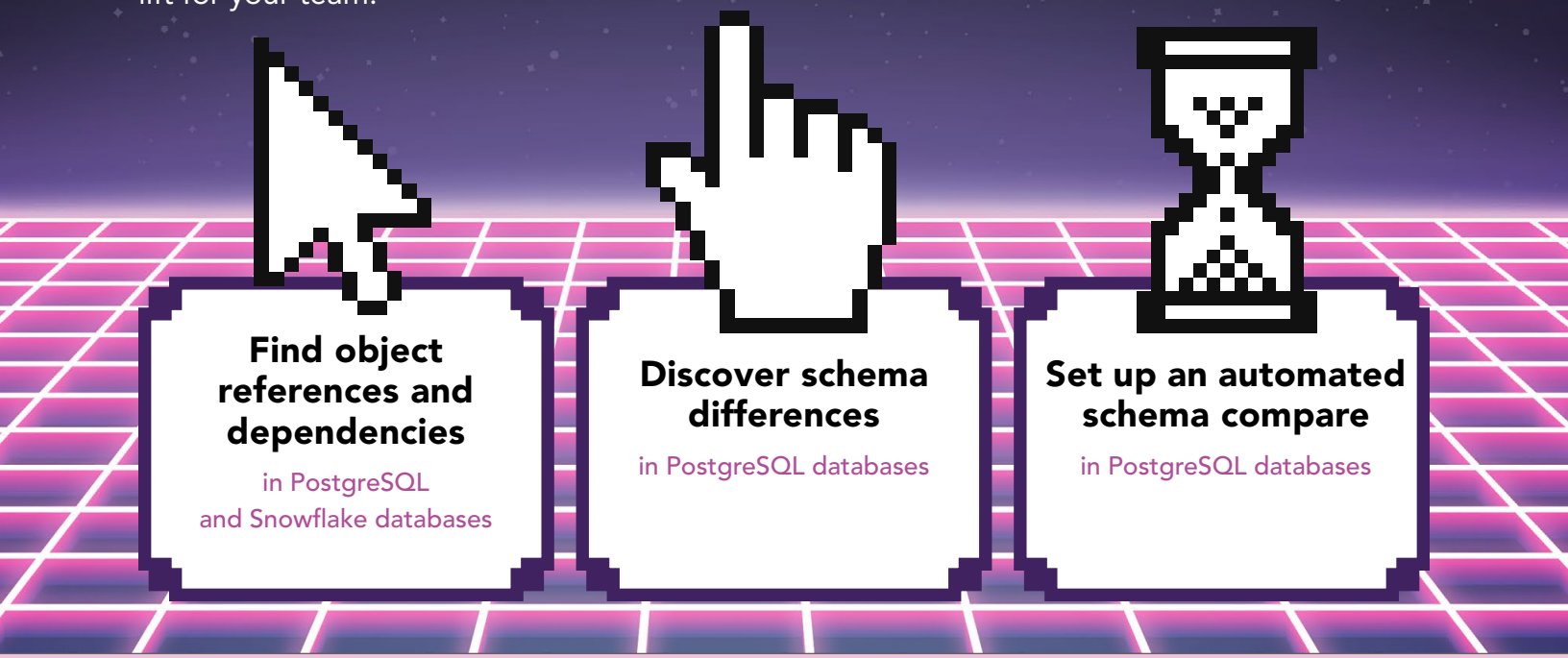
Streamline heterogeneous database environment management with Toad Data Studio

In five data management use cases across three database platforms, we were able to efficiently complete common management tasks with Toad Data Studio

With the rapid growth of actionable data flooding in, how your company organizes, manages, and distributes data is more important than ever. Your data professionals need to be able to quickly and easily manage the underlying data structures that serve your companies' evolving analytics and operational goals. Whether you're moving your entire database application from one platform to another, moving data, or looking for schema differences, investing in a heterogeneous database management tool can unify those tasks into a single console and minimize the lift for your team.

Our engineers put Toad® Data Studio through its paces in five everyday scenarios using Oracle®, PostgreSQL, and Snowflake platforms. With this heterogeneous database management tool, we were able to accomplish these common tasks efficiently. This all-in-one solution proved to be a useful tool for organizations whose goal is flexibility in today's evolving business landscape.



About Toad Data Studio

Toad Data Studio is an all-in-one database management tool for diverse environments. This Quest Software offering provides data professionals with these features and capabilities:[1]

Connectivity: Connect to on-premises and cloud-based databases, NoSQL sources, and more.

Data Source Explore and Search: Increase visibility into data source environments and search for objects across numerous database sources.

SQL and DDL Generation: One-click SQL generation for Data Definition Language (DDL) statements for existing objects.

SQL Editor: Write, edit, and run standard SQL queries as well as platform-specific dialects.

JSON/XML Viewer Editor: Read and edit JavaScript Object Notation (JSON) and Extensible Markup Language (XML) files within table fields or in a separate editing window.

Data Compare: Compare data differences or discrepancies for increased data accuracy.

Schema Compare: Compare schema/structures across database environments and generate change statements.

Data Export/Data Extract and Load: Create a recurring schedule to move data between systems or set this up on a provisional basis.

Automation: Publish automations into a server environment and share these automations with other users.

GIT Integration: Maintain best practice version control and collaboration efforts with this global information tracker (GIT) tool.

To learn more about how Toad Data Studio can help boost efficiency and team productivity, visit: *https://www.quest.com/video/discover-toad-data-studio-powerful-heterogeneous-database-management/*.

Why and how we tested

In 2025, big data and AI have the potential to upend your business model—or enhance it. With approximately 402.74 million terabytes of data generated daily in 2024 alone, and the expansion of AI technology across all industries, organizations face unique opportunities.[2] The data professionals behind the scenes will play a big part in how these opportunities affect your potential for growth. Investing in an efficient heterogeneous database management tool could help minimize the amount of human interaction needed to streamline development and production efforts, improve data quality, and facilitate better data sharing capabilities.

To see how **Toad Data Studio** worked with Oracle Database, PostgreSQL, and Snowflake data platforms, we set up a database environment that consisted of two AWS EC2 VMs. **Oracle Database** is a long-time leader in the relational database space and has been a prominent player in banking, retail, healthcare, and telecommunication corporations.[3] **PostgreSQL** is an open-source database platform used around the world in tech, finance, healthcare, manufacturing, and more.[4] **Snowflake** is a cloud-based platform that organizations use for large-scale data analysis across multiple sources. Data-driven organizations, including healthcare, retail, finance, media, tech, and government agencies, use Snowflake for government and compliance efforts.[5]

For our sample schema, we used DVD Store 2.1, an online transaction processing (OLTP) database workload generator based on real-world, human-interactive applications.[6]

On the following pages, we describe the five common data management tasks we completed and include relevant screenshots of the Toad Data Studio UI interface.

Scenario 1: Pre-migration research

Finding all object references and dependencies, such as references to columns in other tables, stored procedures, or other databases, is a valuable pre-migration action. Addressing any issues here can ensure a smoother migration. For this pre-migration research use case, we used Toad Data Studio to find all foreign keys in PostgreSQL and Snowflake databases. We found it simple and straightforward to complete this three-step action.

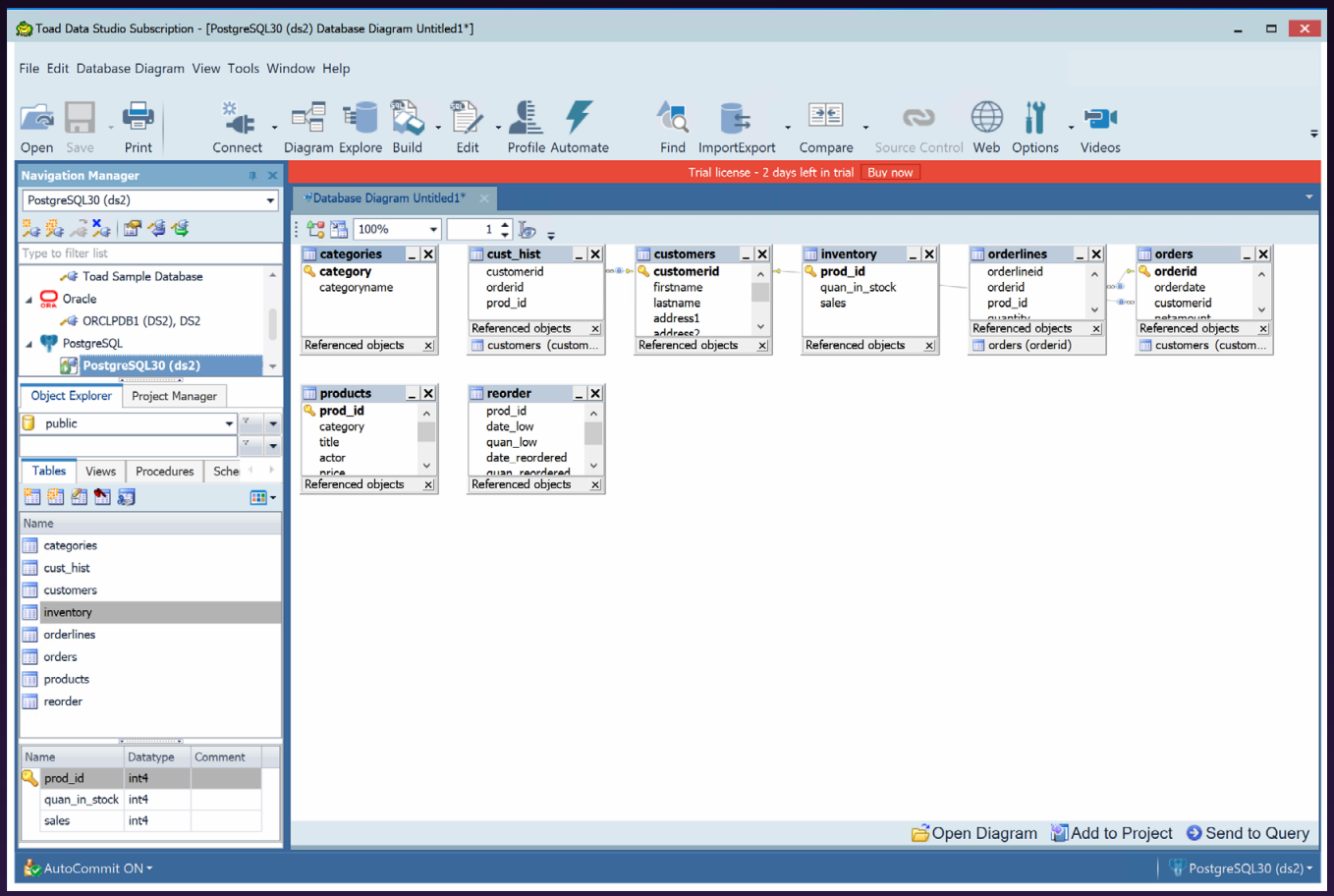


Figure 1: Diagram window with the tables we used for the find all foreign keys task. Source: Principled Technologies.

Scenario 2: Finding data integrity issues

The ability to detect potential issues before applying changes to a live system is essential. Specifically in the database management space, it is critical for administrators to be able to detect schema differences between databases, such as comparing a development database schema to a production database schema. By providing developers and data engineers with a hassle-free way to detect schema differences, changes, and conflicts, you make it easier for them to resolve these issues. For this use case, we were able to quickly and easily use Toad Data Studio to compare source and target PostgreSQL databases as well as script options between development and production instances.

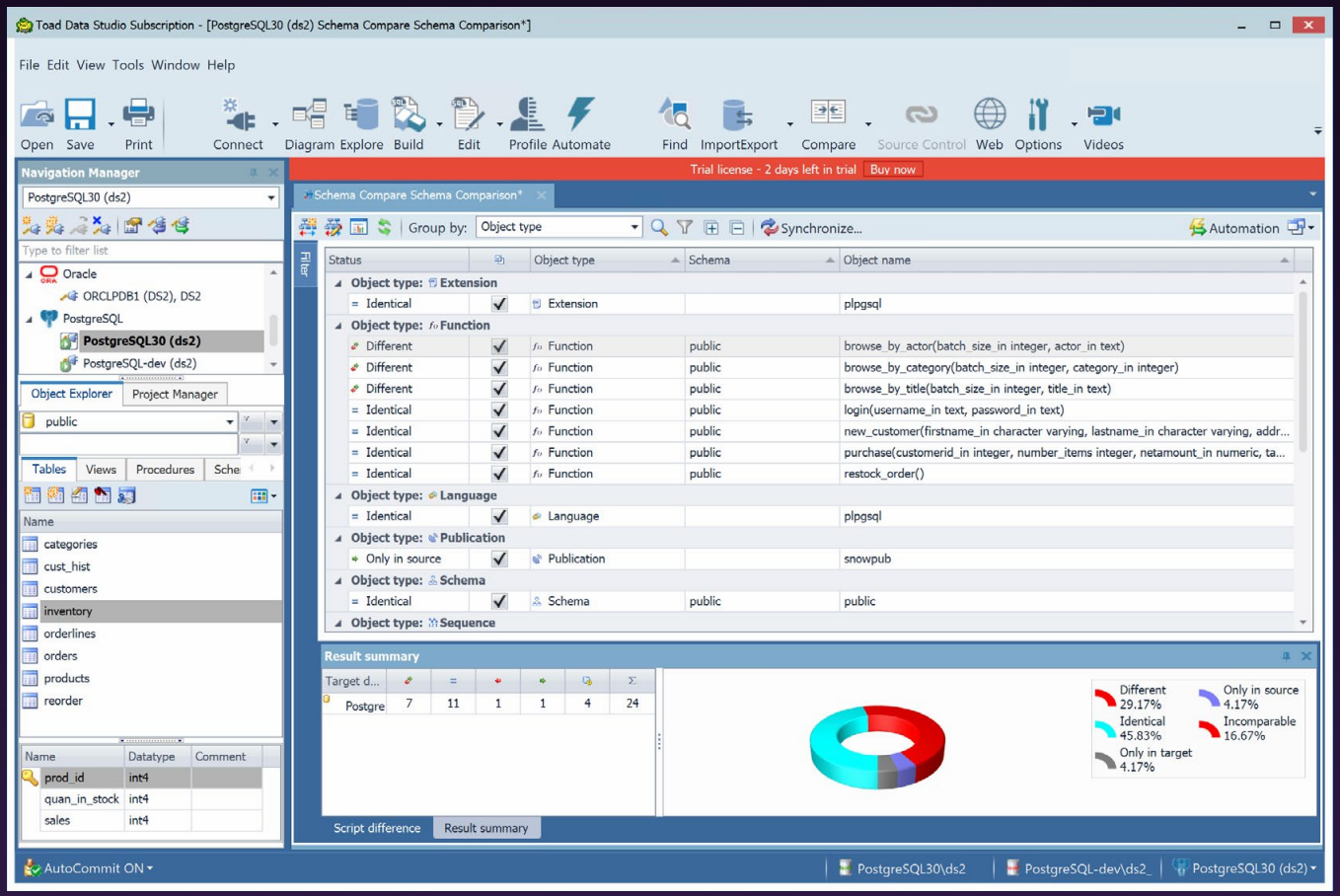


Figure 2: Summary results screen from the Schema Compare tool for the compare source and target PostgreSQL databases task. Source: Principled Technologies.

Scenario 3: Detecting data differences

Identifying data differences in databases is also a key component in the quest to ensure data quality. Minimizing the amount of human interaction needed when merging tables, validating data, or conducting quality checks means data teams have more time for other important initiatives. To detect data differences, we used Toad Data Studio to map source tables to target tables and select comparison options between PostgreSQL development and production tables. Doing so was fast and easy, requiring only four steps.

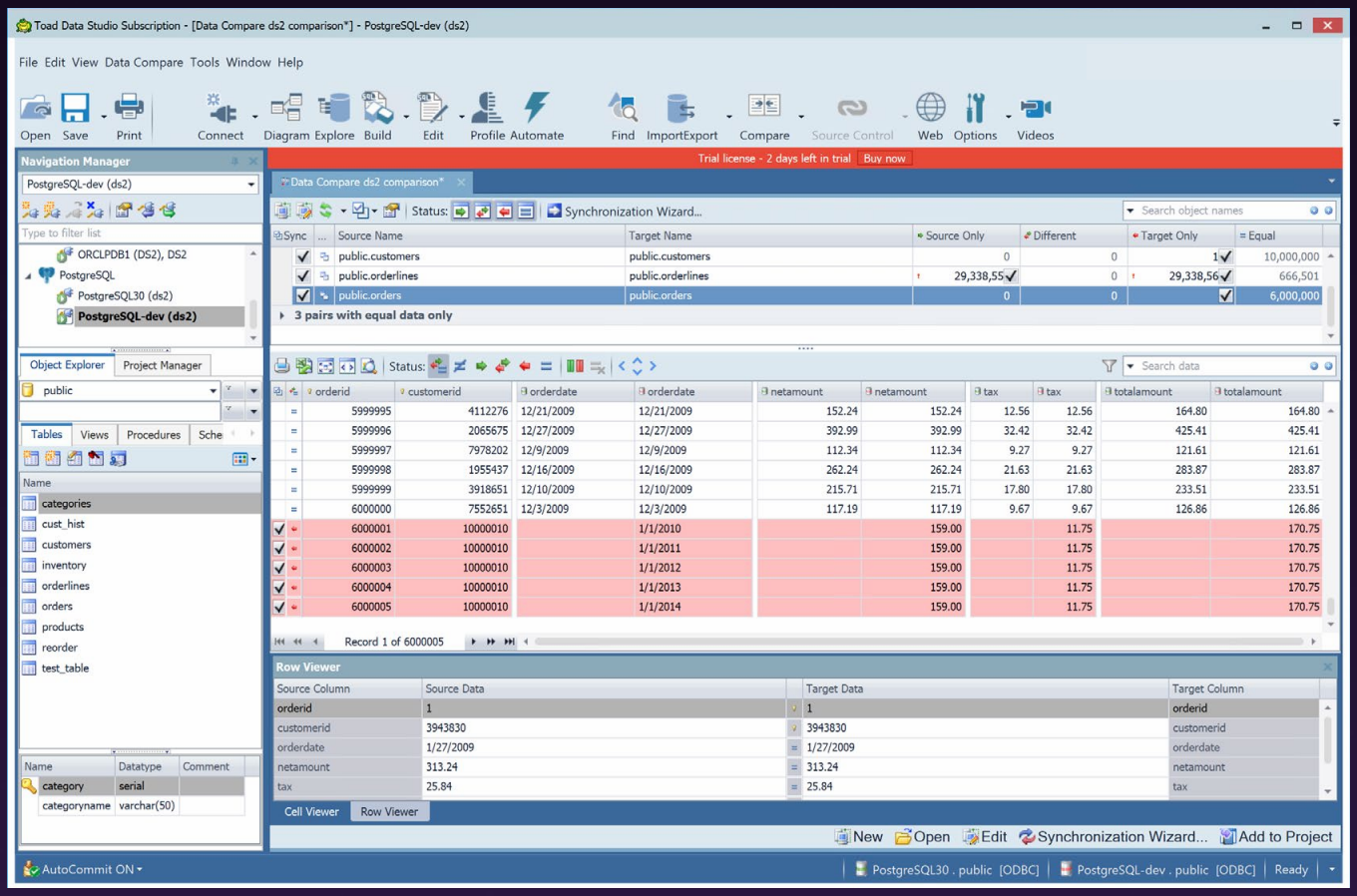


Figure 3: Summary results screen from the Data Compare tool for the discovering dataset differences task.
Source: Principled Technologies.

Scenario 4: Freeing up resources

In addition to saving time, automating routine data management tasks in heterogeneous environments can increase efficiency, reduce the chance for human error, and ensure consistency across your database deployments. For this automation use case, we used Toad Data Studio to execute a schema compare for a PostgreSQL project. The automation tool used the input we gave it for source and target databases, used the schema tool to compare the two, and published a summary output file.

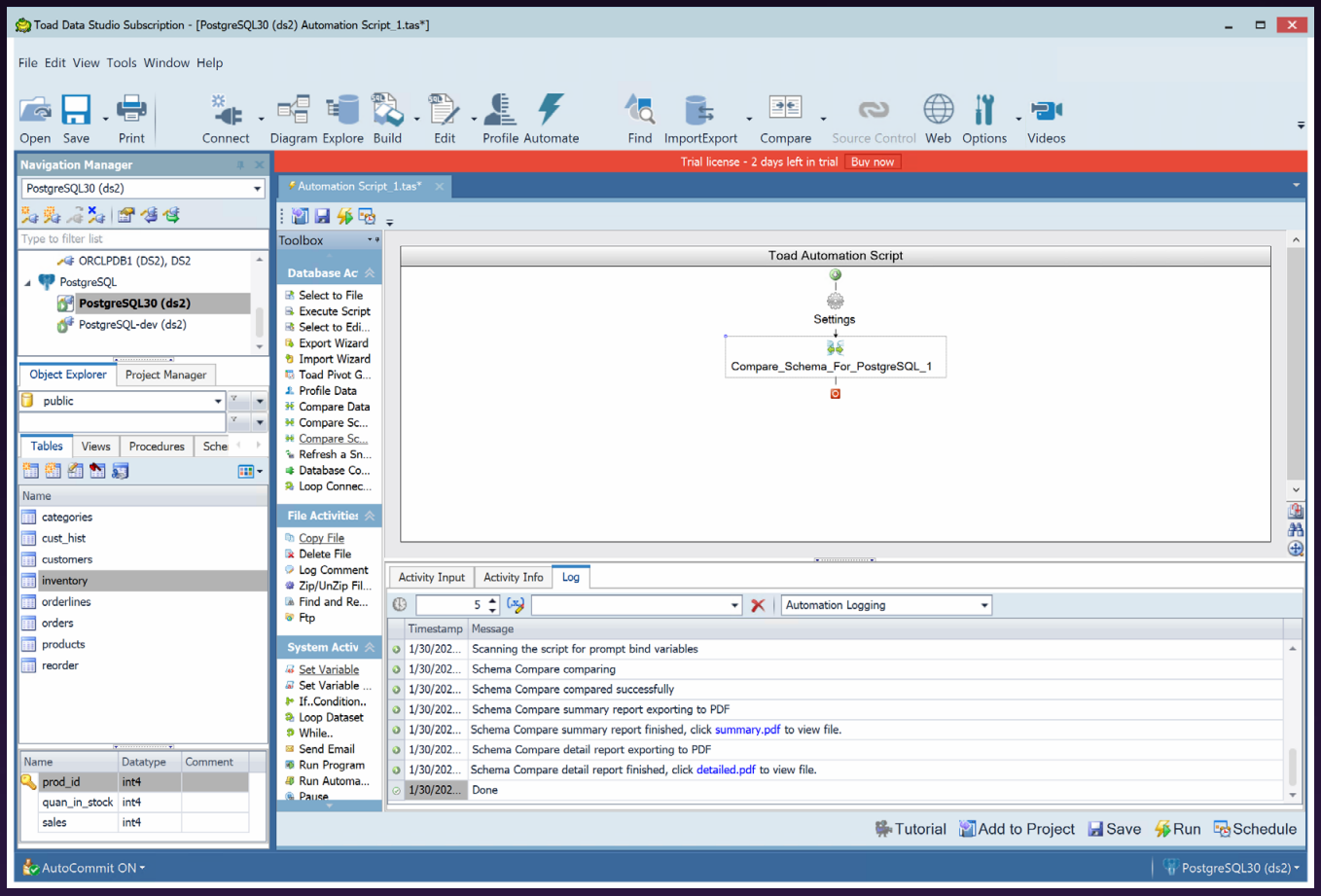


Figure 4: Summary results screen from the Automation tool for the setting up an automated schema compare task.
Source: Principled Technologies.

Scenario 5: Avoiding data conversion complexities

For companies exploring ways to reduce costs, migrating key tables from a license-based database platform to one that's open source is an intriguing option. Toad Data Studio allows users to connect to both databases simultaneously, making it easier to compare schema, generate migration scripts, and transfer data between the two platforms.[7] For this two-part process, we used Toad Data Studio to transfer tables from Oracle Database to PostgreSQL and create foreign keys and indexes.

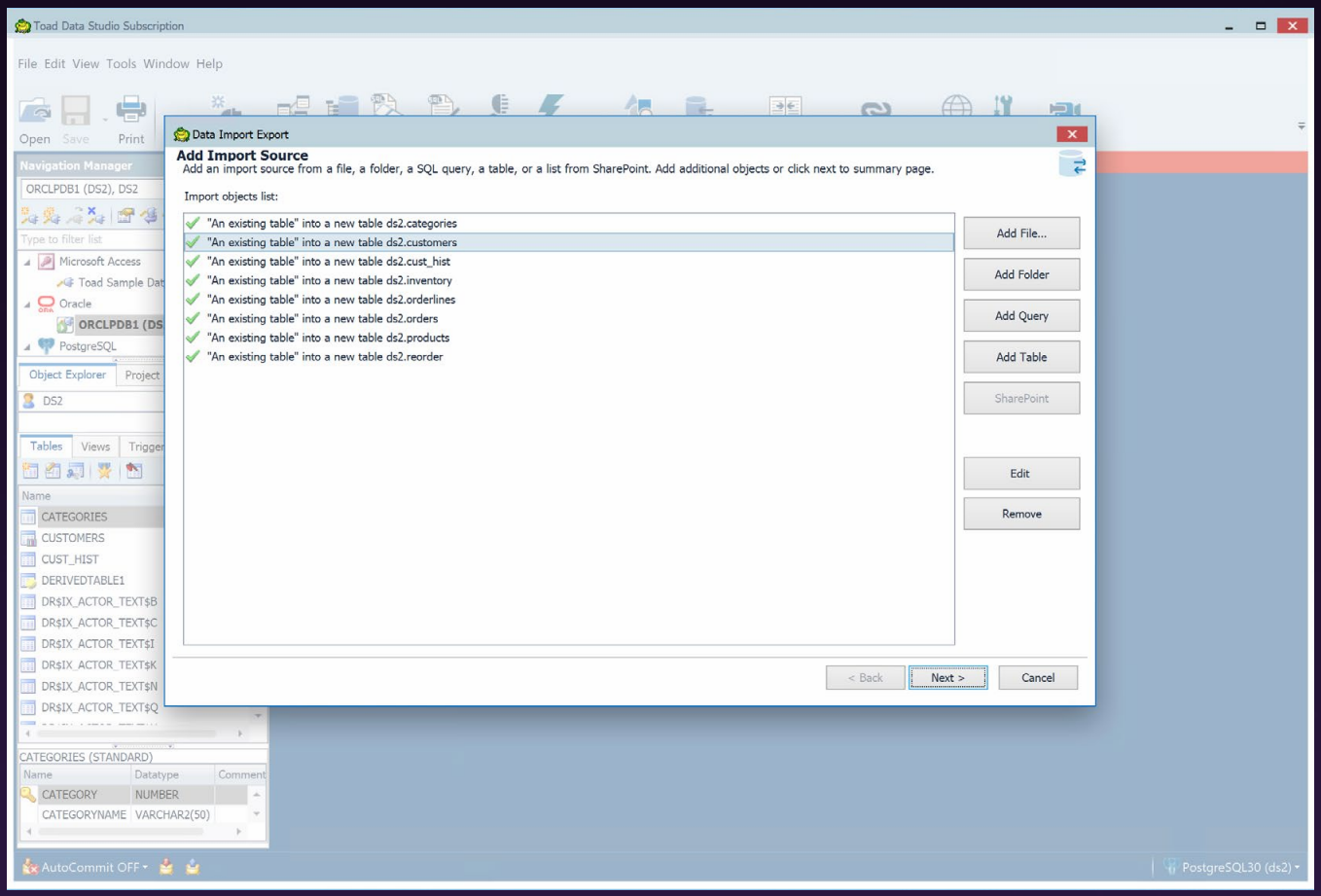
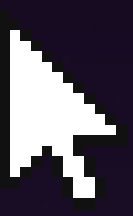


Figure 5: SQL Editor window we used for the second part of the importing data from Oracle to PostgreSQL task. Source: Principled Technologies.

Conclusion

The ability to manage multiple database platforms from a single management console helps your data engineering teams increase efficiencies by removing the need to navigate between platform-specific tool sets. We found Toad Data Studio did well in our everyday data management use cases and allowed us to efficiently accomplish our test tasks. Using Toad Data Studio could help you streamline development and production efforts, improve data quality, and facilitate better data sharing capabilities in heterogeneous environments.



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Read the science behind this report at https://facts.pt/wMi0ZR8 ►

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