

PostgreSQL 16 Administration Basic Course



Student's Guide

About This Document

This is the Student's Guide for the PostgreSQL 16 Administration Basic Course. It is intended for students taking the course with or without an instructor.

The guide includes three main sections.

The first section, Setting Up the Environment, explains how to get the student's workplace up and running, lists the technical requirements for the virtual machines, and gives important information on how to use the virtualization system.

The second section, Course Handouts, lists the materials provided with the course, explains where to find them and how to use them to the best effect. Here, the information about the formats of these materials and the notations used in them is provided.

The third section, Self-Study, gives a few helpful tips and directions for those studying independently.

Good luck, and enjoy your learning journey!

We'll be happy to get your feedback at edu@postgrespro.ru.

Setting Up the Environment

If you take the course at a training center, your workspace will be prepared for you.

In the case of self-study, you have to install a virtualization platform (choose VirtualBox 6.1 or higher) and then download and import a virtual machine: <https://edu.postgrespro.com/16/DBA1-16-en.ova>. For ARM64-based systems (e.g., Apple Silicon MacBooks), ensure VirtualBox 7.1 or higher is installed, then download the compatible VM image: <https://edu.postgrespro.com/16/DBA1-16-en-arm64.ova>. The virtual machine at this location is kept up-to-date with any changes in the training course.

Note that you can only install the VM on a computer with a 64-bit operating system.

The VM runs 64-bit Xubuntu 24.04 as its guest OS, which is already configured for taking the course. You will need at least 1 GB of RAM.

You will be logged in as *student* user (password: student) automatically.

The Firefox browser in the VM environment is set up to display PostgreSQL documentation, which is stored locally. You do not have to be online to complete the course.

To manage files, you can use both the command line (`ls`, `pwd`, `cd`, ...) and GUI tools, such as `mc` or Thunar (built-in file manager). To edit files, you can choose from several pre-installed editors: `vim`, `nano`, `gedit`, `mousepad`.

Course Handouts

The latest version of course handouts is available at: <https://edu.postgrespro.com/16/DBA1-handouts-16-en.zip>

You can download these materials into the VM by clicking the Get DBA1 handouts icon on the Desktop or running the `get_handouts.sh` script in the *student* user's home directory. The files will be downloaded into the `dba1` subdirectory.

Key changes and new features in PostgreSQL 14-16 covered in this course are summarized here: https://edu.postgrespro.com/16/dba1-16-en/dba1_new_features.pdf

Older versions of the materials can be found at: <https://edu.postgrespro.com/16/>.

The main course handouts are available in two formats (only the layout is different, the content is absolutely the same):

- `html` is good for browsing and copying code snippets;
- `pdf` is more convenient for printing.

These handouts include lesson slides, demos, and keys to practice tasks.

Apart from the main handouts, the course also includes some reference materials:

- A chart of the main tables of the system catalog, with corresponding `psql` commands (`catalogs.pdf`);
- A list of basic Unix commands (`unix_commands.pdf`).

All commands in demonstrations and answer keys start with a prompt. We use the following conventions:

- `user$`

A prompt that ends with a dollar sign denotes a Unix command; it contains the name of the OS user that runs this command. For example, `student$` means that the command has to be executed by the *student* user.

To run a command on behalf of a different user (such as *postgres*), enter:

`sudo -u postgres command`

However, it is usually more convenient to open another terminal window, run

```
sudo -i -u postgres
```

once, and then run all commands on behalf of the *postgres* user in this terminal.

- =>

An arrow prompt denotes a command entered in psql. If psql is not open yet, first run the **psql**

command on behalf of the *student* OS user.

Self-Study

If you are taking the course on your own, you should study the topics as they follow, lesson by lesson.

Course videos will be available at <https://postgrespro.com/community/courses/DBA1>.

Course materials can be used both in addition to the videos and independently. Apart from the slides, presentations also contain slide notes; they provide enough information to understand the topic. Besides, there are demonstrations for almost each lesson. Always try out the commands provided in these demos.

Doing practice tasks is an important part of the course. It is advisable to always look through the provided solutions: they can contain some additional information, which is not covered in presentations and demos. But do it only after you have completed the task on your own.

While taking the course, use the provided reference materials. The PostgreSQL 16 documentation is located in the `/home/student/doc` directory and is accessible on the Firefox browser's homepage.

If you need to reset the PostgreSQL instance and its configuration to the default settings, run the following command:

```
student$ ~/reset.sh
```