

# Pelias

A yellow and black illustration of two figures. On the left, a man with a beard and a crown-like headpiece (Pelias) is shown in profile, wearing a draped garment. On the right, a woman with a large, ornate helmet (Athena) is shown in profile, holding a large circular shield with a snake on it. They are shaking hands. The background is black.

## A New OpenStreetMap Geocoder with Elasticsearch

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CEO, Mapzen



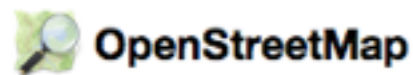
MAPZEN

# The Geocoding Problem

Another historical weakness with OpenStreetMap has been addressing / geocoding. There is also quite a lot of effort going into this area, but it would seem with not as much progress yet as we've seen with routing.

-Peter Batty (on SotM-US 2014)

# Nominatim



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karlsruhe

Where am I?

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## Search Results

### Results from OpenStreetMap Nominatim

County Boundary Karlsruhe, Regierungsbezirk Karlsruhe, Baden-Württemberg, Germany, European Union

City Karlsruhe, Regierungsbezirk Karlsruhe, Baden-Württemberg, Germany

Hamlet Karlsruhe, Remscheid, Regierungsbezirk Düsseldorf, North Rhine-Westphalia, 42499, Germany

Locality Karlsruhe, Gemeinde Pernegg an der Mur, Bezirk Bruck-Mürzzuschlag, Styria, 8132, Austria

City Karlsruhe, McHenry County, North Dakota, United States of America

Residential Karlsruhe, Sohland a. d. Spree, Landkreis Bautzen, Saxony, 02689, Germany, European Union

Information Karlsruhe, A1, Felsenau, Bern, Verwaltungskreis Bern-Mittelland, Verwaltungsregion Bern-Mittelland, Bern, 3047, Switzerland



# Pelias Goals

## Provide high-quality geocoding service

- Advanced full text search
- Fast autocomplete
- Forward & reverse geocoding
- Reduce complexity to build
- Make accessible to developers for contributions
- Easily testable
- Modular design to encourage diverse datasets

# Elasticsearch

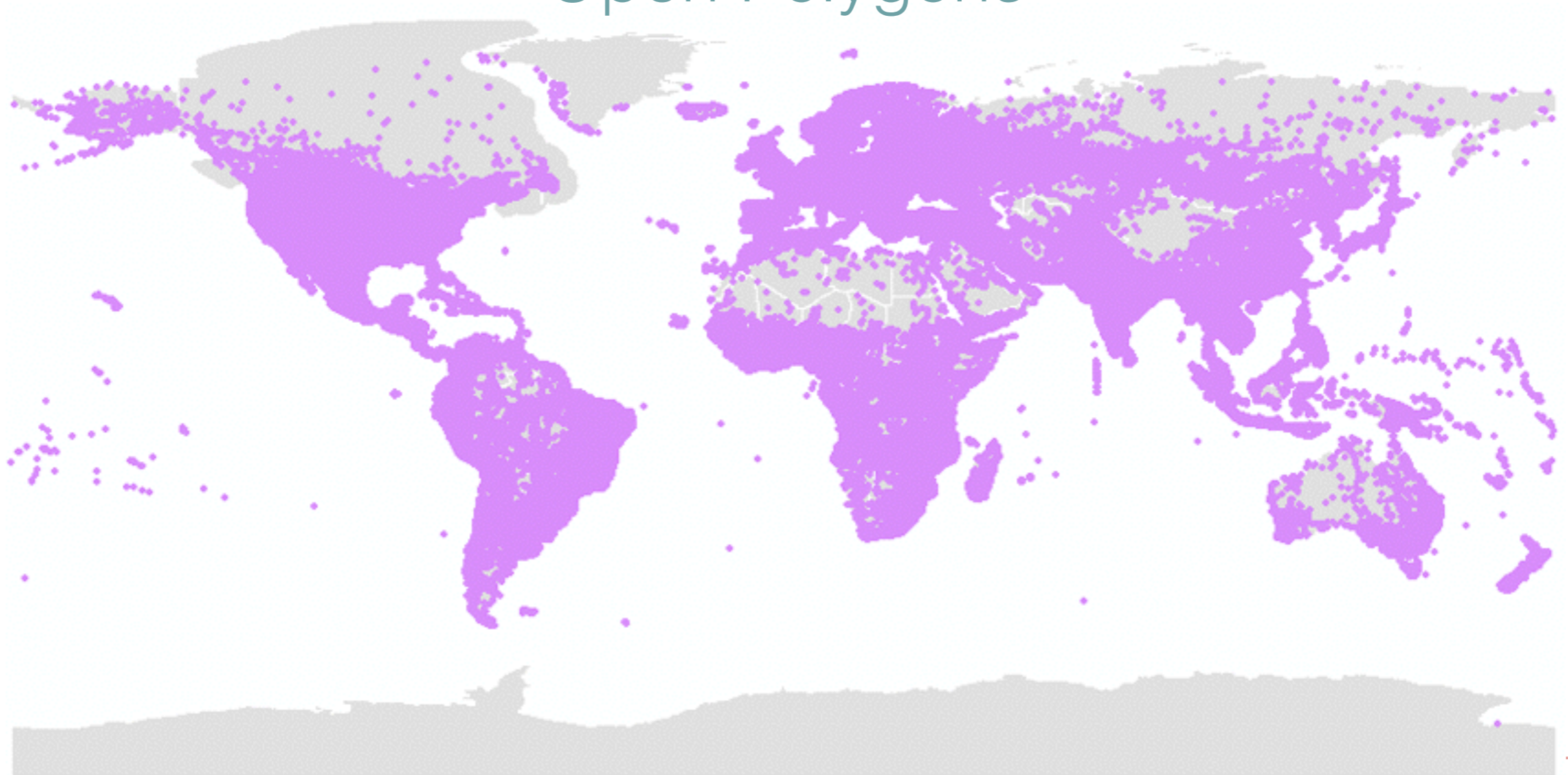
## Start with full text search engine

- Schema-free, document-oriented datastore
- Designed for horizontal scale
- JSON over HTTP, GeoJSON support
- Filter results by distance, bounding box, polygon
- Find shapes containing point
- Completion suggester (fast!), stored in index at index time



# Quattrosshapes

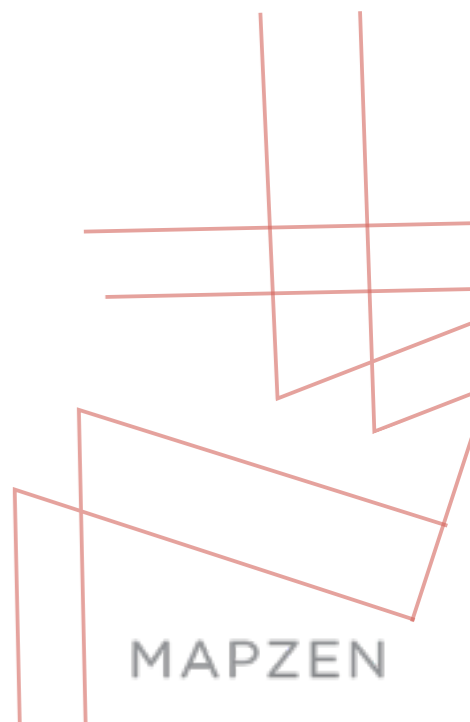
## Open Polygons



# OpenStreetMap

## Reverse Geocode Key Features

- Streets
- Addresses
- POIs





MARZEN

Home

Metro Extracts

Vector Tiles

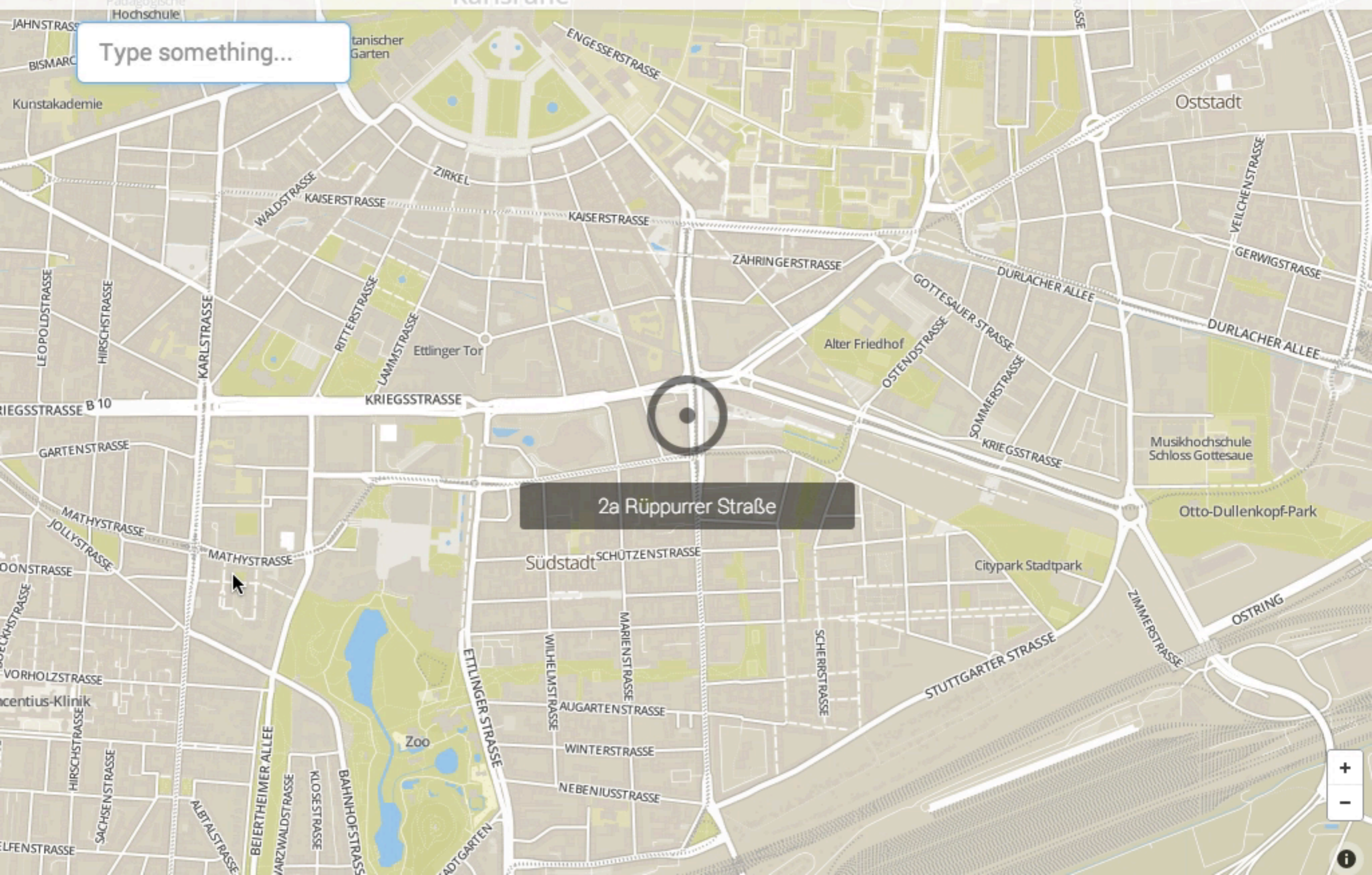
Twitter

Github

Type something...

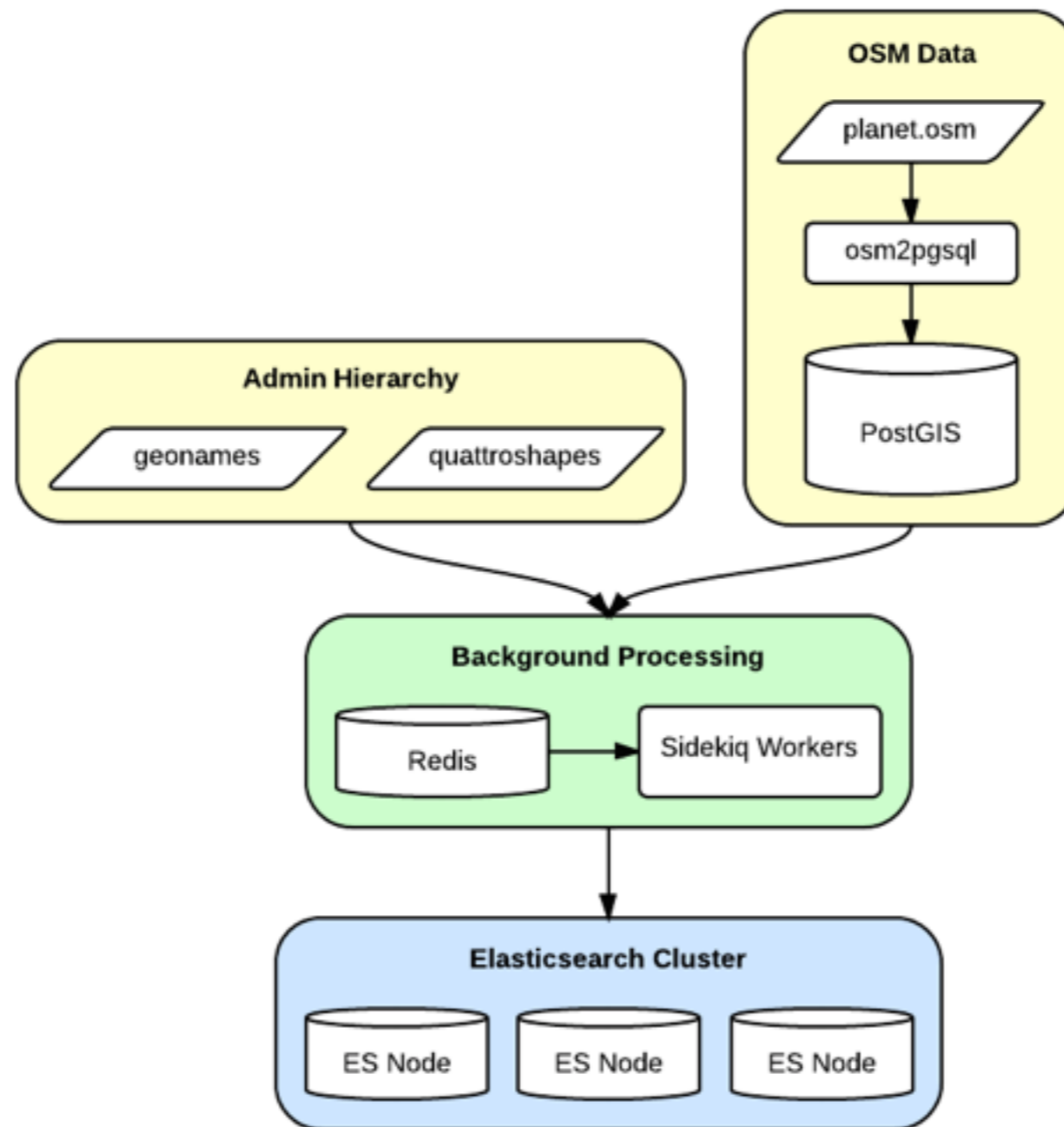
Karlsruhe

2a Rüppurrer Straße



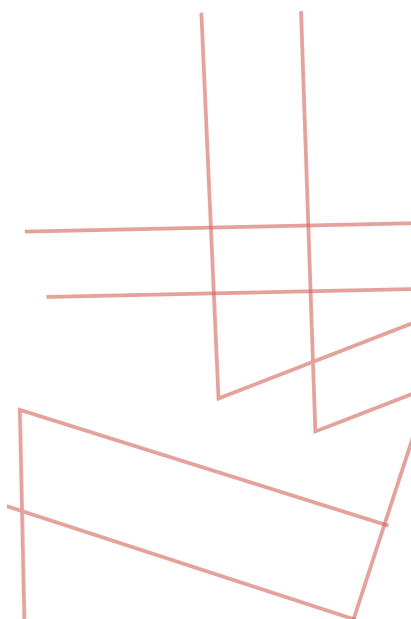
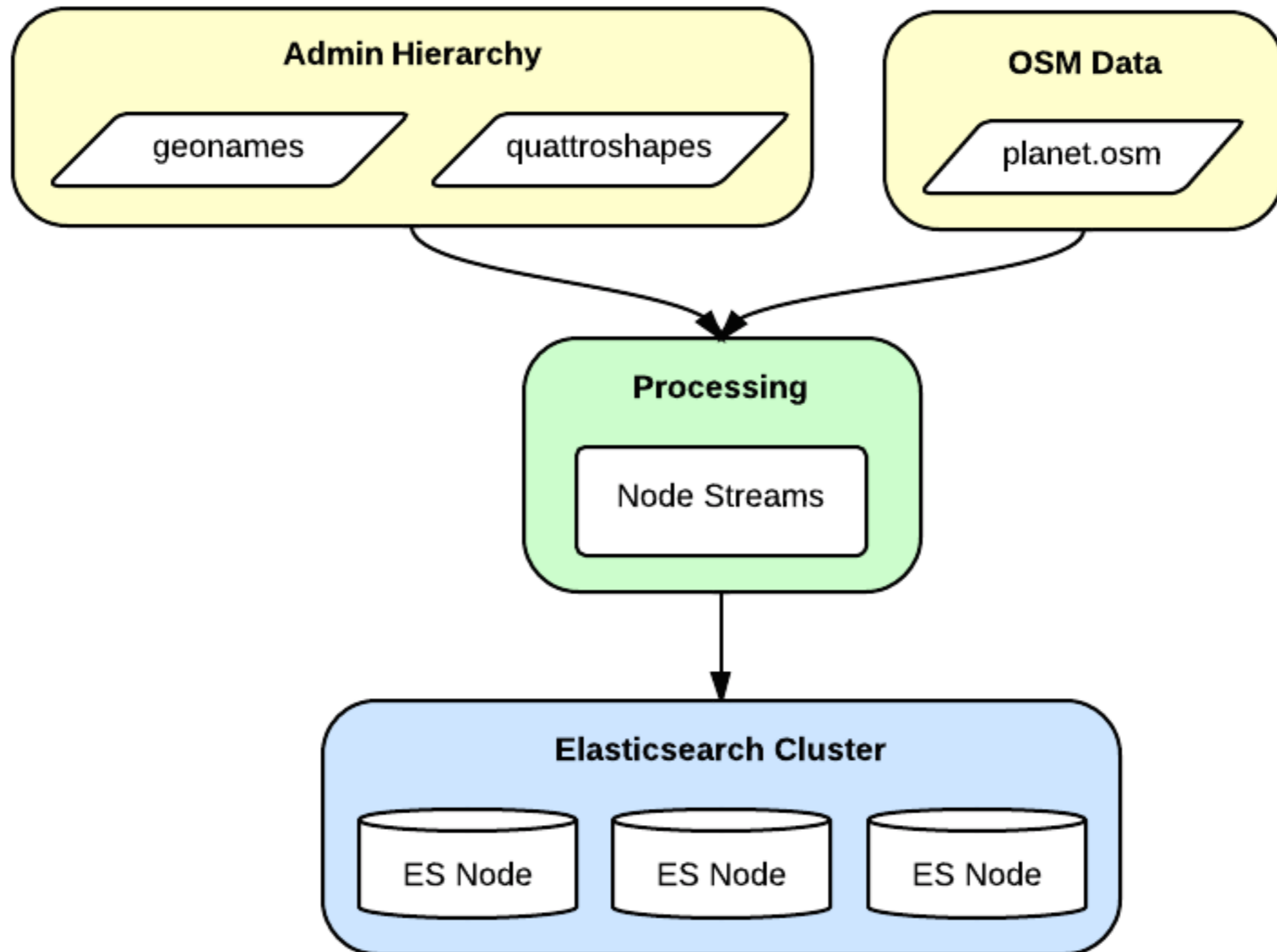
# Current Setup - Ruby

Too Many External Dependencies




# New Setup - Node.js


Streamlined



# Modular

Mix & Match, Add New Sources

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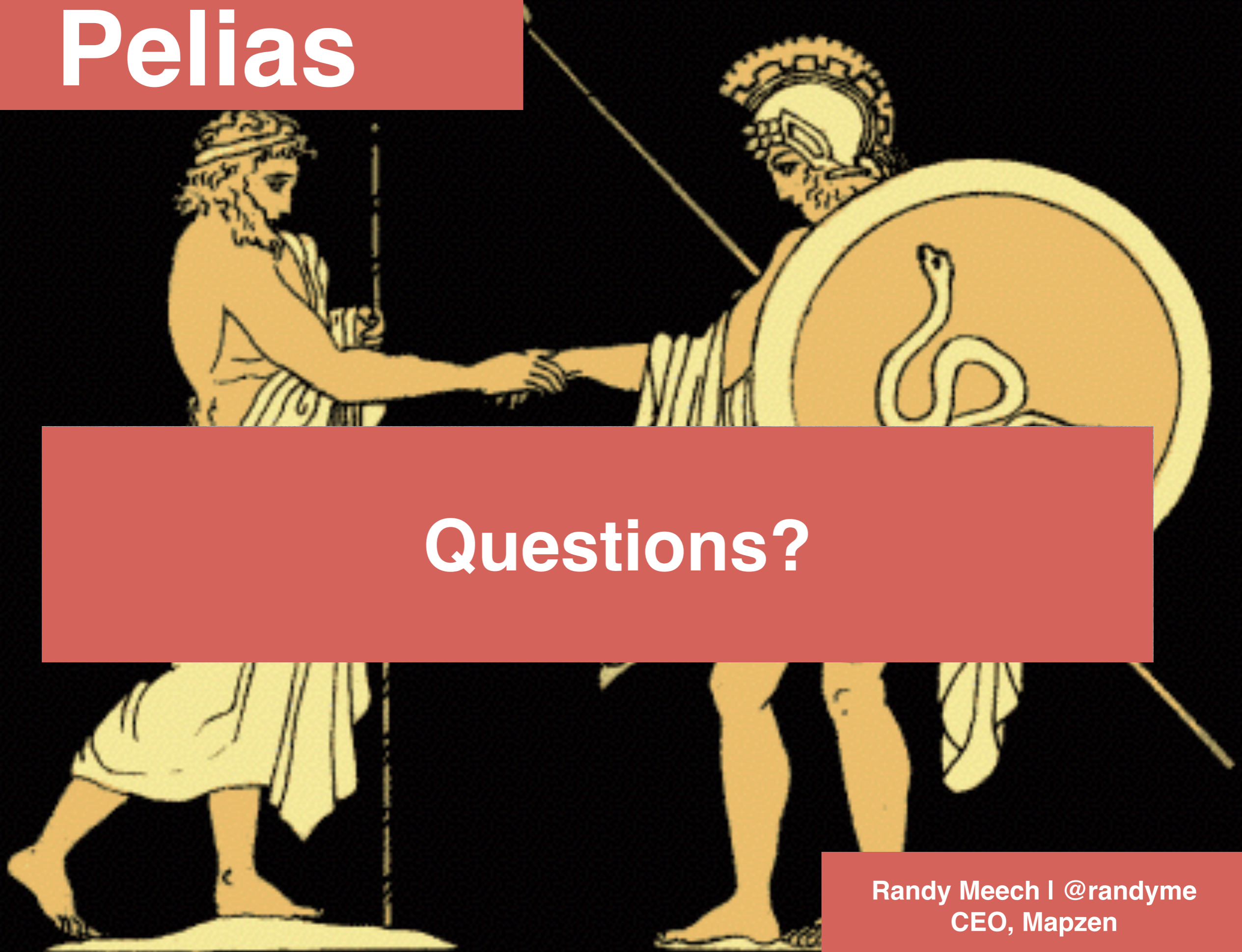
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Questions?

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