



THE DATABASE TOOLKIT FOR PYTHON

The Database Toolkit for Python

SQLAlchemy 1.4 Documentation

Release: **1.4.36** **CURRENT RELEASE** | Release Date: April 26, 2022[Contents](#) | [Index](#) | [Download this Documentation](#)Search terms:

Getting Started

New to SQLAlchemy? Start here:

- **For Python Beginners:** [Installation Guide](#) - basic guidance on installing with pip and similar
- **For Python Veterans:** [SQLAlchemy Overview](#) - brief architectural overview

Tutorials

SQLAlchemy 1.4 / 2.0

SQLAlchemy 2.0 is functionally available as part of SQLAlchemy 1.4, and integrates Core and ORM working styles more closely than ever. The new tutorial introduces both concepts in parallel.

- **For a quick glance:** [ORM Quick Start](#) - a glimpse at what working with the ORM looks like
- **For all users:** [SQLAlchemy 1.4 / 2.0 Tutorial](#) - The new

Legacy SQLAlchemy 1.x Tutorials

The 1.x Object Relational Tutorial and Core Tutorial are the legacy tutorials that should be consulted for existing SQLAlchemy codebases.

- [Object Relational Tutorial \(1.x API\)](#)
- [SQL Expression Language Tutorial \(1.x API\)](#)

SQLAlchemy 1.4/2.0

Tutorial

Migration Notes

- [Migration from 1.3](#) - Migration notes for SQLAlchemy Version 1.4
- [SQLAlchemy 2.0 Preview](#) - Background on preparing a SQLAlchemy 1.4 application for SQLAlchemy 2.0
- [Changelog catalog](#) - Detailed changelogs for all SQLAlchemy Versions

Reference Documentation

SQLAlchemy ORM

- **ORM Configuration:** [Mapper Configuration](#) | [Relationship Configuration](#)
- **ORM Usage:** [Session Usage and Guidelines](#) | [Querying Data, Loading Objects](#) | [AsyncIO Support](#)
- **Configuration Extensions:** [Mypy integration](#) | [Association Proxy](#) | [Hybrid Attributes](#) | [Automap](#) | [Mutable Scalars](#) | [All extensions](#)
- **Extending the ORM:** [ORM Events and Internals](#)
- **Other:** [Introduction to Examples](#)

SQLAlchemy Core

- **Engines, Connections, Pools:** [Engine Configuration](#) | [Connections, Transactions, Results](#) | [AsyncIO Support](#) | [Connection Pooling](#)
- **Schema Definition:** [Overview](#) | [Tables and Columns](#) | [Database Introspection \(Reflection\)](#) | [Insert/Update Defaults](#) | [Constraints and Indexes](#) | [Using Data Definition Language \(DDL\)](#)
- **SQL Reference:** [SQL Expression API docs](#)
- **Datatypes:** [Overview](#) | [Building Custom Types](#) | [API](#)

- **Core Basics:** [Overview](#) | [Runtime Inspection API](#) | [Event System](#) | [Core Event Interfaces](#) | [Creating Custom SQL Constructs](#)

Dialect Documentation

The **dialect** is the system SQLAlchemy uses to communicate with various types of DBAPIs and databases. This section describes notes, options, and usage patterns regarding individual dialects.

[PostgreSQL](#) | [MySQL](#) | [SQLite](#) | [Oracle](#) | [Microsoft SQL Server](#)
[More Dialects ...](#)

Supplementary

- [Frequently Asked Questions](#) - A collection of common problems and solutions
- [Glossary](#) - Terms used in SQLAlchemy's documentation
- [Error Message Guide](#) - Explanations of many SQLAlchemy Errors
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