosen component with the option `-package`.
  - If there is more than one software package with the same name on your server, specify a unique package with the option `-package_dir`. You can determine the directory of a software package (`<package_directory>`) with the option `-l|-list`.
  - If you want to uninstall a software component that is still needed by another component, specify the option `-autoresolve`. The system then uninstalls all those software components that are dependent on the specified component. Otherwise, the uninstall process terminates with the following message:  
cannot delete package \"<package>\" (<package\_directory>) - other package (s) are dependent

```
sdbuninst -all | -package <package_name>[-package_dir
<package_directory>] [-autoresolve]
```
6. Start the uninstallation by entering `y`.  
  
The specified SAP DB software components are uninstalled. At the same time, the system checks the dependencies between the components.  
  
If you have not specified a unique software package, the system shows you a list of packages with the same name. Choose a package ID and confirm.  
  
You see a message about the successful completion of the uninstallation.

## Result

The specified SAP DB software component is uninstalled, along with all dependent components.



## Updating Database Instances and Their Software

### Implementation Considerations

You update [database instances](#) from one version to another, and update their database software at the same time. The following information refers to this procedure as an upgrade.

The strategy you choose depends on the [database instance type](#) and the source and target version. For help on choosing a suitable upgrade strategy, see [Selection of the Upgrade Strategy \[Page 21\]](#).



Each time you update database instances, we recommend that you watch out for any errors. Make sure that you have made complete backups of all data in the relevant database instances, and also have the database software of the source version. Only then can you return to the source version, if necessary, and avoid long periods of system downtime.

Before you start, make sure that you have taken precautions against the most common sources of errors in the upgrade ([Troubleshooting \[Page 31\]](#)).

Whenever possible, use the SDBUPD program to perform the upgrade. This program gives you comprehensive support for an upgrade without problems. However, you can only use it if you fulfill certain prerequisites. Otherwise, you must use a different upgrade strategy.

### Prerequisites for Using SDBUPD

SAP customers can use the program SDBUPD for upgrading **database instances in SAP systems**. The SDBUPD program makes all required checks.

You can also use this program to upgrade database instance that are **not linked to SAP systems**. To do this, however, you must fulfill the following prerequisites:

- The program SDBINST was used to install the existing software.
- Each of the existing database instances refers to a separate software installation.

### Conventions

[Variables](#), supported [Operating System Platforms](#)



## Selection of the Upgrade Strategy

### Procedure

Select an upgrade strategy that is appropriate to the [instance type](#) of the [database instance](#), and the source and target versions of the database software. Proceed as described for your chosen upgrade strategy.



If your database instance fulfills the necessary prerequisites, we recommend that you use the program SDBUPD, since an upgrade with this program removes the need for most of the user interaction, and is quicker and safer.

However, the current implementation of SDBUPD will migrate an ASCII Database to a Unicode Database if the upgrade target version is 7.4. This does not change your data. It just implies that UNICODE columns are possible now and that the catalog is stored in UNICODE. Since a UNICODE database

changes the behaviour of some clients, this feature will be made optional in the next software version.

### Update Strategies for SAP DB OLTP Database Instances

	<b>Target Version 7.3</b>
<b>Source Version 7.3</b>	<a href="#">Patch Installation with SDBUPD [Page 22]</a> or* <a href="#">Patch Installation with SDBINST [Page 24]</a>

	<b>Target Version 7.4.03</b>
<b>Source Version from 7.3.00 ≥ Build 025</b>	<a href="#">In-Place Migration with SDBUPD [Page 25]</a> or* <a href="#">In-Place Migration with SDBINST [Page 26]</a>
<b>Start version 7.4.03</b>	<a href="#">Patch Installation with SDBUPD [Page 22]</a> or* <a href="#">Patch Installation with SDBINST [Page 24]</a>

\* Use SDBUPD if your database instance is part of an SAP system.

In special cases, you can use SDBUPD even if the database instance is not part of an SAP system. See *Prerequisites for Using SDBUPD* under [Updating Database Instances and Their Software \[Page 21\]](#).

### Update Strategies for liveCache Database Instances

	<b>Target Version 7.4.02/30A</b>	<b>Target Version 7.4.02/310</b>	<b>Target Version 7.4.03/400</b>
<b>Source Version 7.2.05/30A</b>	<a href="#">Upgrade with Backup and Recovery [Page 28]</a>	<a href="#">Upgrade with APO Extract/Load [Page 30]</a>	not possible
<b>Source Version 7.4.02/30A</b>	<a href="#">Patch Installation with SDBUPD [Page 22]</a> or*	<a href="#">Upgrade with APO Extract/Load [Page 30]</a>	<a href="#">Upgrade with APO Extract/Load [Page 30]</a>
<b>Source Version 7.4.02/310</b>	not possible	<a href="#">Patch Installation with SDBUPD [Page 22]</a> or*	<a href="#">Upgrade with APO Extract/Load [Page 30]</a>
<b>Source Version 7.4.03/400</b>	not possible	not possible	<a href="#">Patch Installation with SDBUPD [Page 22]</a> or*



## Patch Installation with SDBUPD

### Use

You are using the program SDBUPD to upgrade the [database instance](#). This switches the SAP DB software only.

You can use this procedure only if the build number only has changed between the source and target version ([SAP DB Version Notation](#)). In this case, the software does not have a significant amount of new functions that could cause incompatibilities between the existing data and the new software.

You use this upgrade strategy if your database instance is part of an SAP system ([Selection of the Upgrade Strategy \[Page 21\]](#)).

You can use this procedure even if the database instance is **not** combined with an SAP system. To do this, however, you must fulfill the following prerequisites:

- You used SDBINST to install the existing software (with a `tgz` package or a `zip` file, and not with an `rpm` package)
- Each database instances refers to a separate software installation.



There can not be any remote communication between the database instances and applications during the upgrade, since the V Server software ([X Server](#) service) may need to be switched, depending on the source and target version of the upgrade. Therefore, stop all database instances, so that SDBUPD can stop any X Servers that are still running. Alternatively, you can stop the X Server yourself, before the upgrade.

## Prerequisites



Before you start the upgrade, make sure that you have up-to-date [log backups](#) and/or [data backups](#) for recovering the database instances in the event of errors.

The database parameters of the database instance you want to update have not changed since the last [restart](#).

- The database instance is the only instance that refers to the installation path of the software you want to update.
- The database instances is in one of the three defined [operational states](#).
- You have stopped all database instances, or, alternatively, the X Server.

## Procedure

Start SDBUPD with the following command:

UNIX, Linux:	Microsoft Windows:
<code>./SDBUPD -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>	<code>sdbupd -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>

SDBUPD performs the upgrade, and displays a success message if the upgrade is completed successfully. It then flags the installation as complete.

## Result

The database instance and its software have been updated.

If you have updated a [liveCache](#) database instance, it is now in the operational state OFFLINE.

If you have updated a [SAP DB OLTP](#) database instance, it is now in the operational state ONLINE.



## Patch Installation with SDBINST and Follow-Up Actions

Use the program SDBINST to upgrade [database instances](#). This switches the SAP DB software only. You must then perform the necessary follow-up actions in the command line with the [Database Manager CLI](#).

This upgrade strategy is valid for database instances of the type [SAP DB OLTP](#) only ([Selection of the Upgrade Strategy \[Page 21\]](#)). It is valid for all supported [operating system platforms](#).

### Prerequisites



Before you start the upgrade, make sure that you have up-to-date [log backups](#) and/or [data backups](#) for recovering the database instances in the event of errors.

- All database instances that you want to update refer to the same software installation.

### Procedure

1. Stop the X Server.

**x\_server stop**

2. On UNIX/Linux, stop the database instance **that you want to update**.  
On Microsoft Windows, stop **all** database instances.

To do this, execute the following commands for logging on to the Database Manager CLI, stopping the database instance, and exiting the Database Manager CLI for each database instance:

```
dbmcli -d <database_name> -u <dbm_user>, <password> db_offline
exit | release | quit | bye
```

3. Start SDBINST with the options for installing the [installation profile \[Page 35\]](#) Server. Make sure that you enter the correct <dependent\_path> of each database instance that you want to update.

UNIX/Linux:	Microsoft Windows:
<pre>./SDBINST [-b] -profile server - indep_data &lt;independent_data_path&gt; - indep_prog &lt;independent_program_path&gt; -depend &lt;dependent_path&gt; -o &lt;owner&gt; -g &lt;group&gt;</pre>	<pre>sdbinst [-b] -profile server - indep_data &lt;independent_data_path&gt; - indep_prog &lt;independent_program_path&gt; -depend &lt;dependent_path&gt;</pre>

4. Start the X Server with the following command:

**x\_server start**

5. Log on to each of the database instances in sequence as the DBM user, and perform the specified actions:

	Procedure	Command
1.	Log on to the Database Manager CLI with the data of the database instance that you want to update.	dbmcli -d <database_name> -u <dbm_user>, <password>



2.	Update the software version of the database instance.	<code>db_register</code>
3.	Update the parameters of the database instance.	<code>param_checkall</code>
4.	Switch the database instance to the operational state WARM (up to Version 7.3) or ONLINE (from Version 7.4).	<code>db_online</code>   <code>db_warm</code>
5.	Load the system tables again. You see a message about the successful completion of the procedure.	<code>load_systab</code>
6.	Exit the Database Manager CLI.	<code>exit</code>   <code>release</code>   <code>quit</code>   <code>bye</code>

## Result

The OLTP database instance and its software has been updated.

It is in the operational state ONLINE.



## In-Place Migration with SDBUPD

### Use

You are using the program SDBUPD to upgrade the [database instance](#).

The source version of the database software is Version 7.3 Build  $\geq$  025, the target version is  $\geq$  7.4.03 ([Selection of the Upgrade Strategy \[Page 21\]](#)).

Use this procedure if the database instance is combined with an SAP system.

This upgrade strategy is valid for database instances of the type [SAP DB OLTP](#) only. It is valid for all supported [operating system platforms](#).




There can not be any remote communication between the database instances and applications during the upgrade, since the V Server software ([X Server](#) service) may need to be switched, depending on the source and target version of the upgrade. Therefore, stop all database instances, so that SDBUPD can stop any X Servers that are still running. Alternatively, you can stop the X Server yourself, before the upgrade.

### Prerequisites

- The database instance you want to update is part of an SAP system.
- The database instance is in the [operational state](#) ONLINE.
- The database instance is the only instance that refers to the installation path of the software version you want to update.
- The [database parameters](#) of the database instance you want to upgrade have not changed since the last restart.

### Procedure

	Description	Command
--	-------------	---------

5.	Call the Database Manager CLI as the DBM user and connect to the database instance.	<code>dbmcli -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>
6.	Switch the database instance to the operational state OFFLINE.	<code>db_offline</code>
7.	Switch the database instance to the operational state COLD (up to Version 7.3) or ADMIN (from Version 7.4).	<code>db_cold   db_admin</code>
8.	If you have a newer data backup, make an incremental data backup and a log backup. Otherwise, make a complete data backup ( <a href="#">Backing Up the Database Instance</a> ).	<code>backup_start &lt;medium&gt; [&lt;type&gt;] [AUTOIGNORE]</code>
9.	Exit the Database Manager CLI.	<code>exit   release   quit   bye</code>
10.	Stop the X Server.	<code>x_server stop</code>
11.	<p>Start SDBUPD.</p> <p>SDBUPD performs the upgrade, and displays a success message if completed successfully. It then flags the installation as complete.</p>  <p>The execution of this command can take a long time. Never terminate it. If you do, you risk losing all your data. Your only option in this event is to use data backups to go back to the corresponding state of the database instance.</p>	<p>UNIX/Linux:</p> <pre>./SDBUPD -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</pre> <p>Microsoft Windows:</p> <pre>sdbupd -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</pre>

## Result

The OLTP database instance and its software has been updated.

The database instance is in the [operational state](#) ONLINE.



## In-Place Migration with SDBINST and Follow-Up Actions

### Use

You are using the program SDBINST to upgrade [database instances](#). First install the new version of the SAP DB software. Then migrate the database instance(s).

The source version of the database software is Version 7.3.00 Build  $\geq$  025, the target version is  $\geq$  7.4.03 ([Selection of the Upgrade Strategy \[Page 21\]](#)).

Use this procedure for database systems that are not combined with an SAP system, particularly if multiple database instances refer to the same installation path.

This upgrade strategy is valid for database instances of the type [SAP DB OLTP](#) only. It is valid for all supported [operating system platforms](#).

## Prerequisites

- The database instance you want to update is **not** part of an SAP system.
- You have a [backup medium](#) for a [complete data backup](#).

## Procedure



To guarantee the security of your data if any errors occur in the migration, we recommend that you make a [complete data backup](#) of the instance in step 6, in the [operational state COLD](#). This causes downtime because the database instance has to stop. However, the resulting data backup can be used to [recover the database instance](#) in both Version 7.3 and Version 7.4.

Alternatively, you can make a complete data backup in the operational state WARM before you start the migration. However, you can use this backup to recover a Version 7.3 database instance only, and is not a completely valid alternative to a data backup in the operational state COLD.

1. [Install \[Page 6\]](#) Version 7.4 of the software with SDBINST (zip file or tgz package) in the installation path `<dependent_path><7.4>` **in parallel** with Version 7.3.


or


Install Version 7.4 with the Red Hat Package Manager (rpm package).



If you use the Red Hat Package Manager to install SAP DB Version 7.3 on your server, you will then be able to use only this program for any other installations. SDBINST installations are no longer possible.

2. Perform the following migration steps for each of your database instances with Version 7.3.

	Procedure	Command
1.	Call the Database Manager CLI as the DBM user and connect to the database instance that you want to migrate.	<code>dbmcli -d &lt;database_name&gt; -u &lt;dbm_user&gt;, &lt;password&gt;</code>
2.	Stop the database instance correctly   Use the command <code>db_offline</code> and not <code>db_stop</code> . This is the only way of making sure you can restart the database instance if there are errors.	<code>db_offline</code>
3.	Switch the database instance to the operational state COLD.	<code>db_cold</code>
4.	Execute the command that prepares the migration.	<code>util_execute migrate</code>
5.	Open a utility session.	<code>util_connect</code>
6.	Make a complete data backup in the operational state COLD.	<code>backup_start &lt;medium&gt;</code>
7.	Exit the utility session.	<code>util_release</code>

8.	Switch the database instance to the operational state OFFLINE.	<code>db_offline</code>
9.	<b>UNIX:</b> Assign the database instance to Version 7.4 of the software.  <b>Microsoft Windows:</b> Delete the registration of the database instance. Use Version 7.4 of the DBMCLI software to create the new database instance.	UNIX: <code>db_register -R &lt;dependent_path&gt;&lt;7.4&gt;</code>  Microsoft Windows: <code>db_drop WITHOUTFILES</code>
10.	Exit the Database Manager CLI.	<code>exit   release   quit   bye</code>
11.	Log on to the Database Manager CLI again. Previously, you communicated with Version 7.3 of the DBM server. You now connect to Version 7.4.	<code>dbmcli -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>
12.	Start the migration of the database parameters.	<code>param_checkall</code>
13.	Switch the database instance to the operational state ADMIN.	<code>db_admin</code>
14.	Execute the migration command.    The execution of this command may take some time, depending on the size of the database instance. Do not terminate it.	<code>util_execute migrate database</code>
15.	Switch the database instance to the operational state OFFLINE.	<code>db_offline</code>
16.	Start the database instance again. The database catalog migrates from 7.3 to 7.4.	<code>db_online</code>
17.	Load the system tables again.  You see a message about the successful completion of the procedure.	<code>load_systab</code>

## Result

You have migrated your database instance from Version 7.3 of the software to Version 7.4. It is in the operational state ONLINE.



## Upgrade with Backup and Recovery

### Use

You are using the program SDBUPD to upgrade the [database instance](#). First make a [complete data backup](#) for the database instance that you want to update. Then use SDBUPD to switch the software.

You use this upgrade strategy if your database instance is part of an SAP system. This strategy is currently valid only for the instance type [liveCache](#) in the SAP APO system, when you are changing the version of the database software without changing the APO release ([Selection of the Upgrade Strategy \[Page 21\]](#)).

It is valid for all supported [operating system platforms](#).



There can not be any remote communication between the database instances and applications during the upgrade, since the V Server software ([X Server](#) service) may need to be switched, depending on the source and target version of the upgrade. Therefore, stop all database instances, so that SDBUPD can stop any X Servers that are still running. Alternatively, you can stop the X Server yourself, before the upgrade.

## Prerequisites

- You have stopped all database instances, or, alternatively, the X Server.
- The [database parameters](#) of the database instance you want to upgrade have not changed since the last [restart](#).
- You have made a complete data backup in the [operational state](#) COLD (up to Version 7.3) or ADMIN (from Version 7.4), and have not switched the database instance to the operational state ONLINE.

## Procedure

1. Start SDBUPD with the following command:

UNIX, Linux:	Microsoft Windows:
<code>./SDBUPD -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>	<code>sdbupd -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>

SDBUPD updates the software. You see a message about the successful installation of the software, and are prompted to recover the database instance from the backup.

2. Log on to the Database Manager CLI with the data from the backed up database instance, and start the [database instance recovery](#).
3. Exit the Database Manager CLI with the command `exit | release | quit | bye`.
4. Restart SDBUPD with the following command:

UNIX, Linux:	Microsoft Windows:
<code>./SDBUPD -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>	<code>sdbupd -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>

SDBUPD loads the system tables, and displays a success message if completed successfully. It then flags the installation as complete.

5. Now start liveCache, so that the system can update it ([Starting liveCache](#)).

## Result

The liveCache database instance in the SAP APO system and its software have been upgraded.

liveCache is in the operational state ONLINE.



## Upgrade with APO Extract/Load

### Use

You use the SDBUPD program for an upgrade with APO Extract/Load. You must first back up the transaction data of the application system from the liveCache database instance to the APO database, and then switch the software ([Selection of the Upgrade Strategy \[Page 21\]](#)).

This procedure is currently valid only for the instance type [liveCache](#) in the SAP APO system. It is valid for all [operating system platforms](#) supported by SAP DB.



There can not be any remote communication between the [database instances](#) and applications during the upgrade, since the V Server software ([X Server](#) service) may need to be switched, depending on the source and target version of the upgrade. Therefore, stop all database instances, so that SDBUPD can stop any X Servers that are still running. Alternatively, you can stop the X Server yourself, before the upgrade.

### Prerequisites

- You have backed up the liveCache transactions to the APO database.



SAP customers can find information on this in the Service Marketplace under <http://service.sap.com/instguides> → *Installation* → *Installation & Upgrade Guides* → *mySAP SCM* → *Using SAP APO 3.1SR1...* → *Upgrade Information* → *Upgrade for SAP APO 3.1: SAP liveCache 7.4* → *Upgrade Preparations*.

- You have stopped all database instances, and possibly the X Server as well.
- The [database parameters](#) of the database instance you want to upgrade have not changed since the last [restart](#).
- The database instance can be in any [operational state](#).

### Procedure

- Start SDBUPD with the following command:

UNIX, Linux:	Microsoft Windows:
<code>./SDBUPD -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>	<code>sdbupd -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>

- SDBUPD performs the upgrade, and displays a success message if completed successfully. You are prompted to start liveCache.
- Start liveCache ([Starting liveCache](#)).
- Recover the data from the APO system to liveCache (see the link to *Upgrade for SAP APO 3.1: SAP liveCache 7.4.*), above.

### Result

The liveCache database instance in the SAP APO system and its software have been upgraded.

liveCache is in the operational state ONLINE.



## Troubleshooting

If, when you install or update your database software, or when you update database instances and their software, you experience errors and the program terminates, you can use the available programs, data backups, and source version software to return to the original version. This gives you time for troubleshooting, and keeps downtime as short as possible.



**Never** delete installed files from the file system manually. Use only the program SDBUNINST for uninstalling software. Otherwise, unexpected problems may occur in your next installation or upgrade.

[Errors in the Execution of the Program SDBINST \[Page 31\]](#)

[Errors in the Execution of the Program SDBUPD \[Page 31\]](#)



## Errors in the Execution of the Program SDBINST

If errors occur when you execute the program SDBINST, the program terminates with a message about the cause of the error.

### Frequent Causes of Errors

1. File of the software you want to update are still being used.
  - i Administration sessions are still running, which means that the Database Manager CLI is still active.
  - i Applications that use SAP DB Runtime or SAP DB Scripting Interfaces are still running.
2. There is not enough disk space for the new software.
3. You have attempted to update a 64 bit database kernel with software for a 32 bit kernel. This is not possible.
4. You are attempting to update the software with SDBINST. However, you are ignoring the dependencies between [SAP DB software component \[Page 36\]](#) installations and versions.

### User Action

Remove the cause of the error and execute the program again.



## Errors in the Execution of the Program SDBUPD

If errors occur when you execute the program SDBUPD, the program terminates with a message about the cause of the error.

### Frequent Causes of Errors

1. An unexpected error occurred when you executed SDBUPD.
2. You are attempting to use SDBUPD to switch to a software version that is lower than your current version (a downgrade). Examples of this situation:
  - i You have selected the wrong software version by mistake.

- ┆ The upgrade of the database instance terminated with an error. You then tried to use SDBUPD to return to the original software version.
- ┆ The database instance upgrade was successful, however, you want to return to a lower software version for other reasons.

You cannot use SDBUPD to downgrade software. If you want to use SDBUPD, the new software must have at least a higher build number ([SAP DB Version Notation](#)).

## User Action

Proceed as follows in each case.

[Case 1: \[Page 32\]](#)

No database instances exist that refer to a higher software version.

[Case 2: \[Page 32\]](#)

Database instances exist that refer to a higher software version. You want to downgrade the software that is used exclusively by the database instance (Dependent Software).

[Case 3: \[Page 34\]](#)

Database instances exist that refer to a higher software version. You want to downgrade the software that is **not** used by the database instance, or whose version is not relevant for the database instance (Independent Software).



## Case 1: No database instances exist yet

### Use

No database instances exist that refer to a higher software version.

### Procedure

Either uninstall the entire SAP DB software with SDBUNINST

or

uninstall only those [SAP DB software components \[Page 36\]](#) that you want to install in a lower version. Take into account the dependencies between the components.

[Uninstalling the SAP DB Software \[Page 19\]](#)



## Case 2: Downgrade for Dependent Software

### Use

Database instances exist that refer to a higher software version. You want to downgrade the software that is used exclusively by the database instance (Dependent Software).



If you want to use this procedure **in SAP systems**, **do not** accept the system defaults. Specify the following settings instead:

<group>	sapsys
<owner>	For SAP DB OLTP database instances: <b>sqdsid</b> For liveCache database instances: <b>sidadm</b>



<independent_data_path>	UNIX/Linux: /sapdb/data Microsoft Windows: <drive>:\sapdb\data
<independent_program_path>	UNIX/Linux: /sapdb/programs Microsoft Windows: <drive>:\sapdb\programs
<dependent_path>	UNIX/Linux: /sapdb/<SID>/db Microsoft Windows: <drive>:\sapdb\<SID>\db

## Procedure

Delete the existing database instances before a downgrade.

- If you want to perform the downgrade **at build level** only, there will be no incompatibilities between the database instances of the higher version and the software of the lower version you want to install. Proceed as follows for each database instance:

	Procedure	Command
1.	Call the Database Manager CLI as the DBM user and connect to the database instance.	<code>dbmcli -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>
2.	Delete the registration of the database instance.	<code>db_drop WITHOUTFILES</code>
3.	Exit the Database Manager CLI.	<code>exit   release   quit   bye</code>
4.	Uninstall at least the database kernel and the chosen SAP DB software component(s) with the higher version.	<code>sdbuninst -package "Database Kernel" [, &lt;package_name2&gt;...]</code>
5.	Install your chosen installation profile with the lower version (for SAP DB-OLTP database instances at least <i>Server</i> , for liveCache database instances at least <i>APO liveCache</i> ).	<code>sdbinst -profile Server   "APO LiveCache" [, &lt;inst_profile2&gt;...]</code>
6.	Register the database instance again. Enter the name and DBM user of the old database instance, and the path of the newly installed lower software version.	Unix/Linux: <code>&lt;dependent_path&gt;\bin \dbmcli -s -R &lt;dependent_path&gt; db_create &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>  Microsoft Windows: <code>"&lt;dependent_path&gt;\pgm \dbmcli" -s -R "&lt;dependent_path&gt;" db_create &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>

- If the downgrade is combined with a **change of version** (minor or major release, see also: [SAP DB Version Notation](#)) of the database software, proceed as follows:

	Procedure	Command
	Call the Database Manager CLI as the DBM user and connect to the database instance.	<code>dbmcli -d &lt;database_name&gt; -u &lt;dbm_user&gt;,&lt;password&gt;</code>

1.	Delete the database instance	<code>db_drop</code>
2.	Exit the Database Manager CLI.	<code>exit   release   quit   bye</code>
3.	Uninstall at least the database kernel and the chosen SAP DB software component(s) with the higher version.	<code>sdbuninst -package "Database Kernel" [, &lt;package_name2&gt;...]</code>
4.	Install your chosen installation profile with the lower version (for SAP DB-OLTP database instances at least <i>Server</i> , for liveCache database instances at least <i>APO liveCache</i> ).	<code>sdbinst -profile Server   "APO LiveCache" [, &lt;inst_profile2&gt;...]</code>
5.	Start the Database Manager GUI. Use the Database Wizard to install a new database instance by using the parameter file from a backup.	Choose <i>Instance</i> → <i>Install</i> . Follow the instructions for <a href="#">creating or initializing a database instance</a> . For the new database instance, specify the database administrator that is saved in the backup parameter file.
6.	Exit the Database Manager GUI.	Choose <i>File</i> → <i>Exit</i> .



## Case 3: Downgrade for Independent Software

### Use

Database instances exist that refer to a higher software version. You want to downgrade the software that is **not** used by the database instance, or whose version is not relevant for the database instance (Independent Software).



If you want to use this procedure in **SAP systems**, do not accept the system defaults. Specify the following settings instead:

<group>	sapsys
<owner>	For SAP DB OLTP database instances: <b>sqdsid</b> For liveCache database instances: <b>sidadm</b>
<independent_data_path>	UNIX/Linux: /sapdb/data Microsoft Windows: <drive>:\sapdb\data
<independent_program_path>	UNIX/Linux: /sapdb/programs Microsoft Windows: <drive>:\sapdb\programs
<dependent_path>	UNIX/Linux: /sapdb/<SIS>/db Microsoft Windows: <drive>:\sapdb\<SID>\db

### Procedure

	Action	Command
1.	Uninstall at least the database kernel and the chosen SAP DB software component(s) with the higher version.	<code>sdbuninst -package "Database Kernel" [, &lt;package_name2&gt;...]</code>

2.	Install your chosen installation profile with the lower version (for SAP DB-OLTP database instances at least <i>Server</i> , for liveCache database instances at least <i>APO liveCache</i> ).	<code>sdbinst -profile Server   "APO LiveCache" [, &lt;inst_profile2&gt;...]</code>
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## Detailed Information

[Installation Profiles \[Page 35\]](#)

[SAP DB Software Components \[Page 36\]](#)

[Logging \[Page 37\]](#)

[Overview of Options for the Program SDBINST \[Page 38\]](#)

[Overview of Options for the Program SDBUNINST \[Page 39\]](#)

[Overview of Options for the Program SDBUPD \[Page 39\]](#)



## Installation Profiles

Installation profiles are different combinations of individual SAP DB [software components \[Page 36\]](#), which meet different requirements. An installation profile provides you with a fully functioning software installation, regardless of which profile you choose.

If you install individual SAP DB software components (parts of installation profiles), you must take into account the dependencies between the components to guarantee that the software installation can function.

**Choose from the following installation profiles:**

Name	Included SAP Software Components	Installation/Update of
<i>all</i>	All SAP software components	Complete SAP DB software package
<i>Server</i>	Base, multiple PCR <version>, server utilities, ODBC, DB Analyzer, database kernel	Server software and client software of the OLTP database system
<i>Web Tools</i>	Base, ODBC, Web Tools	SAP DB Web Tools
<i>DB Analyzer</i>	Base, ODBC (for MS Windows only), DB Analyzer	Database Analyzer
<i>Runtime for SAP AS</i>	Base, multiple PCR <version>	Client software for the SAP application server
<i>APO LiveCache</i>	For liveCache in the SAP APO system only  Base, multiple PCR <version>, Server Utilities, ODBC (MS Windows only), DB Analyzer, Database Kernel, APO LC APPS or APO COM (up to APO Version 4.0)	Server software and client software of the liveCache database system

<i>C Precompiler</i>	Base, multiple PCR <version>, CPC Base, CPC SDK <version>	Software required for developing precompiler applications
<i>Script Interface</i>	Base, Perl Interface, Python Interface	Runtimes for applications that use SAP DB Script Interfaces



You must place any names of software components that contain blanks in double quotation marks.



## SAP DB Software Components

### Use

You are installing installation packages that contain only individual SAP DB software components. You can do this to install missing components without having to update components that you do not need.

The installation of software components is more complex than the installation of [installation profiles \[Page 35\]](#), and demands that the user understands and takes into account the dependencies that exist between the content or versions of the software.

Since this installation is not interactive and can run in the background only, you must in advance determine any other components you need to install first, and in which order. The installation program terminates the installation as soon as it recognizes that a dependency has been ignored. For this reason, use this installation type in special cases only.

**The SAP DB software is divided into the following components:**

Name	Description
<i>Base</i>	Programs for registering the installation, uninstallation tool, InstallRegistryViewer, and programs that the SAP application server needs to access the SAP DB Database System
<i>PCR&lt;version&gt;</i>	SAP DB Precompiler Runtime Package Contains runtime libraries for applications created with the SAP DB C/C++ Precompiler for Embedded SQL Can exist in multiple versions in the local installation directory
<i>Server Utilities</i>	Tools for administering the database kernel
<i>Database Kernel</i>	Database kernel with runtime environment
<i>CPC Base</i>	C++ Precompiler base (call programs for the precompiler)
<i>CPC SDK &lt;version&gt;</i>	C++ Precompiler
<i>ODBC</i>	SAP DB ODBC driver
<i>DB Analyzer</i>	Database Analyzer: Tool for analyzing database performance
<i>Web Tools</i>	Web-based database tools
<i>Python Interface</i>	Python interface
<i>Perl Interface</i>	Perl interface
<i>APO LC APPS (from APO Version 4.0) or APO COM</i>	For <a href="#">liveCache</a> in the SAP APO system only: Libraries with APO liveCache routines



You must place any names of software components that contain blanks in double quotation marks.

## Dependencies

The following dependencies exist between SAP DB software components:

*Base* → *PCR* <version>

*Base* → *Server Utilities* → *Database Kernel* → *APO LC APPS* | *APO COM*

*Base* [→ *ODBC*]\* → *DB Analyzer*

*Base* → *ODBC* → *Web Tools*

*Base* → *CPC Base*

*Base* → *CPC Base* → *CPC SDK* <version>

*Base* → *Perl*

*Base* → *Python*

\* Required for DB Analyzer on Microsoft Windows only

## Explanation of Dependencies

- The *Base* software component is independent of all other packages.
- *PCR* <version> cannot be installed until *Base* has been installed.
- *Server Utilities* cannot be installed until *Base* has been installed.
  - *Database Kernel* cannot be installed until *Server Utilities* has been installed.
  - *APO LC APPS* or *APO COM* cannot be installed until *Database Kernel* has been installed
- You can only install the Database Analyzer after you have installed *Base* (on UNIX) or *Base* and *ODBC* (on Microsoft Windows).
- *ODBC* cannot be installed until *Base* has been installed.
  - *Web Tools* cannot be installed until *ODBC* has been installed.
- *CPC Bases* cannot be installed until *Base* has been installed.
  - *CPC SDK* <version> cannot be installed until *CPC Base* has been installed.
- *Perl* cannot be installed until *Base* has been installed.
- *Python* cannot be installed until *Base* has been installed.



## Logging

### Use

All [installation and update \[Page 6\]](#) steps and the steps involved in [updating database instances and their software \[Page 21\]](#) are saved in log files.

### Conventions

#### [Variables](#)

#### Location of Log Files for Installations/Updates

- UNIX/Linux (tgz package):  
 <independent\_data\_path>/wrk/SAPDB<profile>\_install-<date>-<time>.log

- Windows:  
`<independent_data_path>\wrk\SAPDB<profile>_install-<date>--<time>.log`

If the `<independent_data_path>` directory is not known when the installation process is terminated, the log will be created in the current directory.



If you have installed or updated individual SAP DB software components, the steps are logged in the file

`SAPDBSoftware_install-<date>--<time>.log`

### Location of the Log File for Updates of Database Instances and Their Software (Upgrades)

- UNIX/Linux (tgz package):  
`<independent_data_path>/wrk/SAPDBUpgrade_install-<date>--<time>.log`
- Windows:  
`<independent_data_path>\wrk\SAPDBUpgrade_install-<date>--<time>.log`



## Overview of Options for the Program SDBINST

You can specify the following options when you use the program SDBINST to install or update SAP DB software:


Option	Description
<code>-b   -batch</code>	Use installation program in the background  If you specify this option, the installation program terminates with an error if any information is missing.  If you do <b>not</b> specify this option, the program stops if any information is missing, and prompts you to act.
<code>-profile</code>	<a href="#">Installation profile [Page 35]</a>  You must place any names that contain blanks in double quotation marks.
<code>-package</code>	Logical name of the <a href="#">SAP DB software component [Page 36]</a> ( <b>not</b> file name)  You must place any names that contain blanks in double quotation marks.
<code>-indep_data</code>	Can be specified for a new installation only. Otherwise, the system ignores it. You can change this path only after completely uninstalling the SAP DB software. <b>See also:</b> <a href="#">Variables</a>
<code>-indep_prog</code>	Can be specified for a new installation only. Otherwise, the system ignores it. You can change this path only after completely uninstalling the SAP DB software. <b>See also:</b> <a href="#">Variables</a>

<b>-depend</b>	Can be specified for a new installation only, and only for the installation profiles <i>all</i> , <i>Server</i> and <i>APO LiveCache</i> and the SAP DB software components <i>Database Kernel</i> and <i>APO LC APPS</i> (from APO Version 4) or <i>APO COM</i> . Otherwise, the system ignores it.  <b>See also:</b> <a href="#">Variables</a>
<b>-o   -owner</b>	Software owner (UNIX)
<b>-g   -group</b>	Software group (UNIX)
<b>-h   -help</b>	List of options and descriptions
<b>-v   -version</b>	Version number of the SDBINST installation program
<b>-l   -list</b>	Displays all possible installation profiles and SAP DB software components



## Overview of Options for the Program SDBUNINST

You can specify the following options when you use the program SDBUNINST to uninstall SAP DB software:

Option	Description
<b>-all</b>	Uninstalls all software registered for SAP DB
<b>-package &lt;package&gt;</b>	Logical name of the <a href="#">SAP DB software component [Page 36]</a> ( <b>not</b> file name) that you want to uninstall
<b>-package_dir &lt;package_directory&gt;</b>	Directory of the specified software component, if there are multiple software packages with the same name
<b>-autoresolve</b>	As well as the specified SAP DB software component, the system also uninstalls all dependent components.   <b>-package ODBC -autoresolve</b>  On Microsoft Windows, the component <i>ODBC</i> and its dependent component <i>Web Tools</i> are uninstalled.
<b>-h   -help</b>	List of options and descriptions
<b>-v   -version</b>	Version number of the uninstallation program SDBUNINST
<b>-l   -list</b>	Displays all possible SAP DB software components



## Overview of Options for the Program SDBUPD

You can specify the following options when you use the program SDBUPD to upgrade SAP DB database instances from Version 7.3 to Version 7.4:

Option	Description
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<b>-b   -batch</b>	Use SDBUPD in the background  If you specify this option, the installation program terminates with an error if any information is missing.  If you do <b>not</b> specify this option, the program stops if any information is missing, and prompts you to act.
<b>-d &lt;database_name&gt;</b>	Name of the <a href="#">database instance</a>
<b>-u &lt;dbm_user&gt;,&lt;password&gt;</b>	Name and password of the <a href="#">DBM operator</a>
<b>-h   -help</b>	List of options and descriptions
<b>-v   -version</b>	Version number of SDBUPD
<b>-l   -list</b>	Displays all possible <a href="#">installation profiles [Page 35]</a> and <a href="#">SAP DB software components [Page 36]</a>