
# Spatial Data and Data Driven Architectures

## STL PostGIS Day 2019

**Adam Timm**

# About Adam

Engineer by education,
“geovangelist” by choice


- 16+ years of experience of **“Following the Data”:**
  - USAF – Satellite System Ground Stations
  - Defense Contractor – Airborne ISR systems and data (aka drones)
  - National Geospatial-Intelligence Agency – “GEOINT” systems, producers and users
  - Crunchy Data
- Worked with/for/as:
  - Engineer
  - Program Manager
  - Product Owner
  - Military and Intel Community users
  - Technology leader

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# Let’s start at the end…

# Companies and organizations everywhere are trying to:

## Grow

## Generate more revenue

## Deliver better mission results

## Save more lives

## Create more value

Data Analytics

Data Pipelines

Data Science

Big Data

Artificial Intelligence

Machine Learning

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# Building you're data analytics, machine learning and AI house

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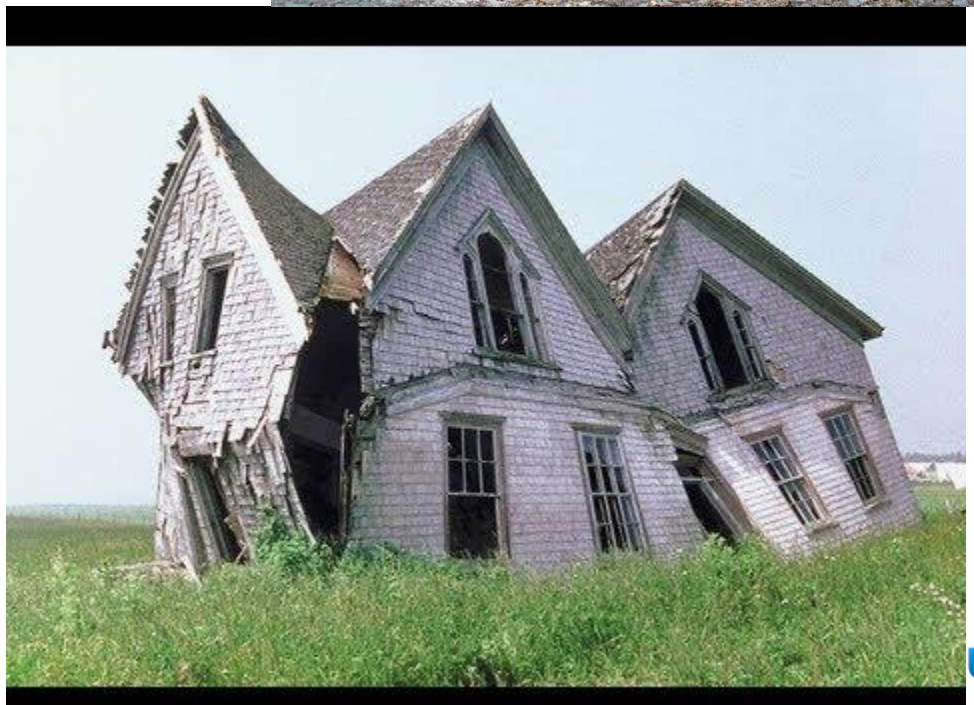

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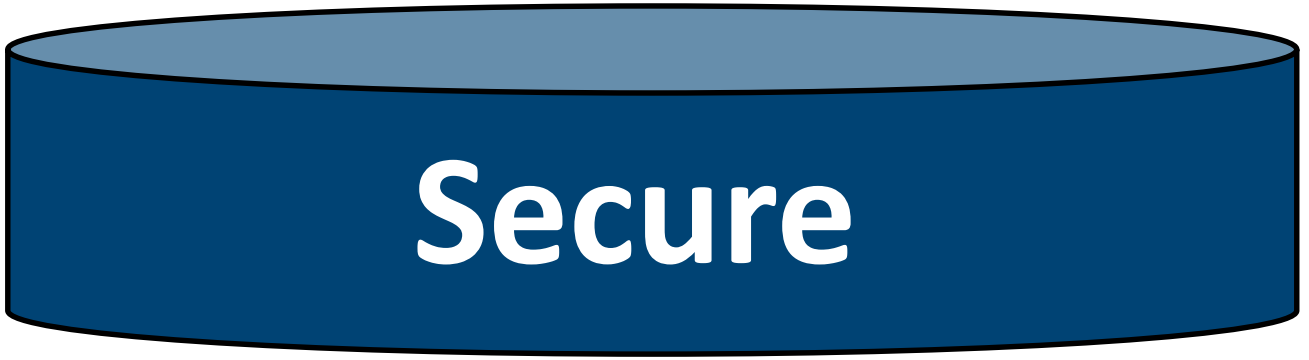
# Focus on the data

Your database should be

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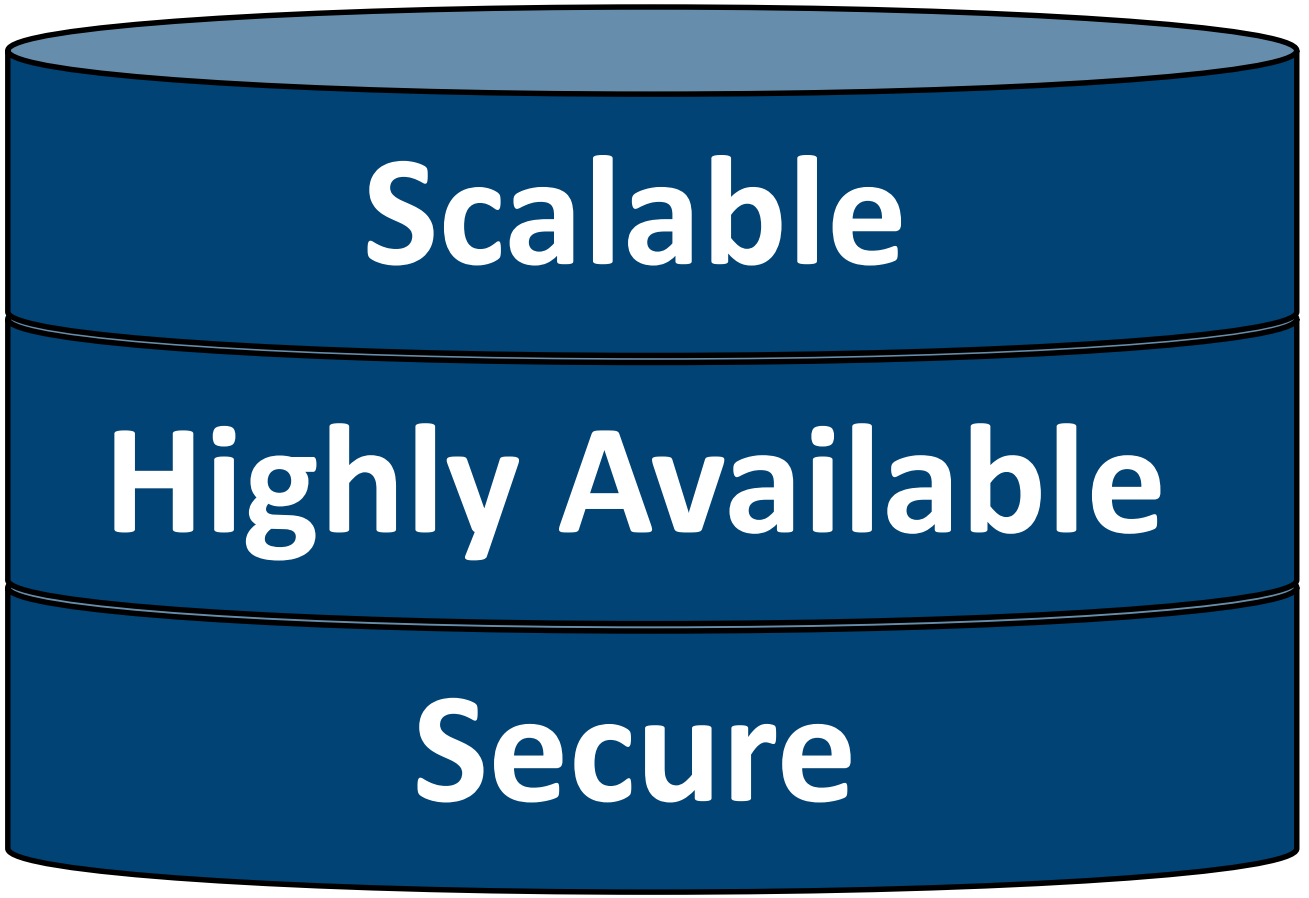


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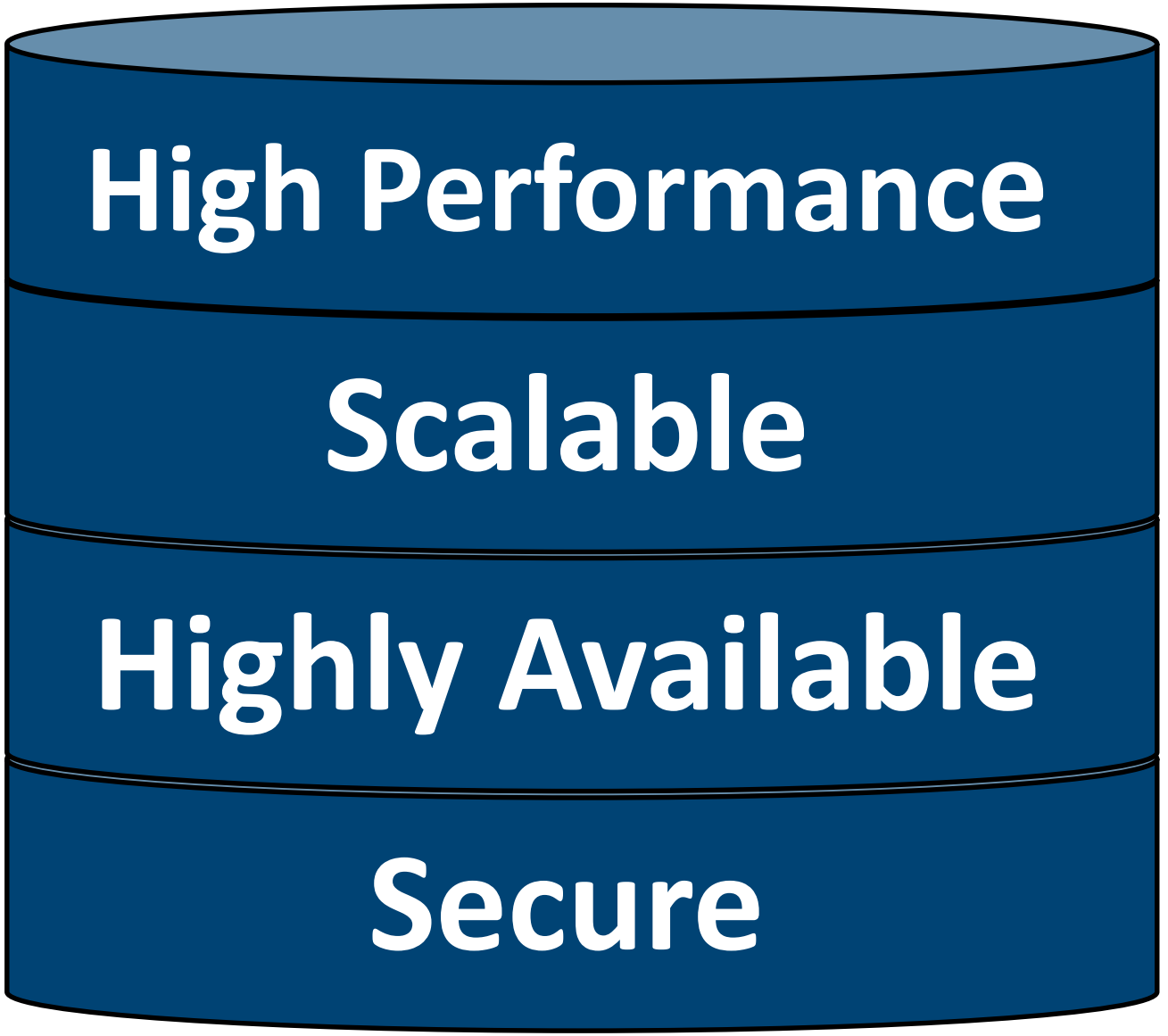


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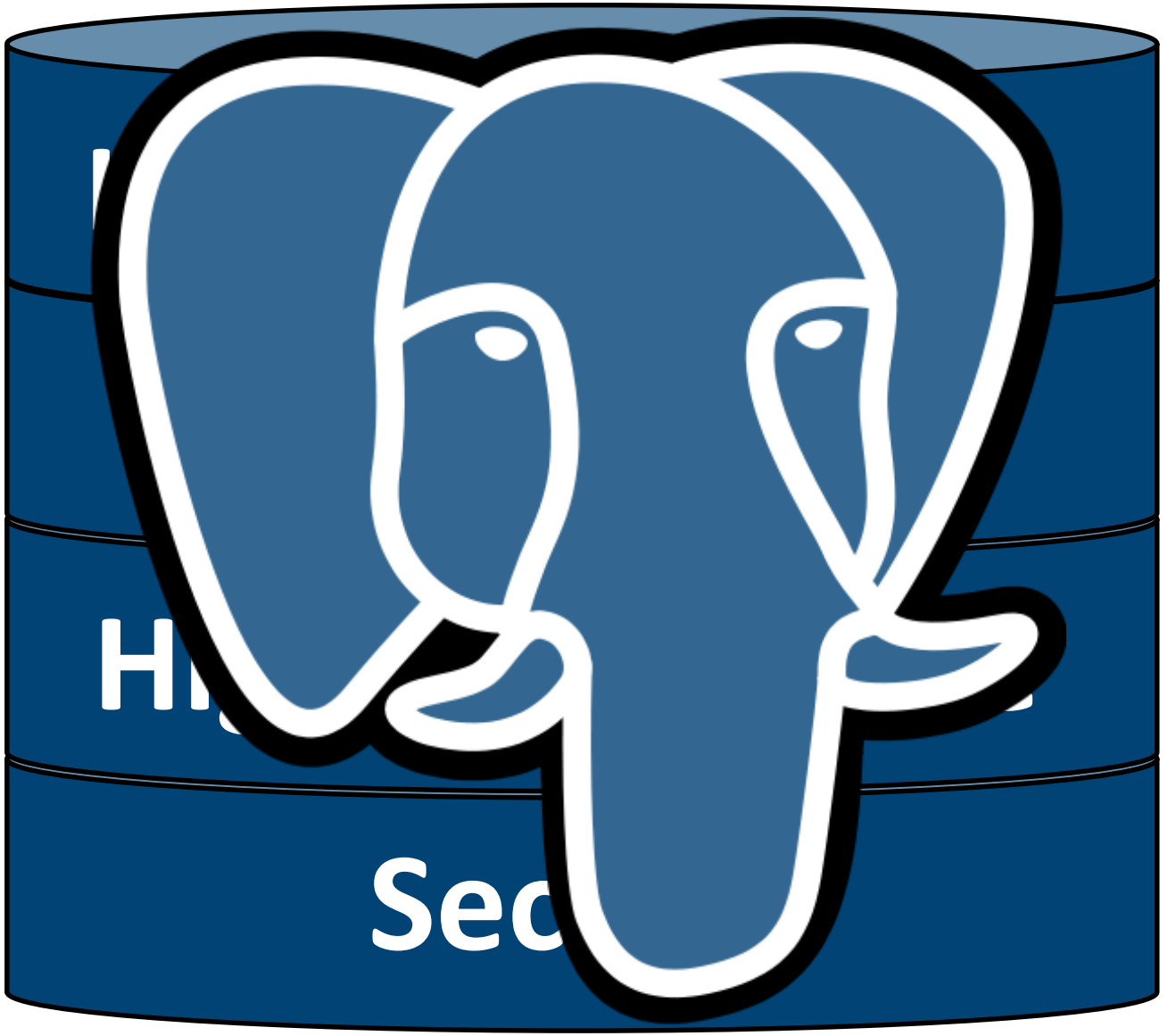

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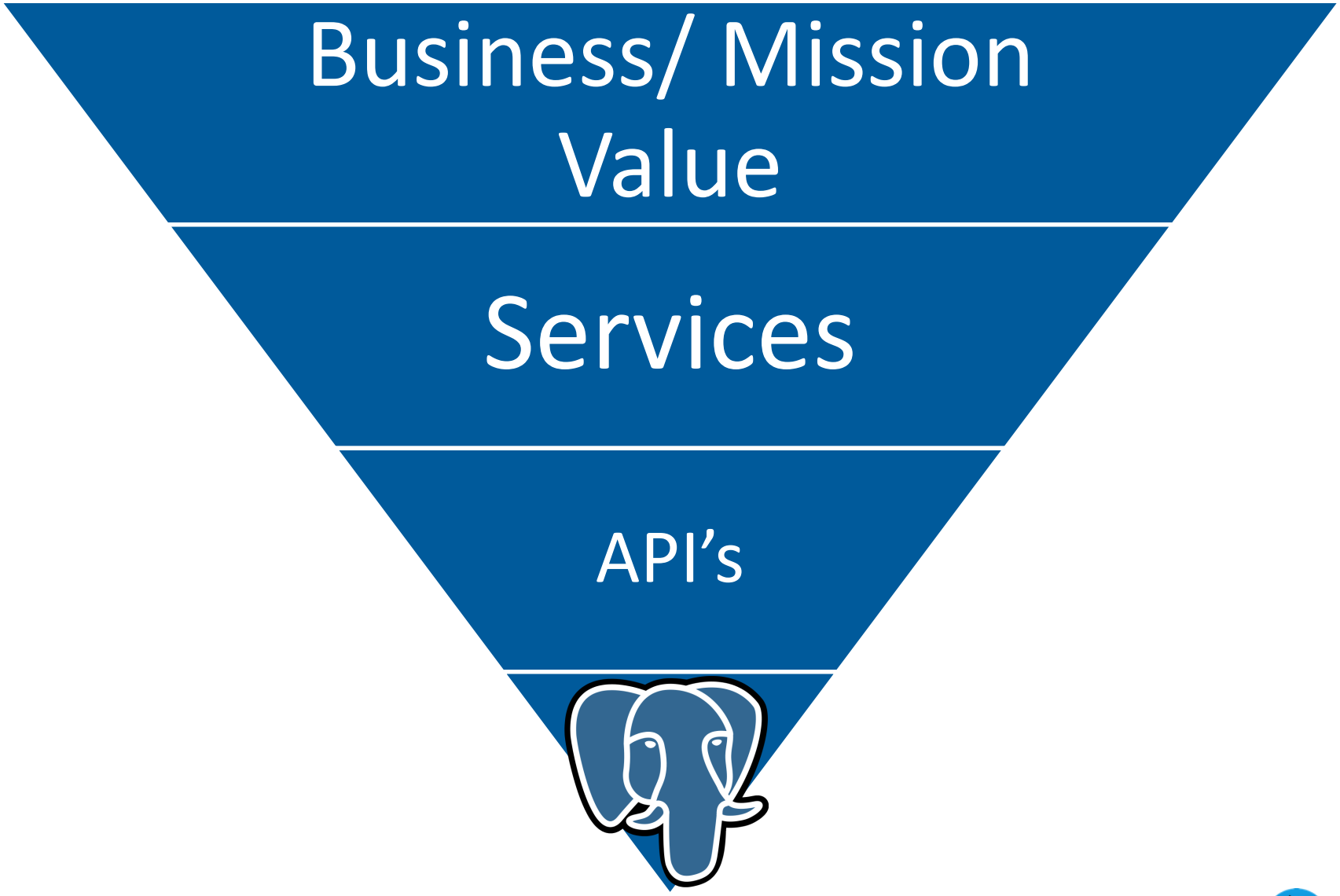
# What do I do when I have robust, secure, highly available database?

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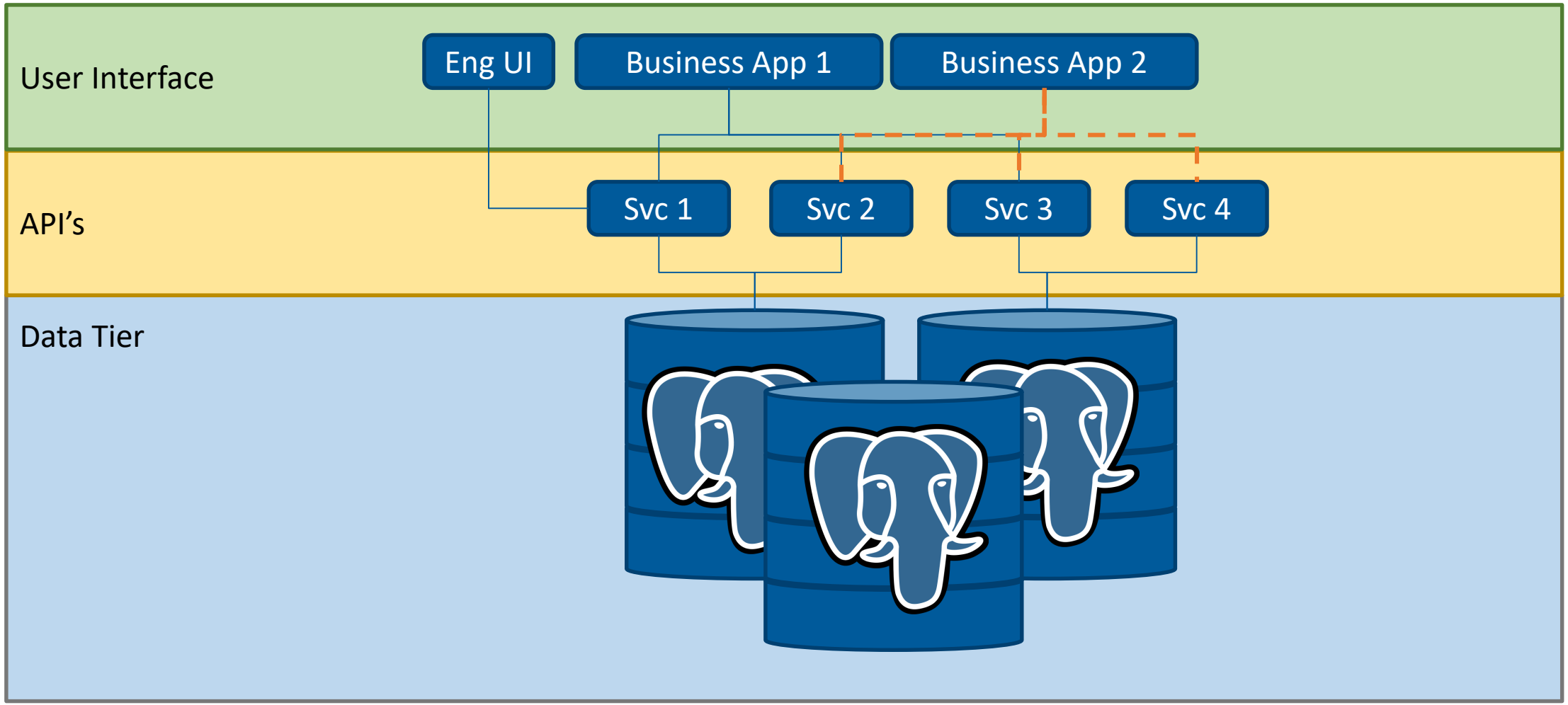
# Data Driven Architectures



# Are you taking advantage of ALL of the data in your enterprise?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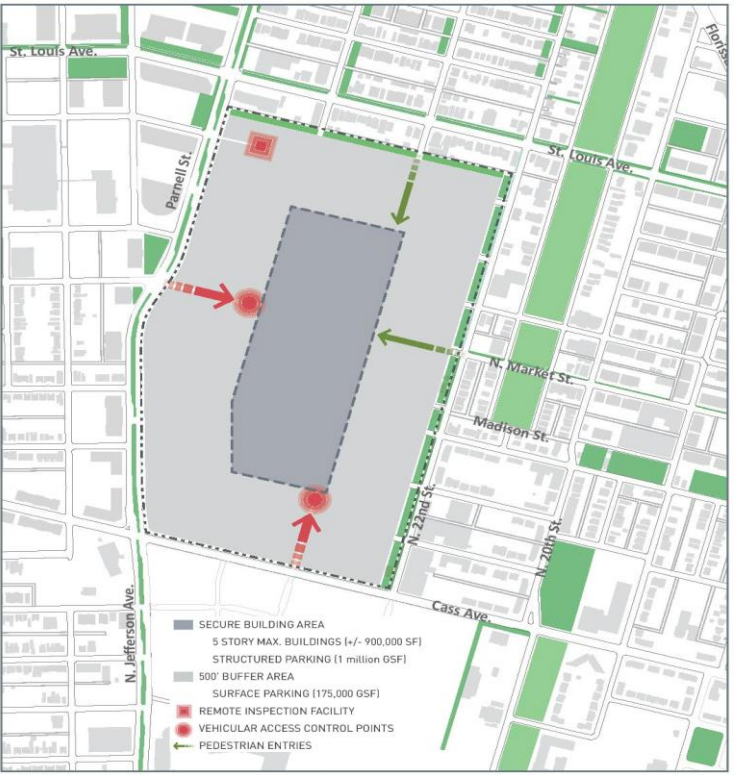
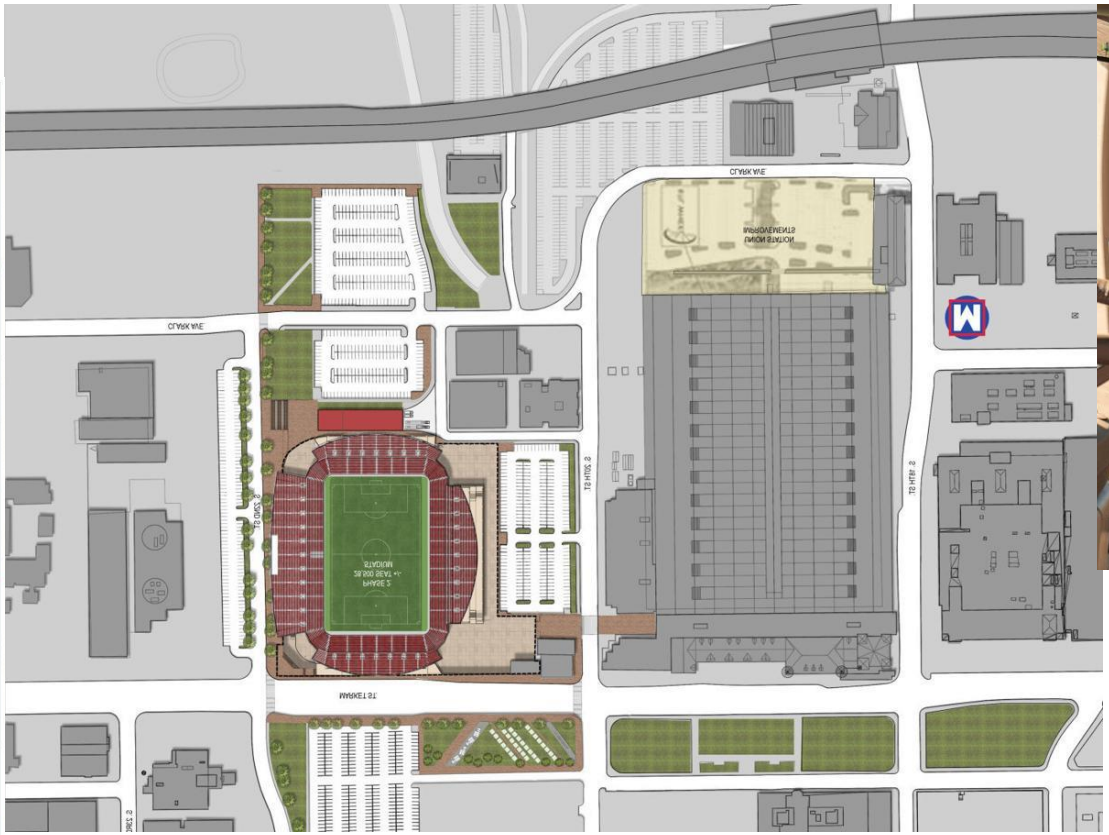
# Typical uses of geospatial data

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# New producers and consumers of spatial data





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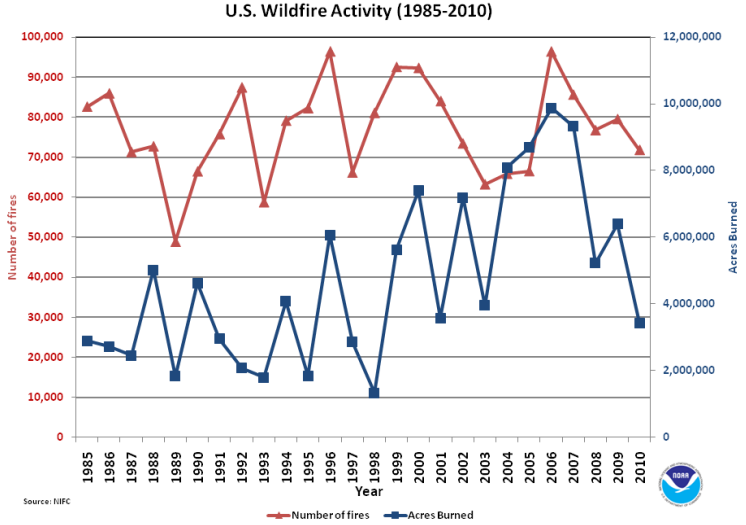
# Why Spatial

## Sales Data

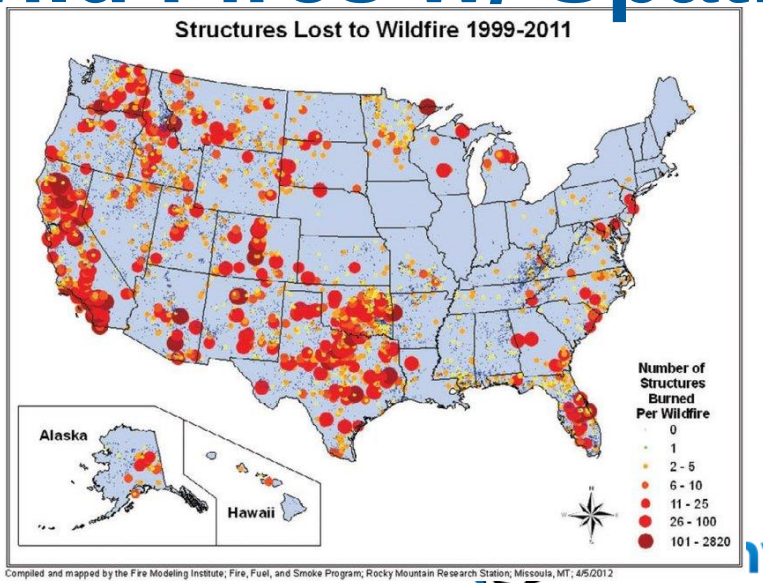
| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Sales Representative | Location | Region | Customer | Order Date | Item | Quantity | Price | Total Sale Amount |
| 2 | Sara Snyder | New York | East | Phyllis Johnston | 2016-10-30 | Things | 1 | 17.83 | 17.83 |
| 3 | Sara Snyder | New York | East | Kimberly Little | 2016-05-23 | Junk | 3 | 12.42 | 37.26 |
| 4 | Frances Warren | Massachusetts | East | Justin Dixon | 2016-09-27 | Widgets | 4 | 53.35 | 213.4 |
| 5 | Sara Snyder | Massachusetts | East | Shirley Rivera | 2016-02-12 | Junk | 5 | 12.42 | 62.1 |
| 6 | Diane Gonzalez | Oregon | West | Marilyn Franklin | 2016-02-14 | Things | 8 | 17.83 | 142.64 |
| 7 | Patrick Graham | Washington | West | Henry Sanders | 2016-04-11 | Widgets | 4 | 53.35 | 213.4 |
| 8 | Sara Snyder | Connecticut | East | Benjamin Phillips | 2016-09-02 | Junk | 4 | 12.42 | 49.68 |
| 9 | Frances Warren | New Jersey | East | Theresa Torres | 2016-11-26 | Junk | 4 | 12.42 | 49.68 |
| 10 | Patrick Graham | Oregon | West | Roger Bell | 2016-07-13 | Junk | 10 | 12.42 | 124.2 |
| 11 | Sara Snyder | New Jersey | East | Harold Matthews | 2016-06-02 | Junk | 3 | 12.42 | 37.26 |
| 12 | Frances Warren | New York | East | Roy Young | 2016-06-02 | Widgets | 8 | 53.35 | 426.8 |
| 13 | Sara Snyder | New York | East | Debra Allen | 2016-02-20 | Things | 1 | 17.83 | 17.83 |
| 14 | Randy Watson | Connecticut | East | Alan Dean | 2016-06-07 | Junk | 7 | 12.42 | 86.94 |
| 15 | Randy Watson | Massachusetts | East | Robin Matthews | 2016-10-31 | Stuff | 5 | 16.32 | 81.6 |
| 16 | Randy Watson | New York | East | Randy Burton | 2016-03-13 | Stuff | 4 | 16.32 | 65.28 |
| 17 | Patrick Graham | Washington | West | Terry Nguyen | 2016-02-10 | Widgets | 10 | 53.35 | 533.5 |

## Sales data w/ Spatial


## Wildfire Data




## Wild Fires w/ Spatial

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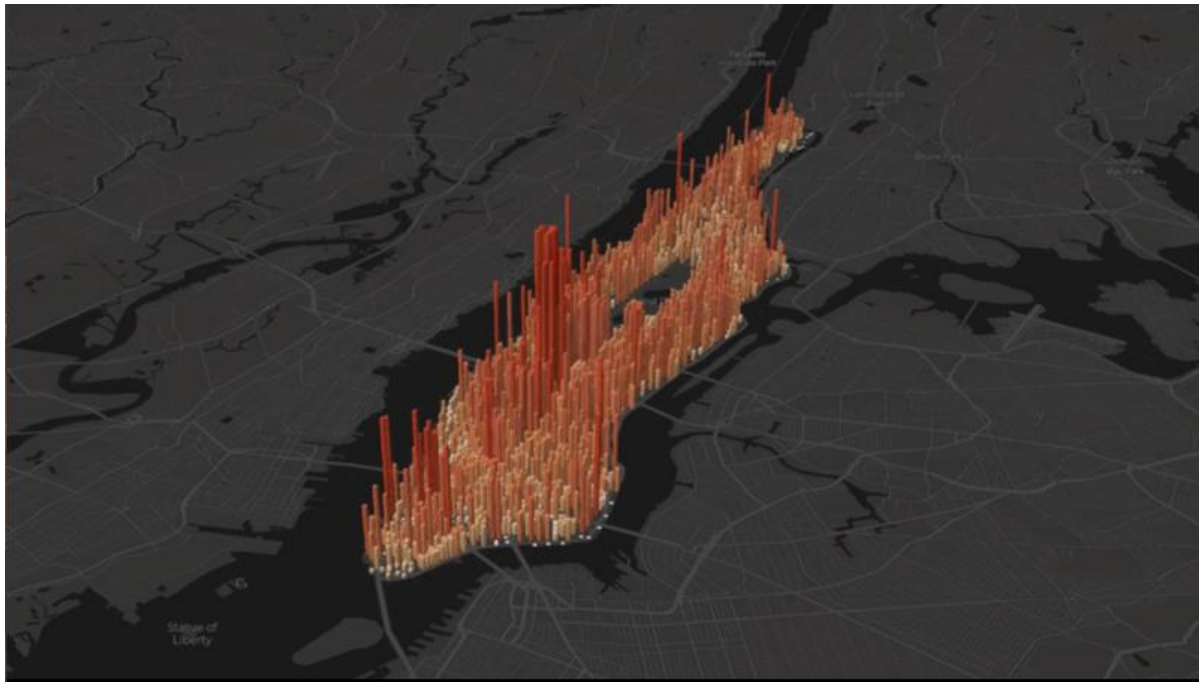
# Why Spatial



Credit: http://manpopex.us/


Data Visualization - New York City: One Day on Waze | Waze

Credit: https://www.youtube.com/watch?v=QFv7AFRmmTs

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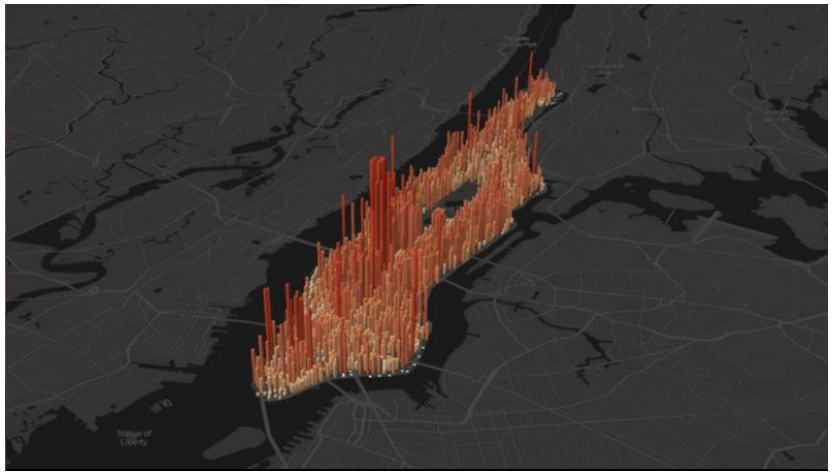
# How do I get from

Business/Mission Value

Services

API's

to

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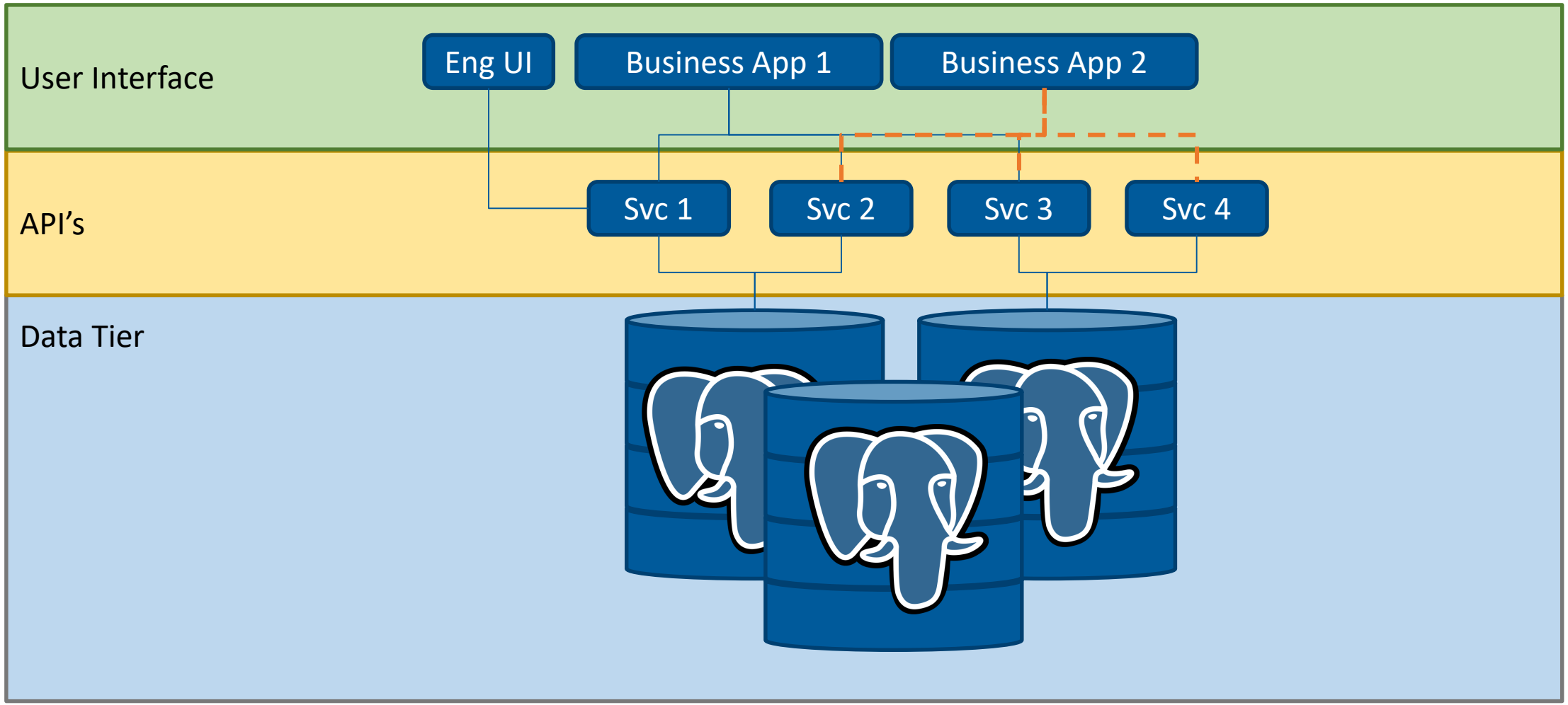
# Data Driven Architectures



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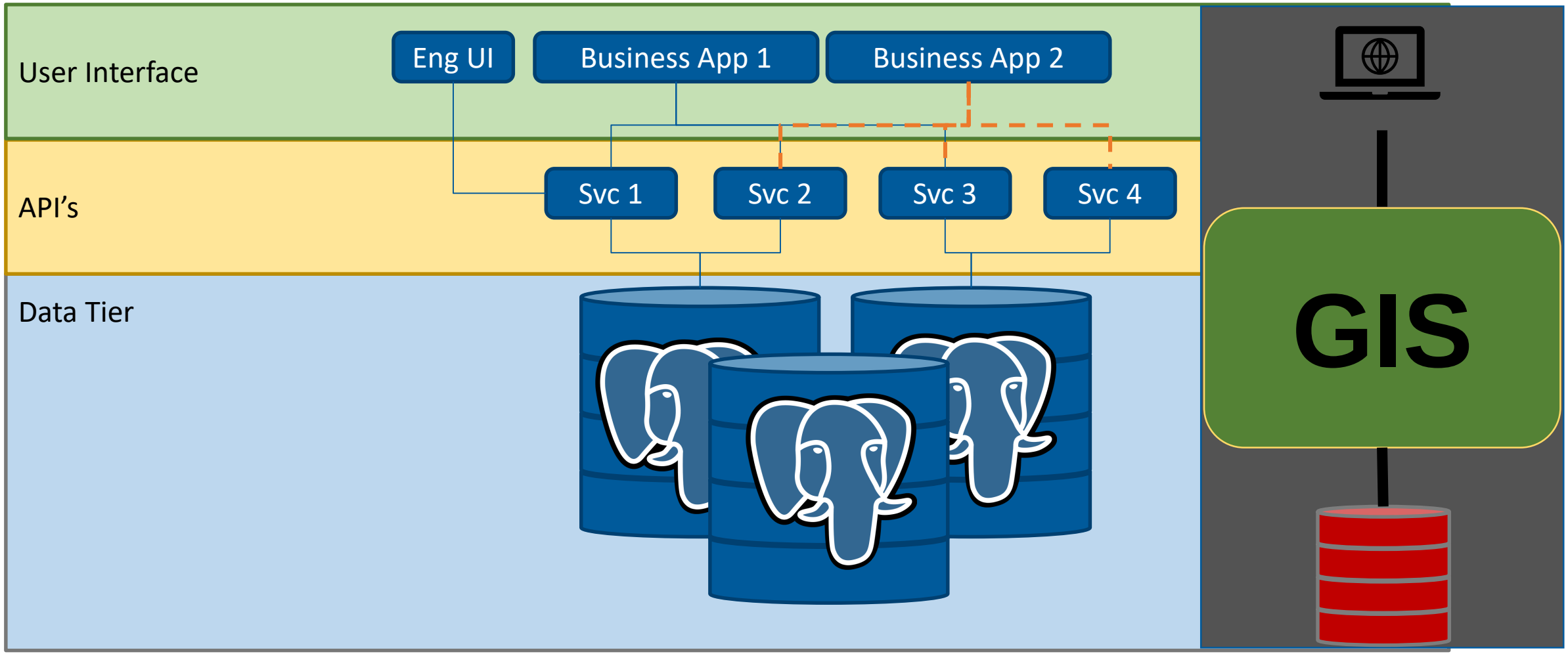

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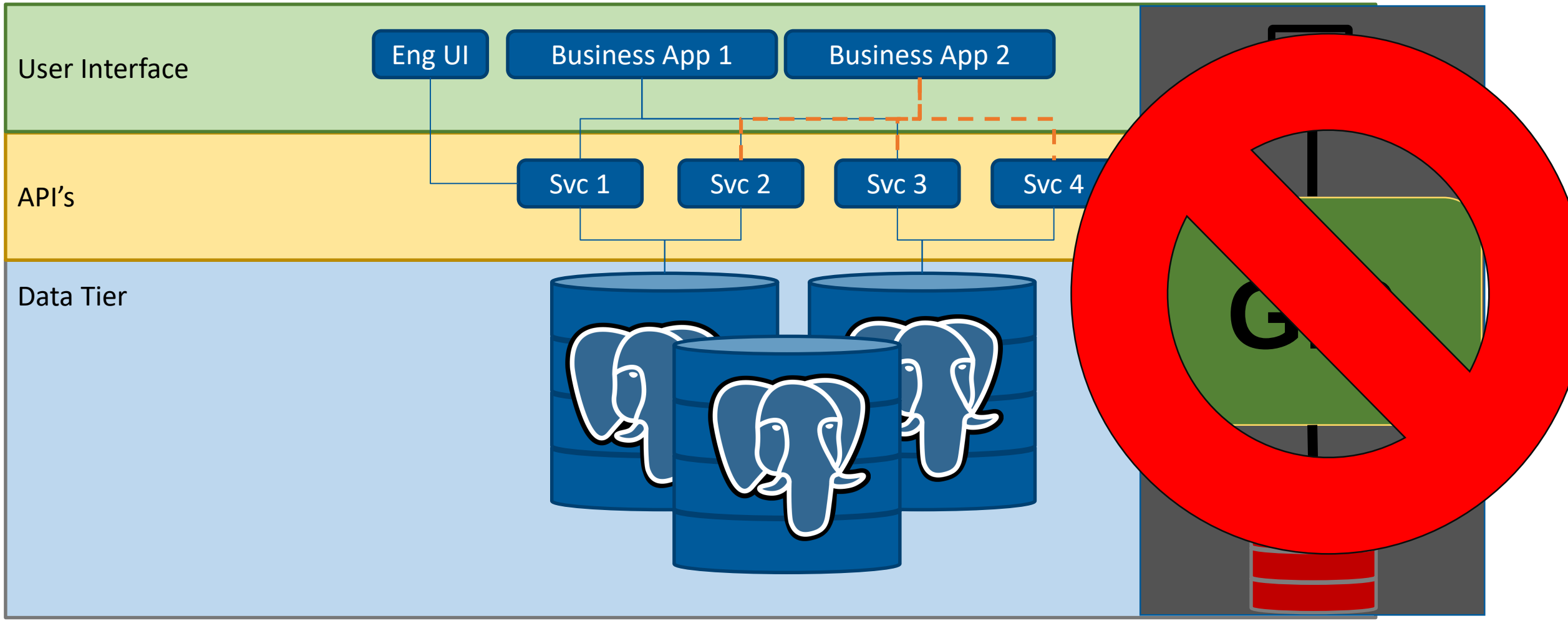

# Spatial is not special


It's Magic

# “CREATE extension postgis;”

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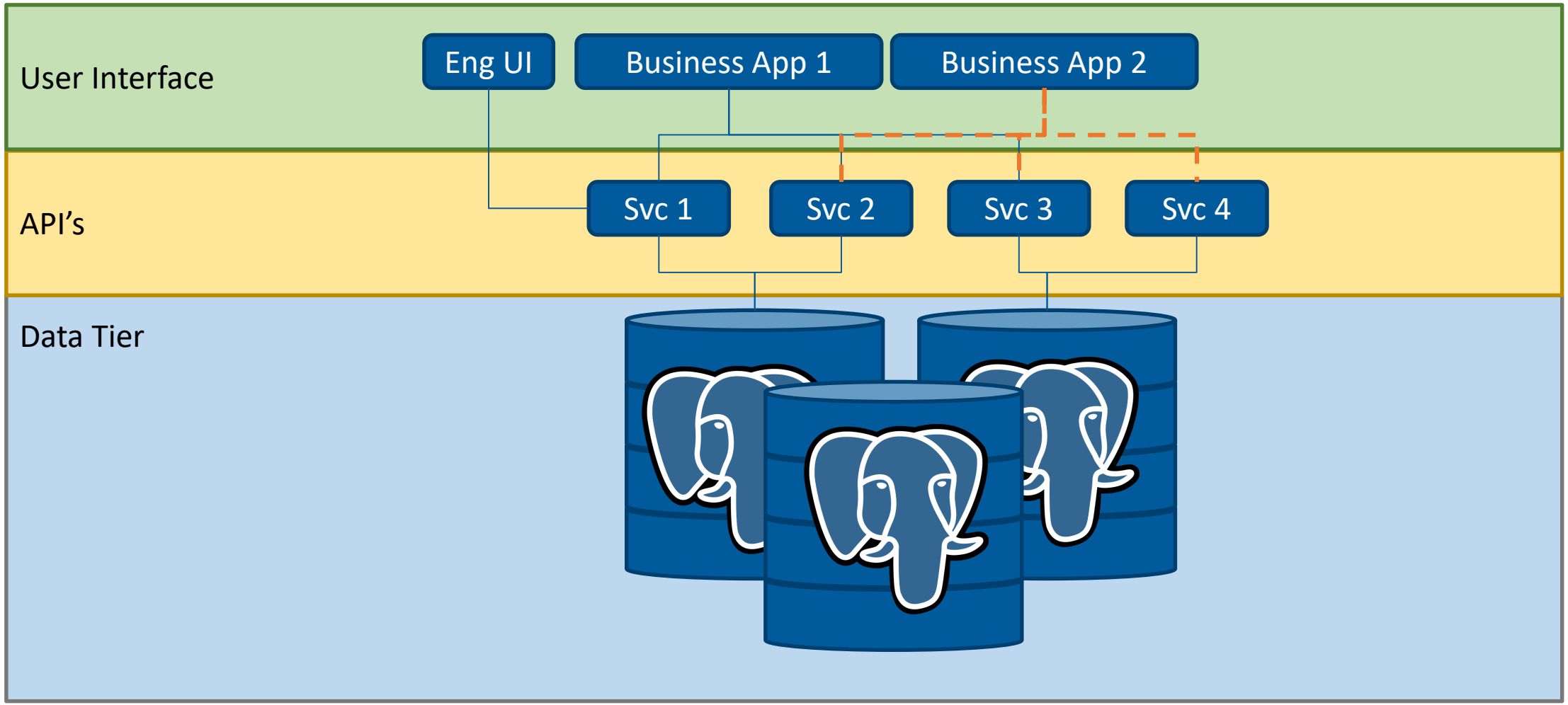
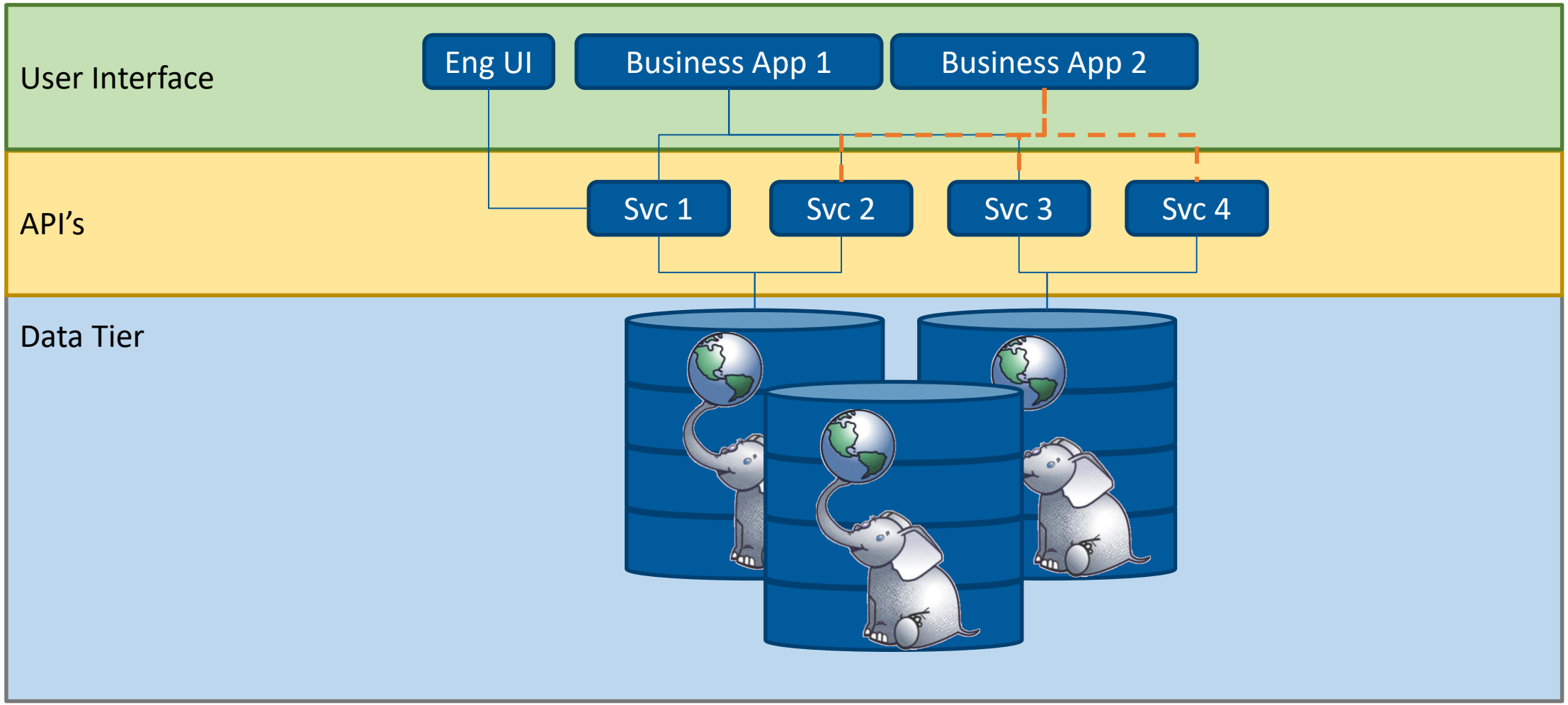
# Data Driven Architectures



# Geospatial Data Driven Architectures (aka GIS)

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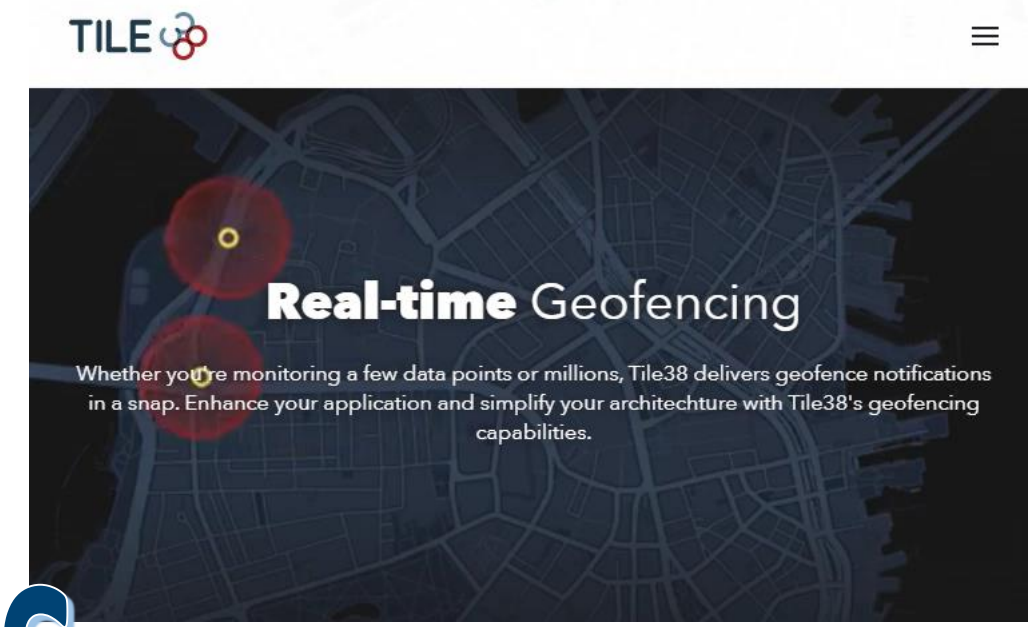
# A mature and growing opensource geospatial ecosystem





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# Open Source as a viable and valuable component to your enterprise

- Open source has matured to a point where it is not only viable option for your enterprise, it should be you're first choice (just ask your data scientists)
- Open source spatial services and standards enable enterprises to more easily incorporate spatial data into their business
- There are more third party integrations with Postgres and PostGIS than with proprietary options
- Postgres and PostGIS have exceeded propriety options in terms of features and performance
- There is a mature and growing ecosystem of geospatial components to help you maximize the value of spatial data in your enterprise.

# What new insights and value can spatial data unlock for your organization?

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