# Backups: Command Line vs. GUI

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### ☰ WHAT'S COVERED

This tutorial explores using the differences between backing up and restoring from the command line and graphical user interfaces (GUI) in three parts:

1. Introduction
2. GUI Ease of Use
3. Command Line Flexibility

# 1. Introduction

When it comes to backing up and restoring data from a database, we have the option to use graphical user interfaces (GUI) or the command line. There are advantages and disadvantages to both options. Most of the time, with a database, you will automatically have access to the command line. This command-line interface will be consistent regardless of the platform that you use. With a GUI interface, there is typically a separate installation that connects to the database. You generally have options beyond what the database vendor offers to be able to connect to the database. The GUI tool interfaces with the database through application programming interfaces or by running it through the command line.

# 2. GUI Ease of Use

Graphical user interfaces (GUI) tend to be visually intuitive to use, especially for a beginner. The command line commands and options, on the other hand, can be quite difficult for beginners to handle and require some practice and expertise. For example, think back to the last tutorial. The pg_restore command -a restores only data, but the same option in psql echoes the input lines in the script. The same feature in a GUI form would just be an input field, like a checkbox, without having to remember what the command looks like. In the GUI, you can execute the commands without knowing the exact syntax and making mistakes in the underlying code.

The graphical user interface will use more memory, as it has to display the graphical elements of the program, whereas the command line will use a lot less memory as there is no extra overhead. But with many different GUI tools for the database, you can customize the look and feel and save your settings. This allows you to choose the different interfaces based on the database you're using. With the command line, you do not have the same customization, although you can create scripts to run your commands.

# 3. Command Line Flexibility

Since you can create scripts in the command line, you have the ability to combine statements together and perform tasks that cannot be done in GUI design unless it has been implemented. For example, from the command line, you can backup from one database and immediately send the result to restore another database. You also have the option in the command line to connect to a remote database, which is not always possible in the GUI.

Regardless of whether you use the GUI interface or the command line, you can continue to restore a database even if there are errors in the files, or stop. With either option, you can also choose to backup and restore just the data, the schema, or both. You also have the option to backup and restore data to and from plain text files or non-plain text files.

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| ☑ | SUMMARY |
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There are some differences and similarities between backing up and restoring databases through the command line and GUI interface.

Source: Authored by Vincent Tran