

# Analysis of Vertica Database Designer

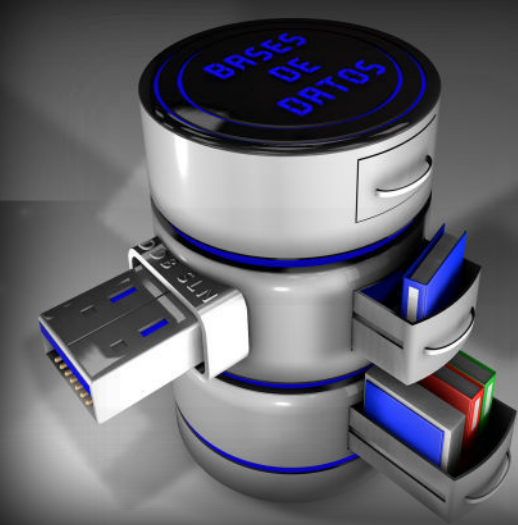
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Thesis done in cooperation with GoodData s.r.o.



Solving real business problem



## Brief background

**Projection in Vertica database:**

- Physical schema of Vertica
- Data of one table stored in unlimited number of projections
- Projections of one table may include different column selection, ordering, segmentation and encoding
- Benefit: Optimization of projections for a specific query workload

**Database Designer (DBD):**

- Built-in tool in Vertica
- Automatically optimizes projections for a specific query workload

## Goals

- Analyze influence of DBD on database availability
- **Design and implement a testing tool that targets suboptimal designs of projections generated by Database**
- Explore bottlenecks of DBD based on the measured data by the implemented tool
- Explore whether DBD might be used in production servers by customer

## Results

- DBD is eligible to be used by customers
- **Implemented tool used by GoodData database administrators**
  - Finding possible issues with new Vertica releases
  - Testing customer's scenarios (database model)
- Non-optimal designs created by DBD were found
- Bug of DBD found and reported to Vertica developers by GoodData, s.r.o.

**Award**  
Dean's award

