

# Book review: Migration guide to Firebird 4.0

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November 12, 2021

## Abstract

Accompagnying the recent release of Firebird 4.0, a book about migrating to 4.0 is a welcome help for Firebird users who wish to use the latest version of the Firebird 4.0 engine. A review of the english translation of the book.

## 1 Introduction

As the title indicates, the book 'Migration guide to Firebird 4.0' by Carlos Henrique Cantu is meant for people who are already using Firebird: The book covers migration from version 3.0 of Firebird or earlier versions. It is not meant as a beginner's guide to Firebird, nor is it intended to be a complete reference of Firebird.

The book gives insight in the issues you can (and most likely will) encounter when migrating existing databases and applications to Firebird. It also gives hints on how to solve or prevent the issues from occurring.

To this end, the book starts by repeating some basic firebird concepts: the various available architectures and their characteristics - important for choosing the right version to use. It mentions user-defined functions: these are deprecated in Firebird 4.0. They can still be used in Firebird 4.0, but they are no longer available or enabled by default.

## 2 Installation & Migration

A first step in migrating to a new server version is obviously installing the new version, so this is covered to some extent for Linux and Windows: This chapter offers little surprises to seasoned Firebird users, as the procedure has not changed significantly.

The migration chapter is arguably the most important chapter of the book: it explains the need for a migration process, identifies the pitfalls that can occur during the migration and offers workarounds for some commonly found problems. It also recommends a replication scheme for migration of systems that must be available 24/7 but unfortunately, it fails to explain how to do this - earlier versions of Firebird do not have this functionality built-in, making this a non-trivial task which could really use an in-depth explanation.

A new installation needs to have some users present to be able to function, so some time is spent on explaining the new features regarding user management in Firebird: For users of firebird 3, this will offer few insights, but users of older versions of Firebird should read this chapter carefully, as the user management has changed significantly in version 3, so you need to be aware of it if you migrate to version 4.0.

SQL users are only one component of database security, and so the book spends some time on tips how to further secure your databases.

### **3 New features of Firebird 4.0**

Good reasons for updating a database server are improved stability, speed and bug fixes. Access to new features is an equally valid reason for migrating to a new version, so naturally the new features must be discussed in a book about migration to a new version.

Firebird 4.0 - or more specifically, the client library that applications use when connecting to firebird - allows you to specify connection strings using an URL syntax, the book naturally explains how to construct these connection strings.

New in Firebird 4.0 is how Firebird manages some aspects of transaction isolation. The book explains how the transaction isolation works and what changes were introduced in Firebird 4.0 - This chapter is mostly important for application programmers: the transaction isolation levels are usually controlled in application code. The consequences of the new transaction isolation for garbage collection (and the automated sweep process) are also explained.

Every new version of Firebird comes with new features in SQL, and version 4.0 is no different in this regard: new keywords are introduced as well as new data types: the new data types do not interfere with the migration process, but the new keywords can cause problems. The new time zone capabilities of Firebird are treated in depth.

Last but not least, with Firebird 4, firebird gets one-way replication capabilities: the required setup and parameters for database replication are also treated in depth.

### **4 Conclusion**

People that wish to migrate to Firebird 4.0 from earlier versions of Firebird will definitely find this book useful: In fact, people with older Firebird versions have more reason to buy this book, since it also discusses changes introduced in Firebird 3.0. Written in an informal style, it is an easy read that will quickly get you up to speed with the latest version of Firebird.