

# RDM Embedded 10.1

## dbRepair Guide

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# Introduction

DBREPAIR is a suite utilities that implement a number of functions to support database maintenance in critical situations of database corruption or in cases of performance degradation. The functions of the module perform the following operations:

Utility Program	Description
<a href="#">dbcheck</a>	Consistency check of the database records, keys and sets and diagnostics of database corruption cases. Creates database repair list for <b>dbrepair</b> .
<a href="#">dbrepair</a>	Complete or partial repair of corrupted database structure. Fixes problems encountered by <b>dbcheck</b> with the exception of key files (use <b>keybuild</b> instead).
<a href="#">keybuild</a>	Rebuild of key files.
<a href="#">dbdefrag</a>	Compression of fragmented database
<a href="#">dchain</a>	Rebuilding of delete chains (linked list of delete records)
<a href="#">dbcluster</a>	

There are two types of database corruptions: physical and structural. Physical database corruption is caused by writing invalid data directly into a database file or through a corrupted cache page. The former can happen through an occasional direct modification of the database files from other applications. The latter can only be caused by an error in the direct-linked application or by a bug in the runtime engine. As a result, some fields in the database records contain garbage data.

In general, the DBREPAIR utility cannot restore the value of the corrupted data fields. But if the fields are the database pointers used for a set relationship, the utility can attempt to restore these values in those fields using redundant pointers in doubly-linked lists. We say that a database pointer, which is a value of the DB\_ADDR type, is physically corrupted if it is not valid for the particular database. A DB\_ADDR value is valid as a database pointer if its `fileno` component is a valid file number and its `slotno` component is a valid slot number for this file. If a pointer is a set pointer the `fileno` component additionally must be consistent with the set definition in the database schema.

Structural corruption is caused by inconsistency in several associated pointers that represent owner-member relationships between database records.