SQL Access to VistA

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Overview

YottaDB® – https://yottadb.com
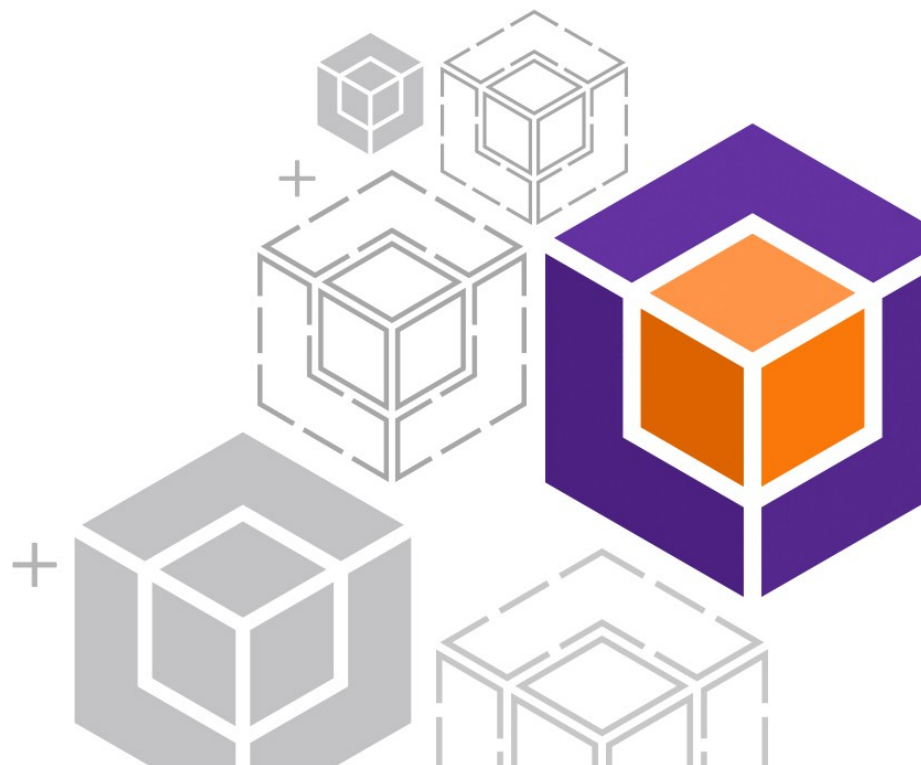
- A mature, high performance, hierarchical key-value , language-agnostic NoSQL database whose code base scales up to mission-critical applications like large real-time core-banking and electronic health records, and also scales down to run on platforms like the Raspberry Pi Zero, as well as everything in-between.

- *Rock Solid. Lightning Fast. Secure. Pick any three.*

YottaDB is a registered trademark of YottaDB LLC

- Octo is a SQL database engine that whose tables are stored in global variables

- <u>Octo is a YottaDB application, not a GT.M application</u>
  - Requires functionality in YottaDB and not available in GT.M
  - Runs on SI replication instance from GT.M or YottaDB

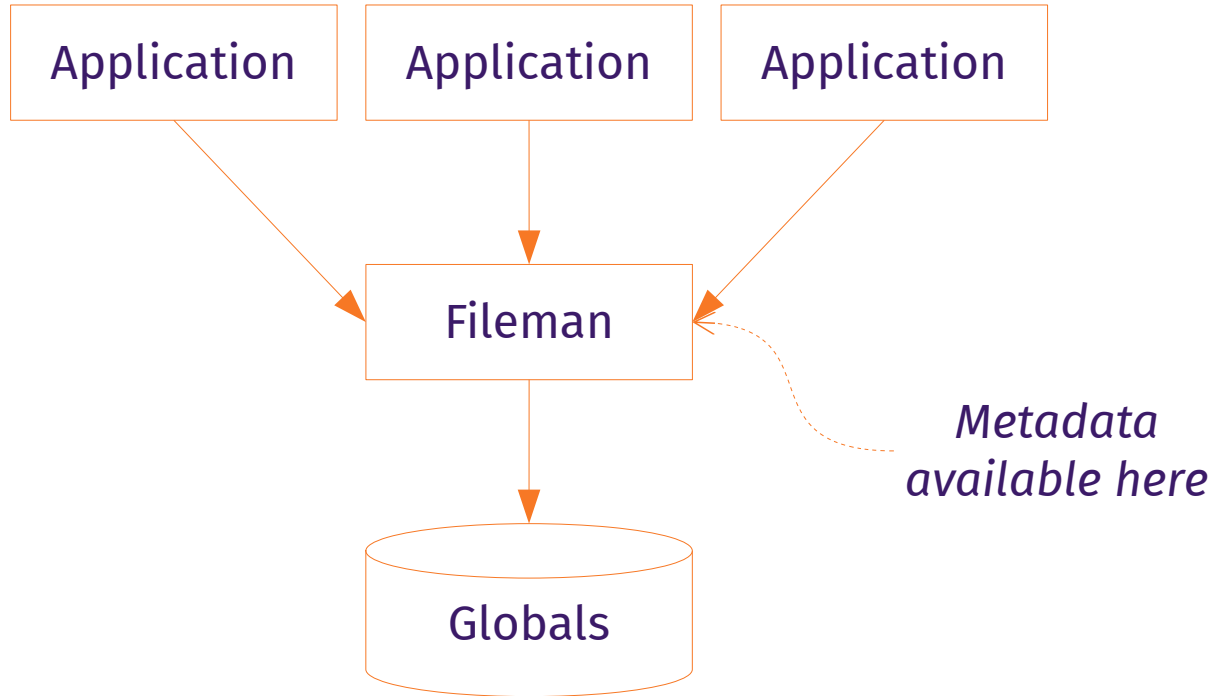Octo is a registered trademark of YottaDB LLC

SQL Access? Why?

- VistA is a great healthcare information system

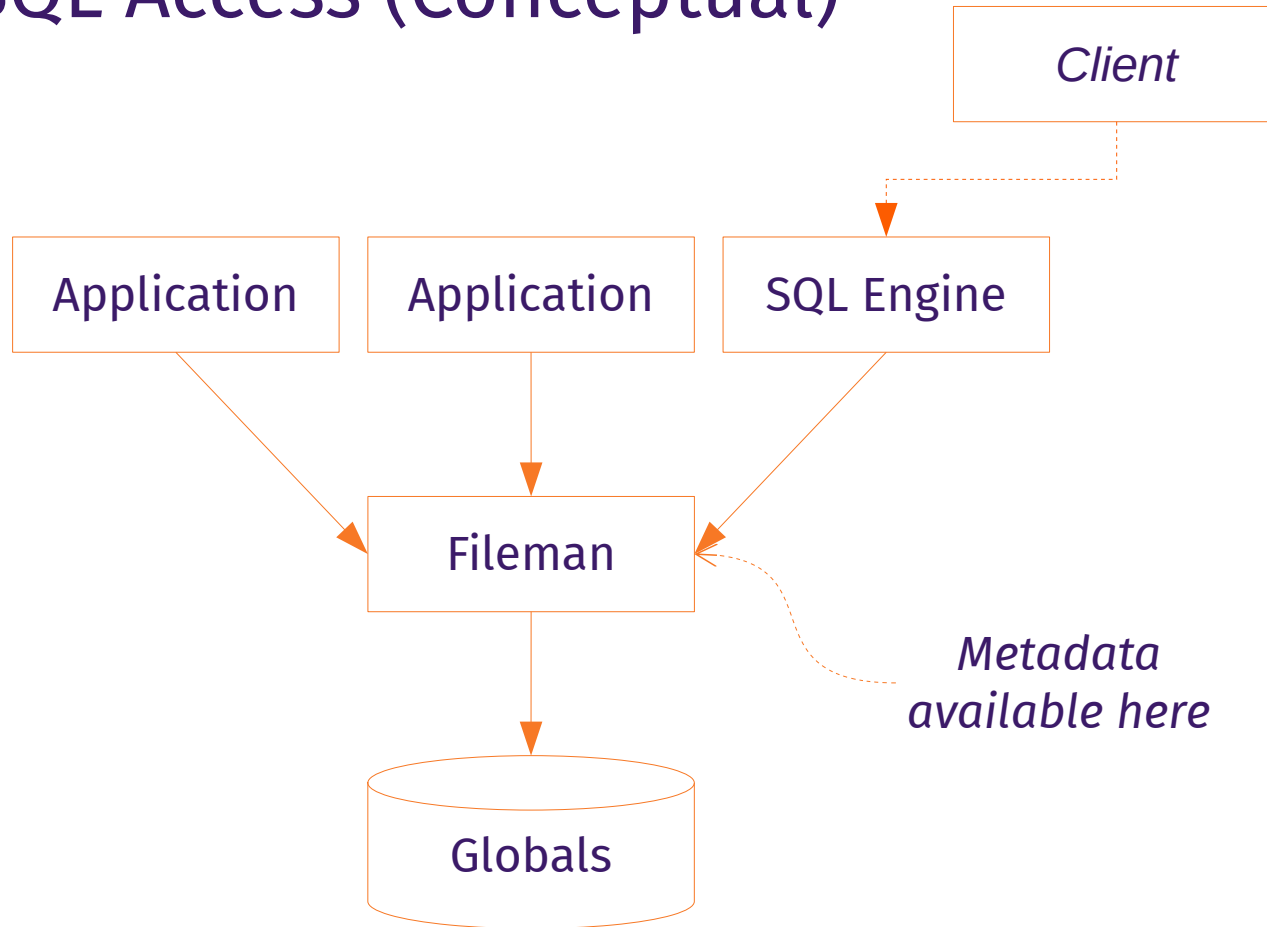- Fileman has capable and efficient reporting tools

- But…

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  - Knowledge of Fileman and roll/scroll interface

  - Business analysts know SQL and expect GUIs

  - Wealth of existing tools, many FOSS – e.g., see https://opensource.com/business/16/6/top-business-intelligence-reporting-tools

VistA Layers Simplified

Application   Application   Application

Fileman

Globals

Metadata available here

SQL Access (Conceptual)

Client

Application   Application   SQL Engine

Fileman

Metadata available here

Globals

SQL Access (Limitation)

Client

Application   Application   SQL Engine

Fileman

Globals
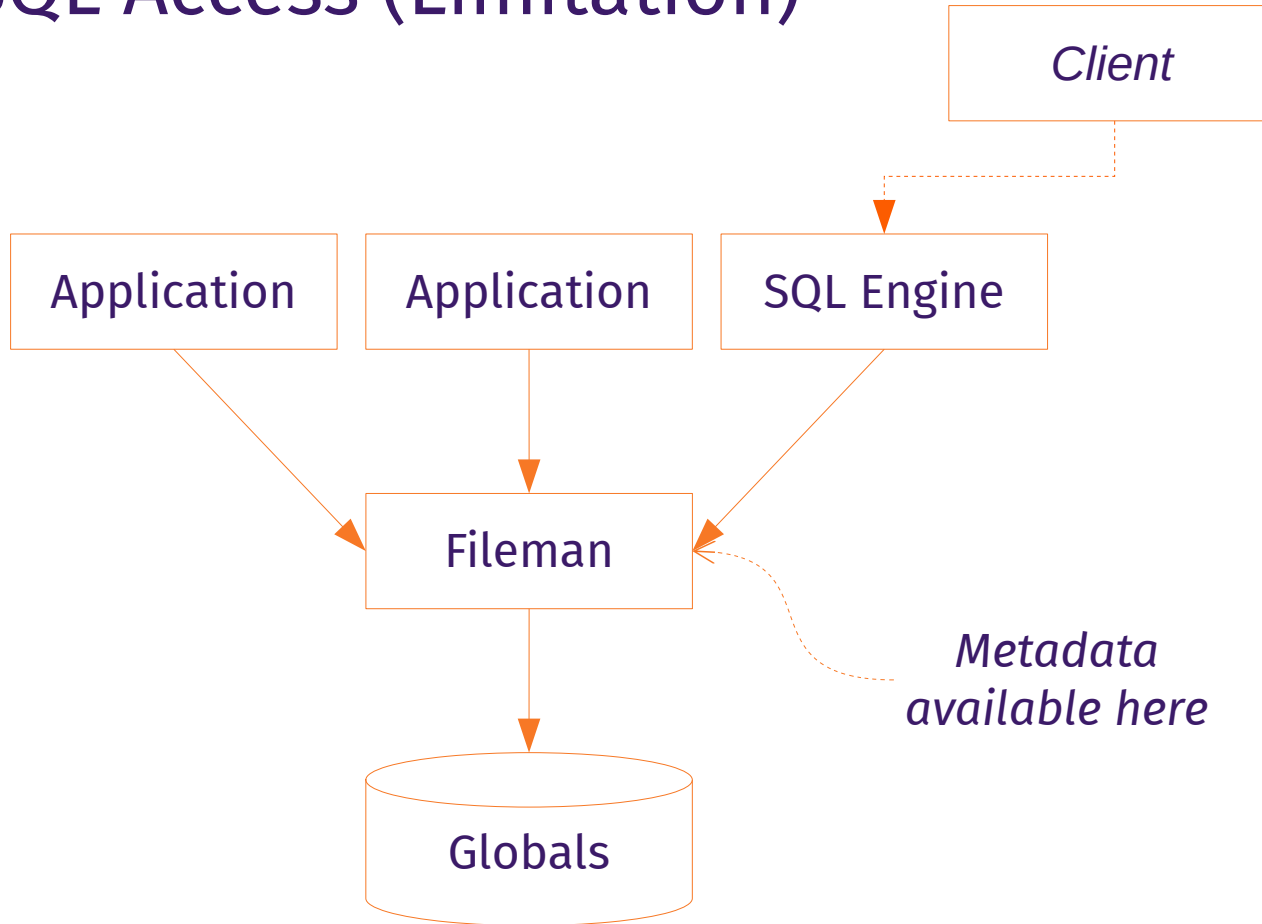
Performance bottleneck from reading metadata for every query!

Metadata available here

Octo Architecture

Client

Postgres Wire Protocol

Application

Application

DDL

Rocto Server

%VISTAOCTO

Fileman

Octo SQL Engine

Octo Globals

Triggers

Globals

Generated M Routines
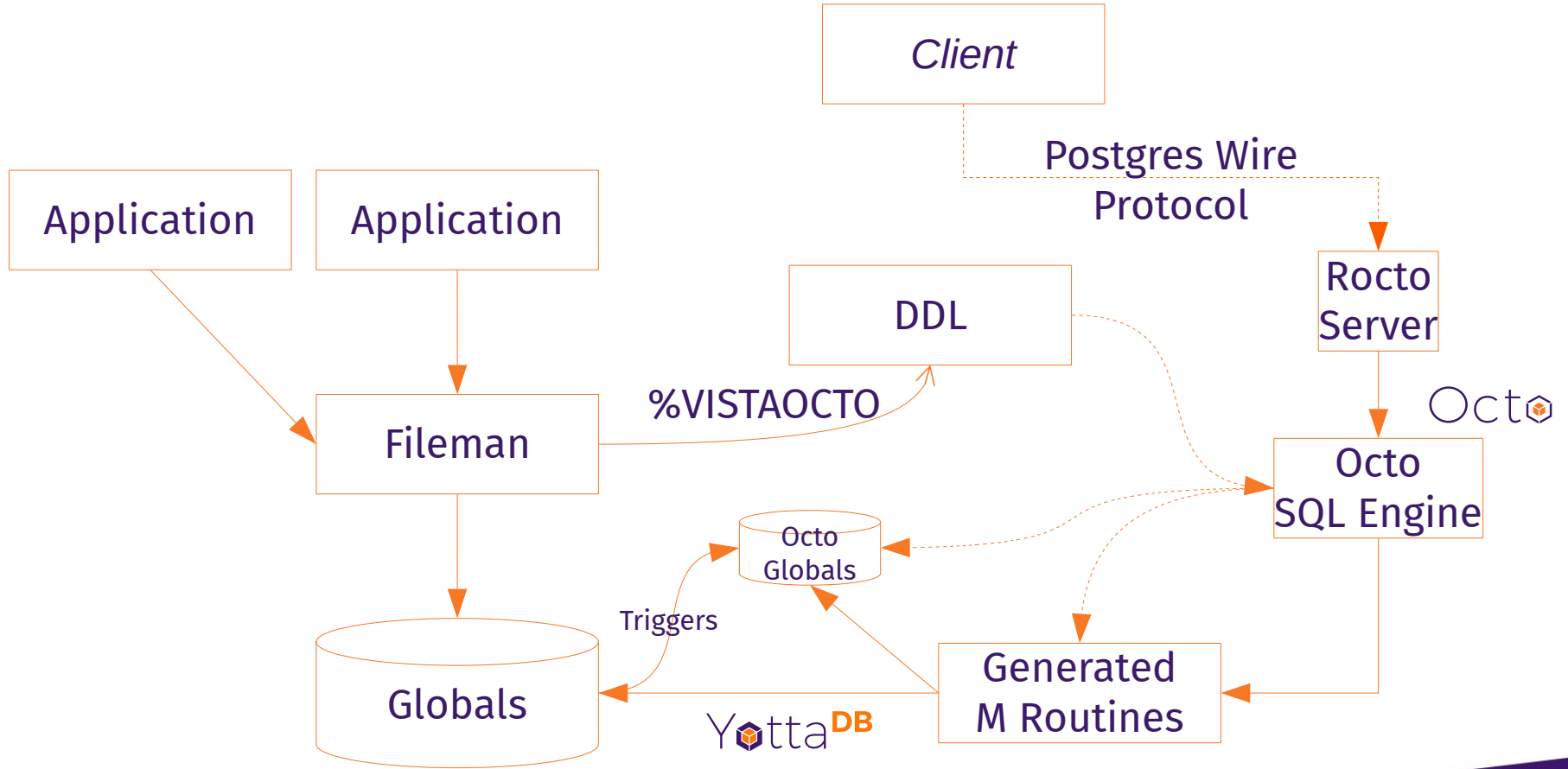
Octo Production Configuration

Ytta**DB**

Client

Postgres Wire Protocol

Rocto Server

DDL

Application   Application

%VISTAOCTO

Octo SQL Engine

Octo

Fileman

Octo Globals

Generated M Routines

Triggers

Production Globals

Replicated Globals

Ytta**DB**

Replication
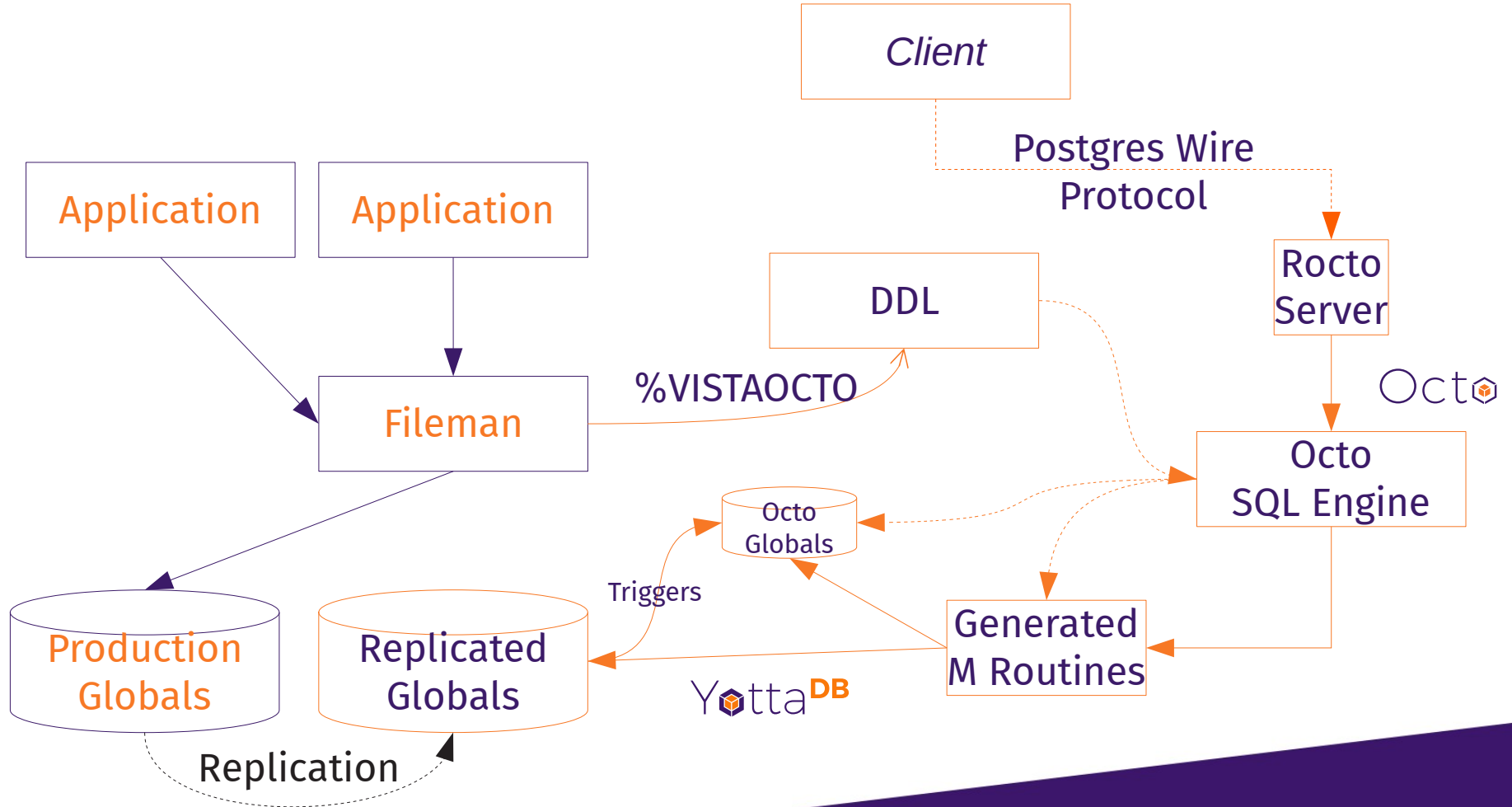
Demo

Octo Status & Road Map

- https://gitlab.com/YottaDB/DBMS/YDBOcto

- Initial production release on September 2020

- Continuously released
  - Every commit gets extensive regression testing using the Continuous Integration pipelines
  - You can drop in a new version anytime

Implemented Functionality since last VCM (1/3)

- Lots of bug fixes

- Octo now uses AIM for cross-references. Users of previous versions need to follow a specific update procedure.

- OCTO> prompt now accepts `\d` and `\d tablename`

- Rocto has a flag to allow writing to tables

- MySQL date function emulation

- Octo Sandalone Docker Image improvements (network, CTRL-C, logging)

- Speed enhancements (`-noline_entry`, parallel cross-referencing)

Implemented Functionality since last VCM (2/3)

- PowerBI Support

- Developer Documentation

- Constraints for WRITE functionality
  - CHECK
  - UNIQUE
  - PRIMARY KEY

Implemented Functionality since last VCM (3/3)

- VistA DDL Generator Changes
  - Implement Computed Multiples
  - Pointer fields are now back to Integer from Numeric (caused problems for some ODBC clients)
  - MAPONE entrypoint now works
  - Variable Pointers get broken out into specific fields
  - Optional flag to export externally formatted dates

Future Plans

- Date/Time support

- Support more clients

- ALTER TABLE

- VIEWs

Try for yourself (port 1338)

`https://hub.docker.com/r/yottadb/octo-vehu`

Yotta**DB**

Thank You!

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