Performance Optimization

Slow Workbook?

SERVER AND DATA SOURCES

Find the workbook(s) with the slowest load times.
HERE'S HOW

Test the workbook on Server and Desktop to see if one is noticeably slower.

Slower on **Desktop**

Slow on **both** or **Server N/A**

Slower on **Server**

Check system requirements and try it on faster machines.

Slow on all machines

What type of data connection?

Learn how we can help.
INTERWORKS
POWER TOOLS: SERVER

Faster on other machines

Live

Extract

Shared (Tableau Server)

Upgrade your computer

Check that the extract is optimized:
- Hide unused fields
- Aggregate to visible dimensions
- Roll up dates to the level needed
- Filter unneeded values before extracting

CLICK FOR MORE

Are all calcs defined in the shared data source?

Need real-time updates?

Yes

No

Yes

No

Does the data source use Custom SQL?

Create an extract and schedule refreshes (server only)

Create a local copy to troubleshoot, then follow the steps for the underlying connection type

SOLUTIONS:
- Push all calcs to the published data source
- Create an extract of the published data source

Yes

No

Define joins using Tableau instead.
WHY?

Work with a data engineer to tune the database

Too big to download

Work with a smaller data sample to troubleshoot.

Still too slow?

Not possible with this query

Yes

No

Work with a data engineer to optimize the query

Still too slow?

No

☺ **ENJOY THE SPEED!**

Yes

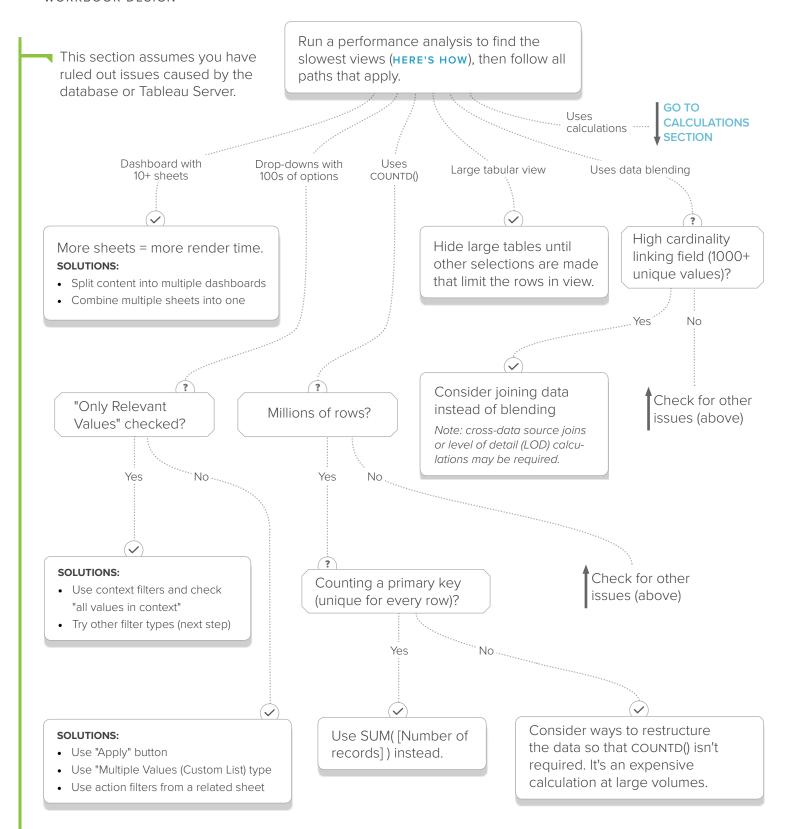**GO TO WORKBOOK DESIGN SECTION**

Performance Optimization

Slow Workbook?
WORKBOOK DESIGN

Run a performance analysis to find the slowest views (HERE'S HOW), then follow all paths that apply.

Uses calculations · · · · · · · · **GO TO CALCULATIONS SECTION**

This section assumes you have ruled out issues caused by the database or Tableau Server.

Dashboard with 10+ sheets

✓

More sheets = more render time.
SOLUTIONS:
- Split content into multiple dashboards
- Combine multiple sheets into one

Drop-downs with 100s of options

Uses COUNTD()

Large tabular view

✓

Hide large tables until other selections are made that limit the rows in view.

Uses data blending

?

High cardinality linking field (1000+ unique values)?

Yes   No

✓

Consider joining data instead of blending
Note: cross-data source joins or level of detail (LOD) calculations may be required.

↑ Check for other issues (above)

?

"Only Relevant Values" checked?

Yes   No

?

Millions of rows?

Yes   No

✓

SOLUTIONS:
- Use context filters and check "all values in context"
- Try other filter types (next step)

?

Counting a primary key (unique for every row)?

Yes   No

↑ Check for other issues (above)

✓

SOLUTIONS:
- Use "Apply" button
- Use "Multiple Values (Custom List) type
- Use action filters from a related sheet

✓

Use SUM([Number of records]) instead.

✓

Consider ways to restructure the data so that COUNTD() isn't required. It's an expensive calculation at large volumes.

Performance Optimization

Slow Workbook?
CALCULATIONS

This section assumes you are using a Tableau Data Extract to optimize performance. If using a live connection, pre-compute as much as possible at the datbase layer.

Choose the data source behind the slowest views, inspect the calculations, then follow all paths that apply.

Formula uses parameters

? Is it a row-level calculation?
(evaluated before aggregating with SUM, AVG, etc)

Yes / No

✓ If possible, aggregate values before evaluating the parameter. Otherwise, see solutions in the next step.

✓ **SOLUTIONS:**
- Consider alternatives that eliminate the need for a parameter
- Split the calculation so parts can be pre-computed in an extract before evaluating the parameter

Uses Level of Detail (LOD) expressions

? Does removing the calculation with the LOD make it faster?

Yes / No

✓ **SOLUTIONS:**
- Convert to a table calculation
- Reshape data to elminiate the need for LOD
- Reduce row count.

Uses table calculations

? Does removing the table calculation make it faster?

No / Yes

↑ Check other calculated fields

✓ **SOLUTIONS:**
- Reduce the number of marks
- Convert logic so that table calculations are not needed.