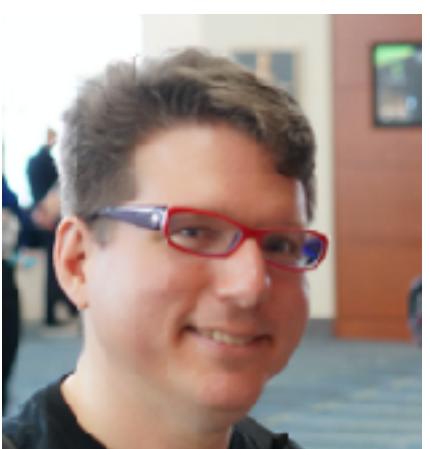




Boundless
State of GeoGig



The Main GeoGig Team



David Blasby
 Boundless



Hannah Bristol
 Boundless



Erik Merkle
 Boundless



Gabriel Roldan
 Boundless



Johnathan Garrett
 Prominent Edge

GeoGig Releases

2016 Q4

1.0

- First official LocationTech release!
Core functionality complete.



LocationTech

2017 Q2

1.1

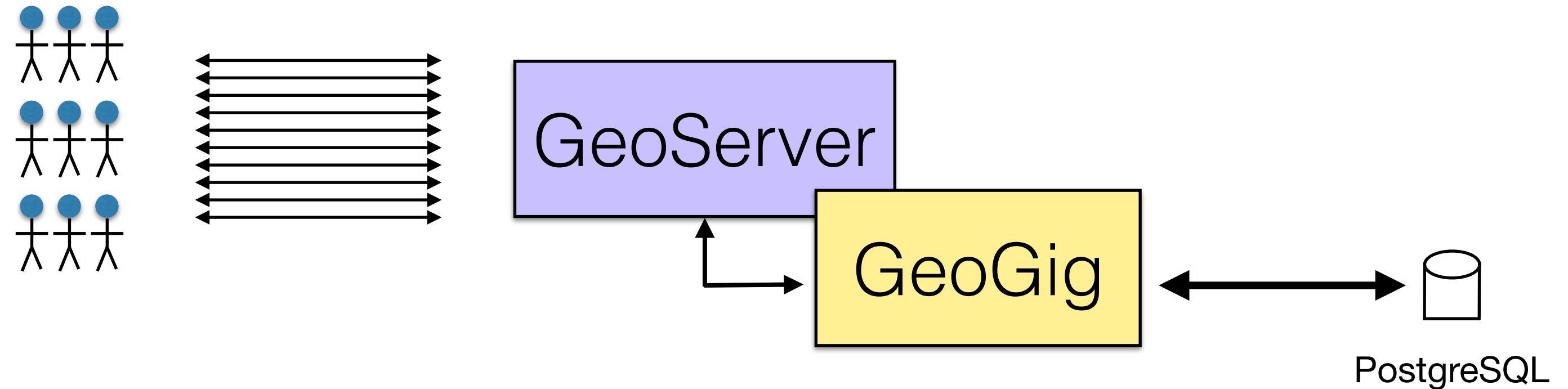
- Optimization for direct GeoGig Querying.
Spatial-with-attributes index.

2017 Q3

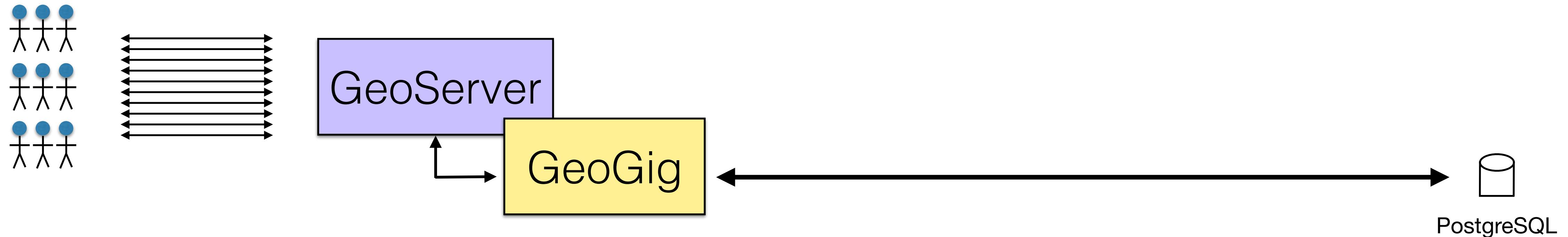
1.1.1

- More optimization for GeoGig inside GeoServer
GeoServer Clustering Support

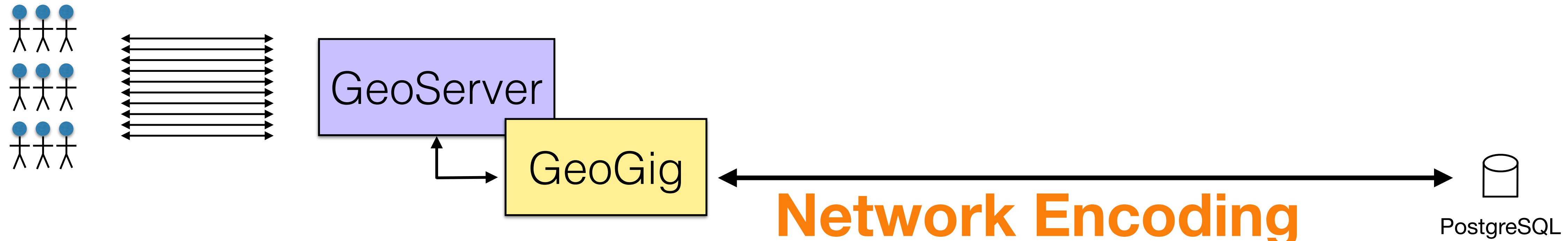
1.1.x Series



1.1.x Series



1.1.x Series

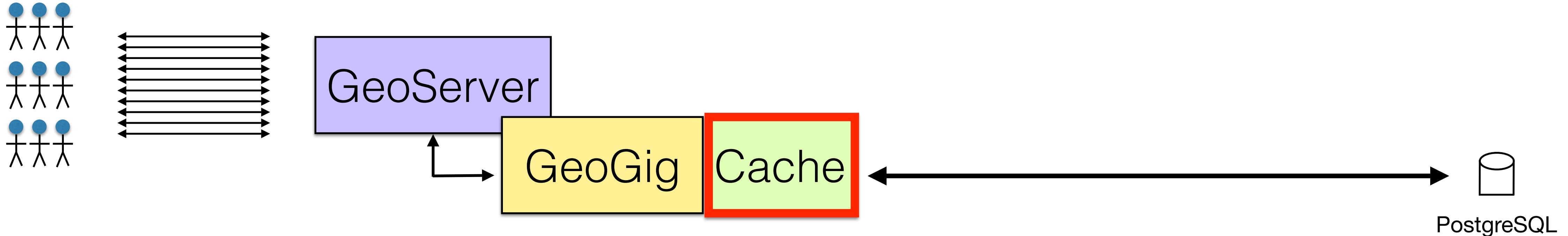


Network Encoding

- 1.1 - twice as small as 1.0
- 1.1.1 - another 25% smaller

Almost 3* smaller!

1.1.x Series

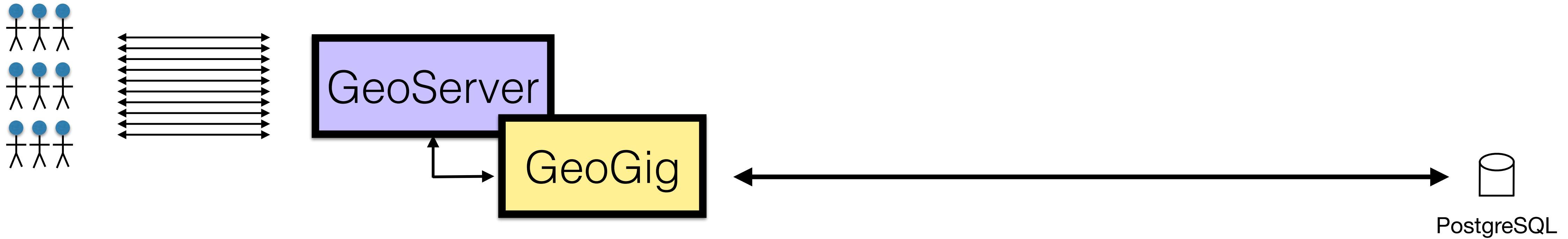


In-Memory Cache

- lots of performance improvements!
- easy to configure
- view usage statistics

| status | | |
|-----------------------------|-------------|---|
| Property | Value | Description |
| Number of objects | 872284 | Approximate number of revision objects in the cache |
| Size in MB | 475.483 | Approximate cache size in MB |
| Maximum size in MB | 2,730 | Currently configured maximum cache size in MB |
| Maximum size % | 0.75 | Configured maximum cache size as a ratio of the JVM maximum heap memory |
| Absolute maximum size in MB | 3,276.9 | Absolute maximum size the cache can be configured to |
| Default cache size in MB | 2,730.75 | Default cache size as given by configuration parameters |
| Eviction count | 0 | Number of times an entry has been evicted |
| Hits count | 1216228 | Number of times lookup methods have returned a cached value |
| Hits rate | 0.577 | Ratio of cache requests which were hits |
| Miss count | 891956 | Number of times a cache lookup resulted in a non cached value |
| Miss rate | 0.423 | Ratio of cache requests which were misses |
| Refresh | Clear cache | |

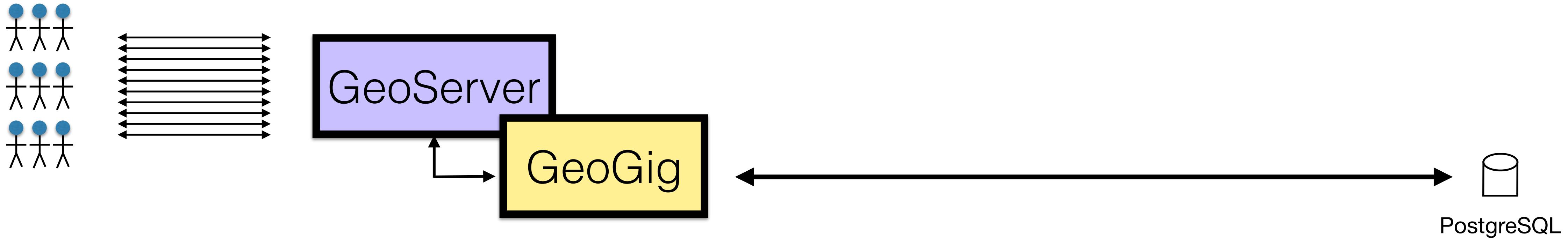
1.1.x Series



Rendering Performance Improvements

- took a deep look at the rendering process
- made many optimizations

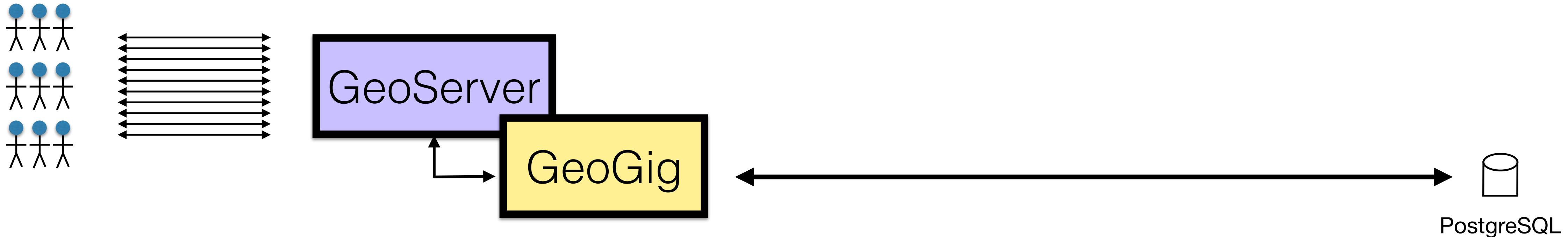
1.1.x Series



Clustered GeoServer Deployments

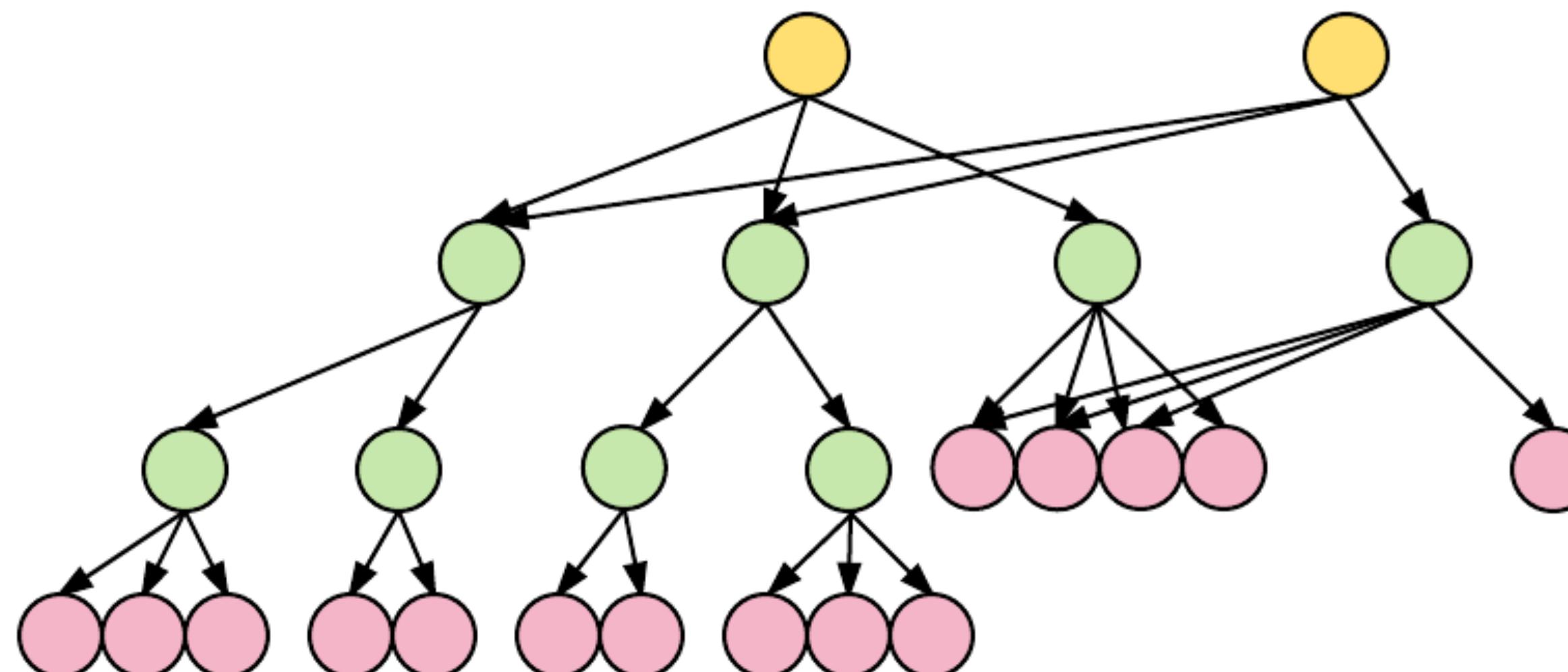
- made sure GeoGig functioned with GeoServer's Resource API
- watch out for the size of the memory cache

1.1.x Series

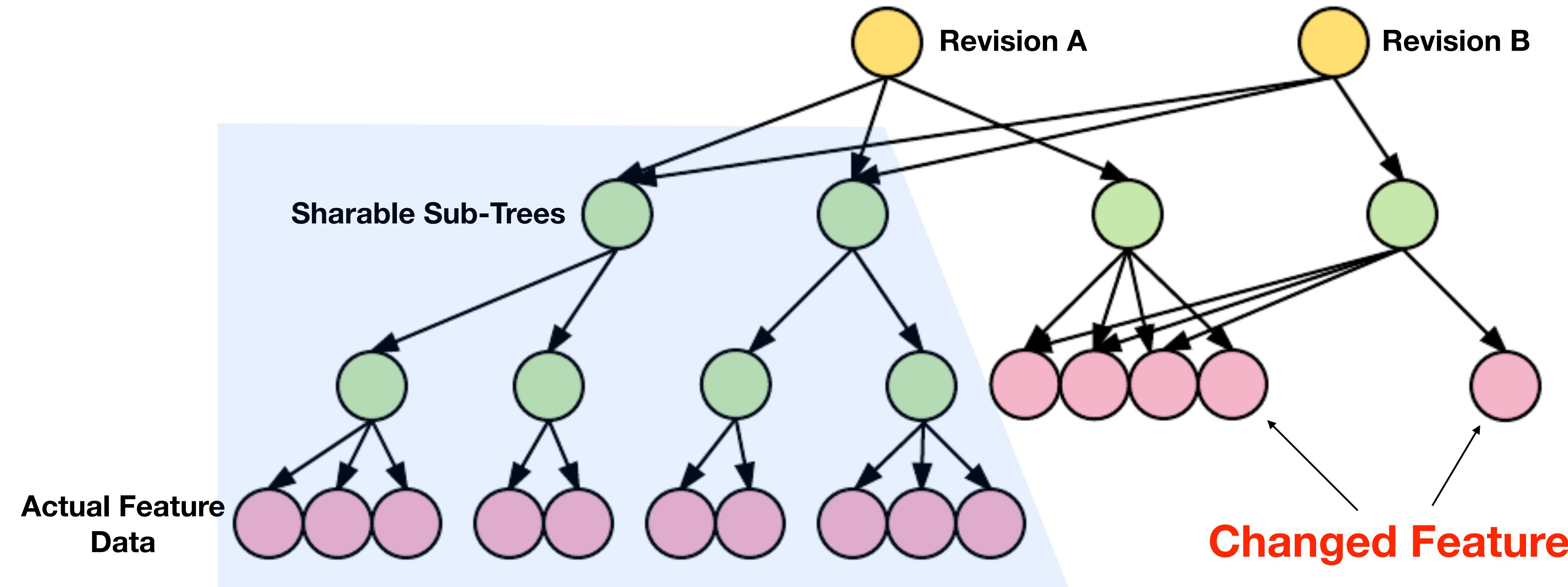


Spatial-With-Attributes Index

- Biggest task in 1.1.x
- Huge performance improvements



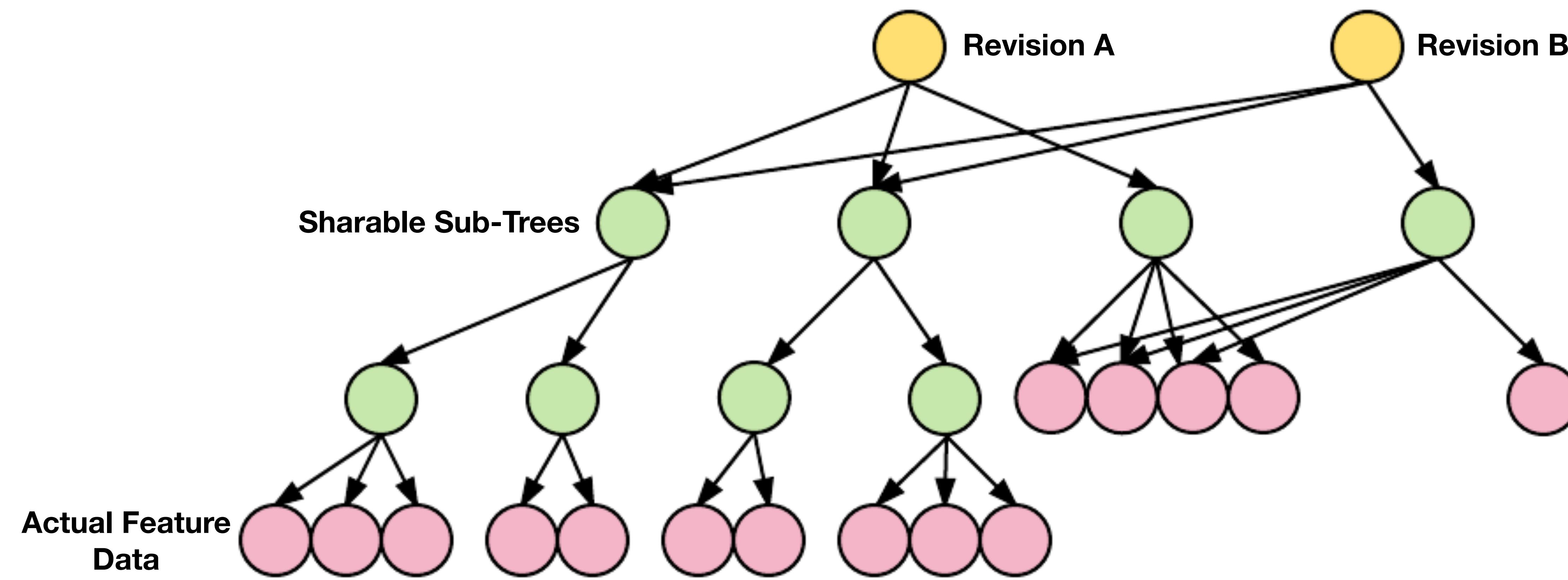
Spatial-with-Attributes Index



GeoGig holds most of its information in two places

- A revision-sharing hash (Merkle) index tree
 - Actual feature data

Spatial-with-Attributes Index



When you want to **Query features in a revision**;

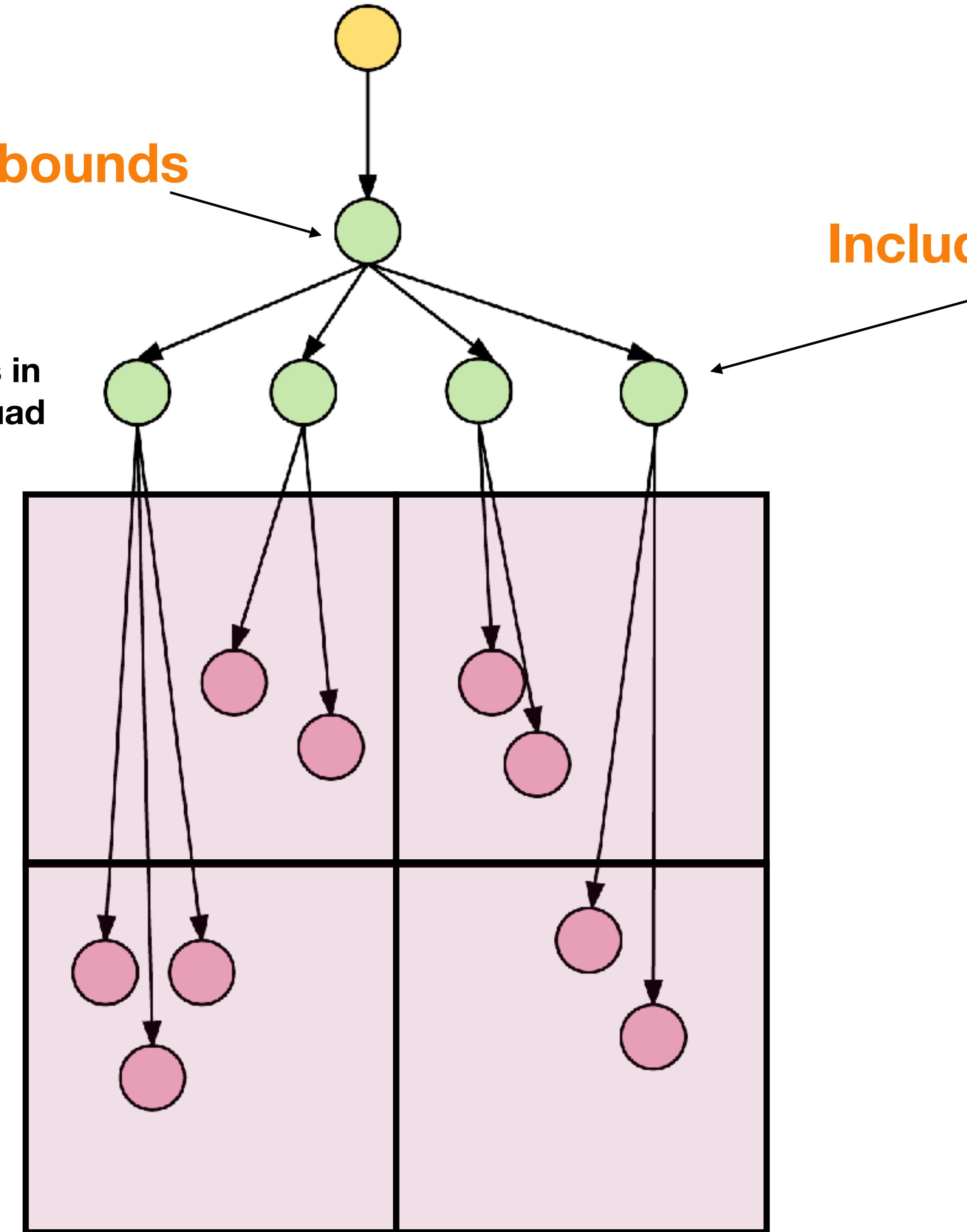
- a) **Scan through the tree**
- b) **Request the features**

Quad-Tree

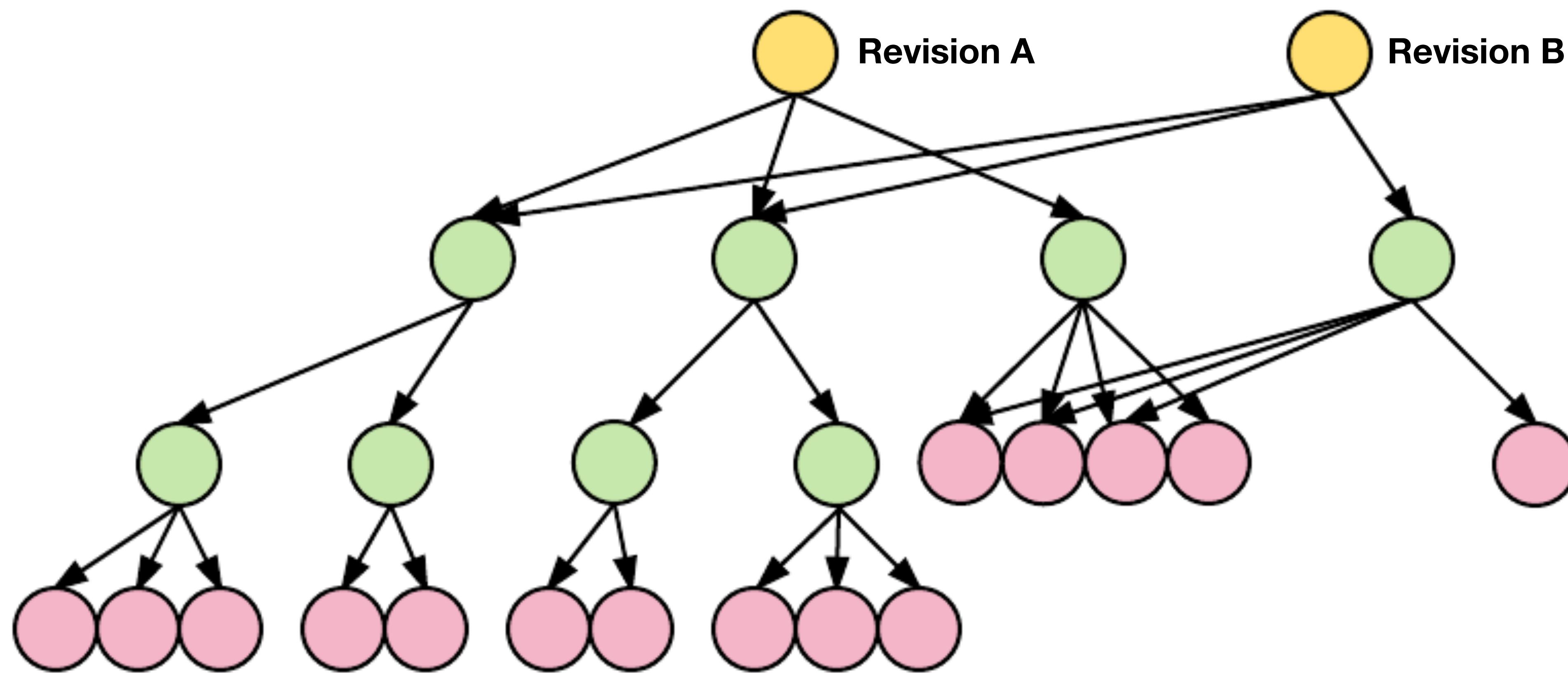
Includes sub-tree bounds

Includes feature bounds

Features in
Same Quad



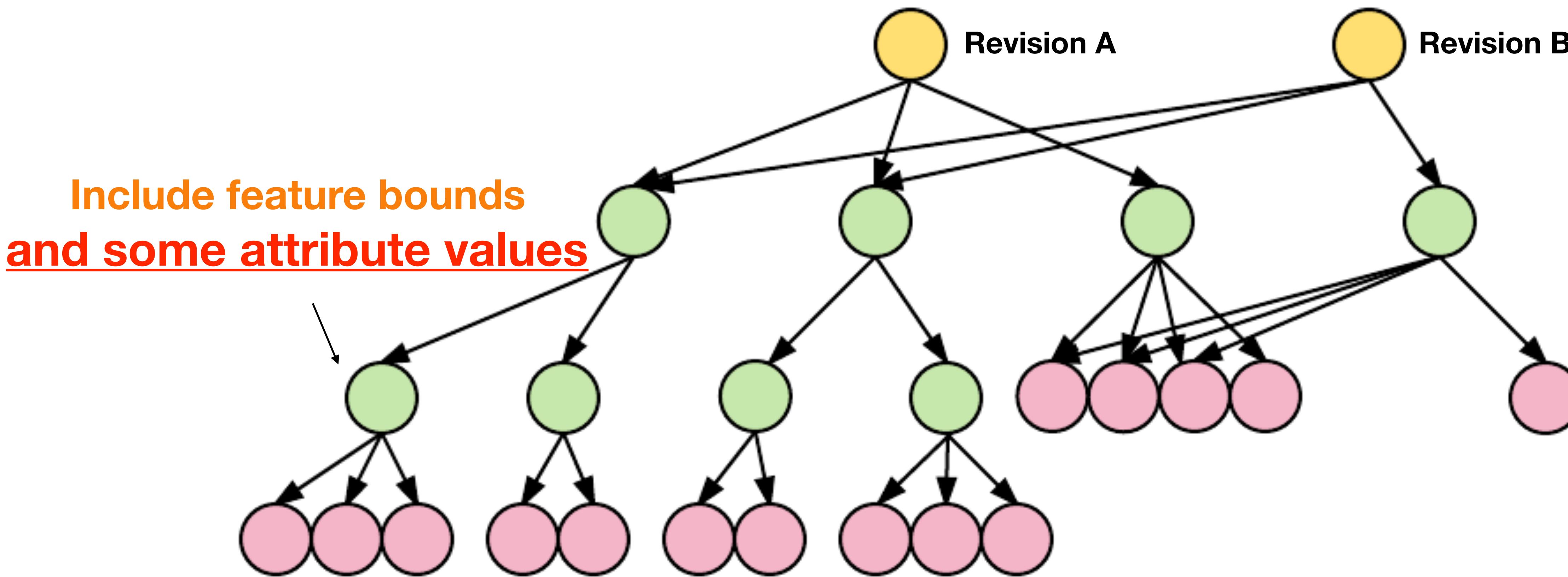
Spatial-with-Attributes Index



What about attribute Queries?

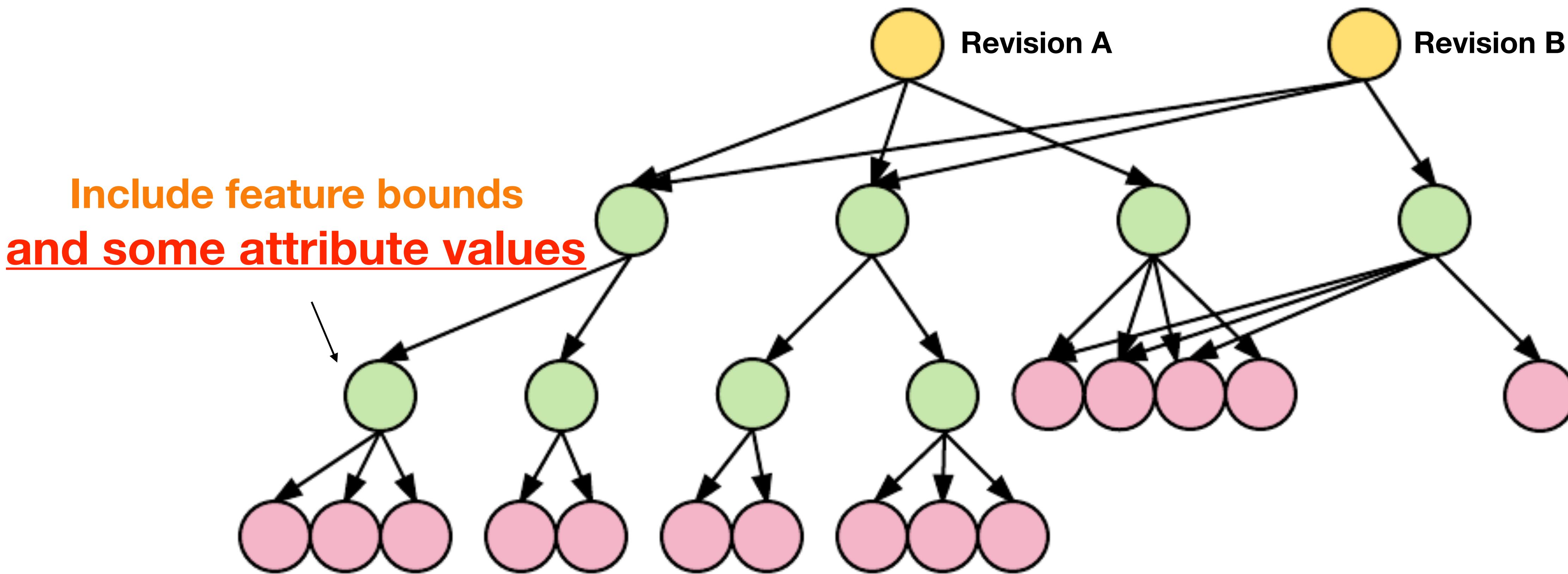
- Just draw *Highways* from a roads dataset
- Just draw a *time-slice* of data from a time-enabled layer

Spatial-with-Attributes Index



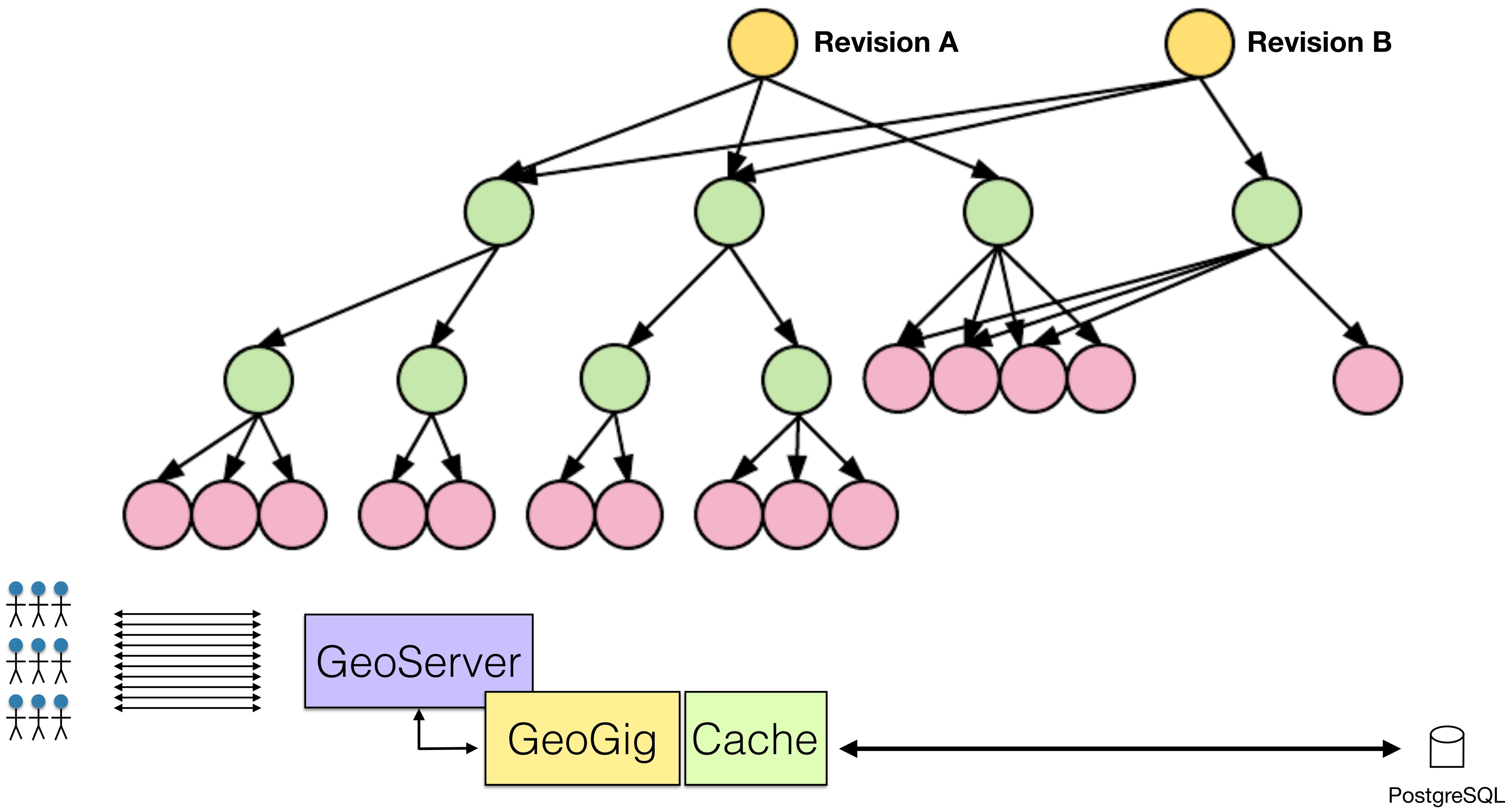
We add some of the feature's attribute data to the leaf nodes
HUGE performance boost

Spatial-with-Attributes Index



Optimize queries and retrieval

Spatial-with-Attributes Index



1.1.x - Where are we?



The performance improvements in this release open the door to many more use cases for GeoGig implementations. Boundless is excited to have a newly sharpened version of this powerful tool.

Zach Rouse - Boundless Exchange

GeoGig spatial indexing, specifically the flexibility to materialize any spatial or non-spatial attribute is a key performance enhancement yielding immediate value for spatio-temporal queries.

Clarence Davis - StoryScapes



1.0 - Core Functionality, LocationTech Graduation
1.1.1 - Performance meeting/beating expectations

Where are we going?

- 1.2
 - Changes required for GeoServer 2.12 release (REST)
 - Improving performance of *clone/push/pull/fetch*

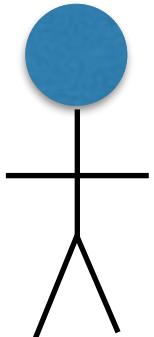
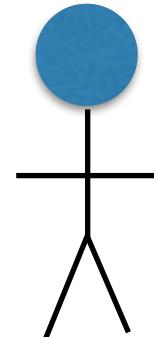
Where do we need to go next?

Where do we need to go next?

We really really want
people to actually
collaborate.

Where do we need to go next?

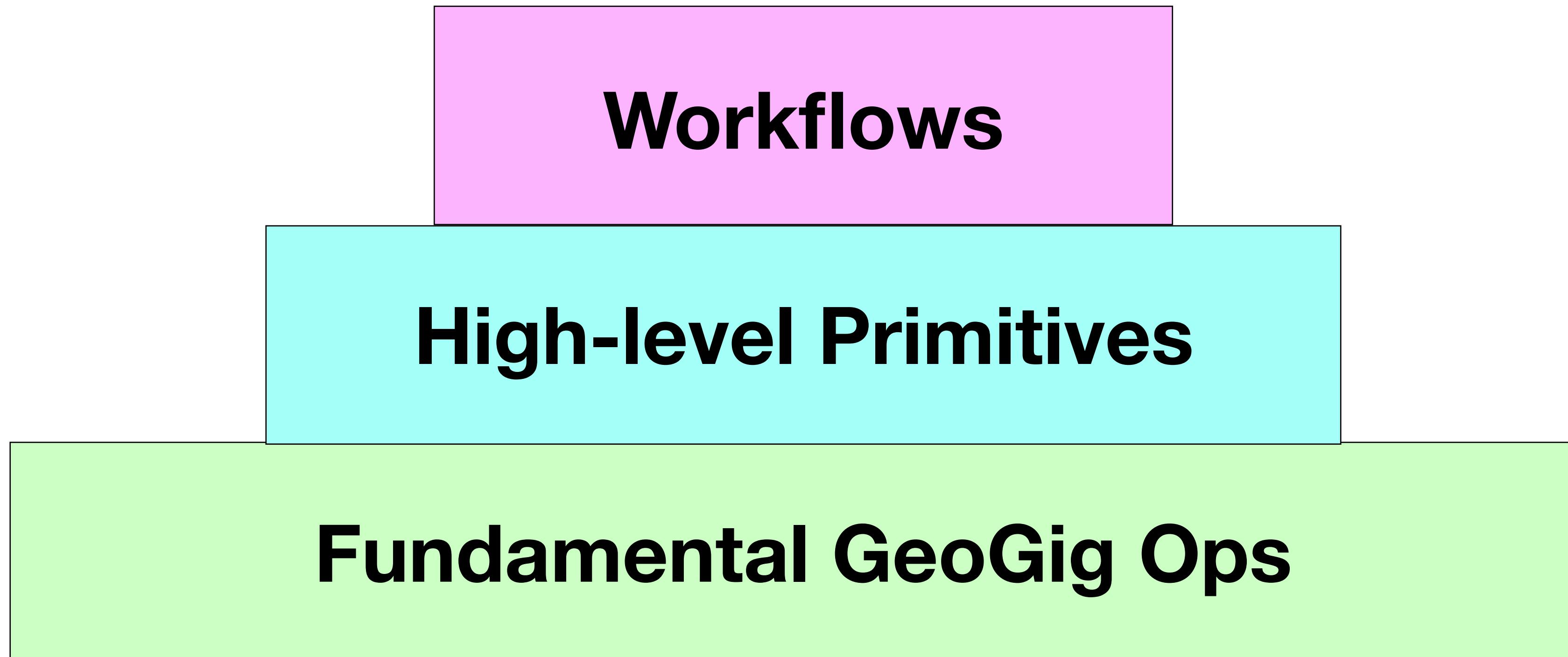
Need to make
things easy to use!



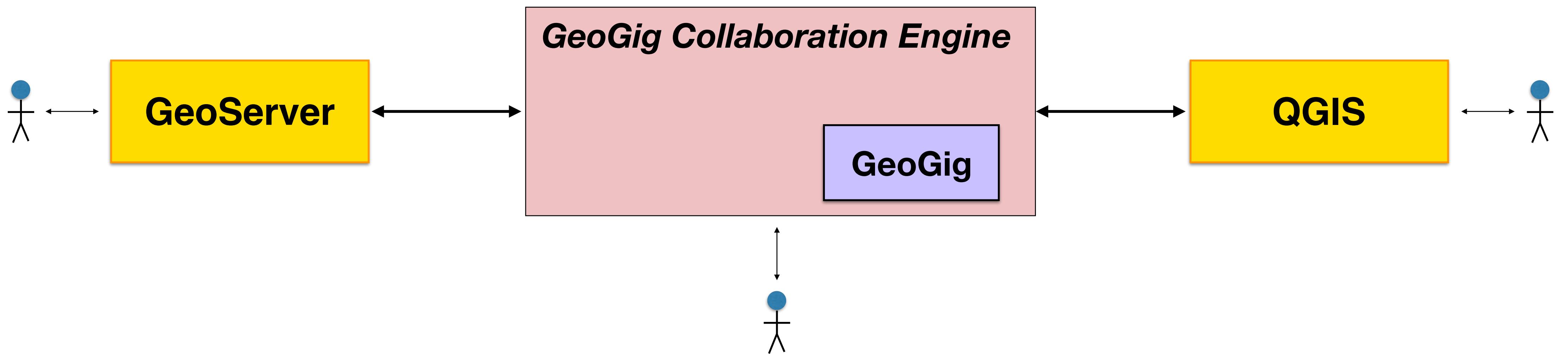
Making Things Easier

Concentrating on User Experience

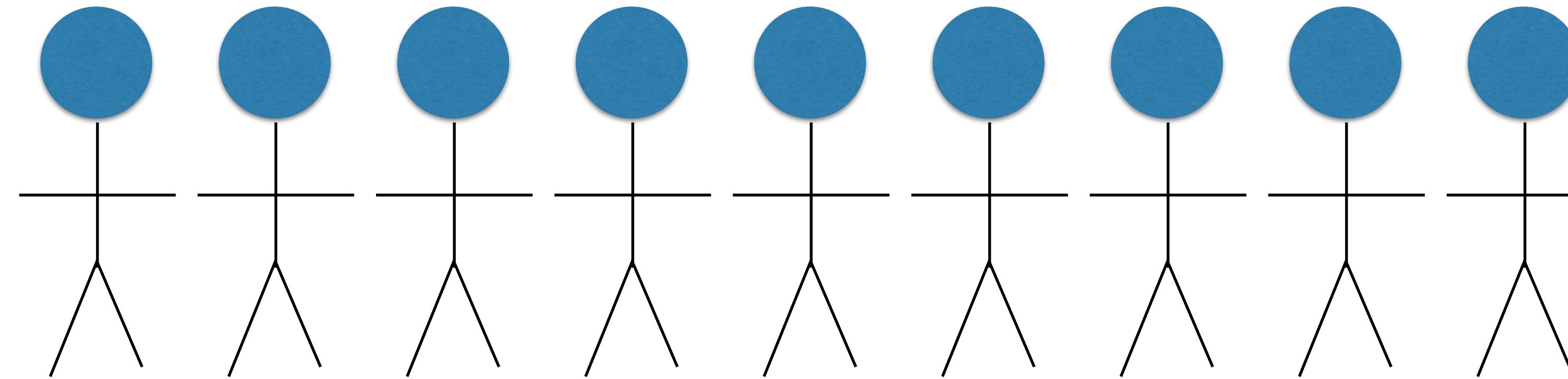
Making Things Easier



Making Things Easier



Enabling Collaboration



We want to hear how *you* could use GeoGig
geogig-dev@locationtech.org



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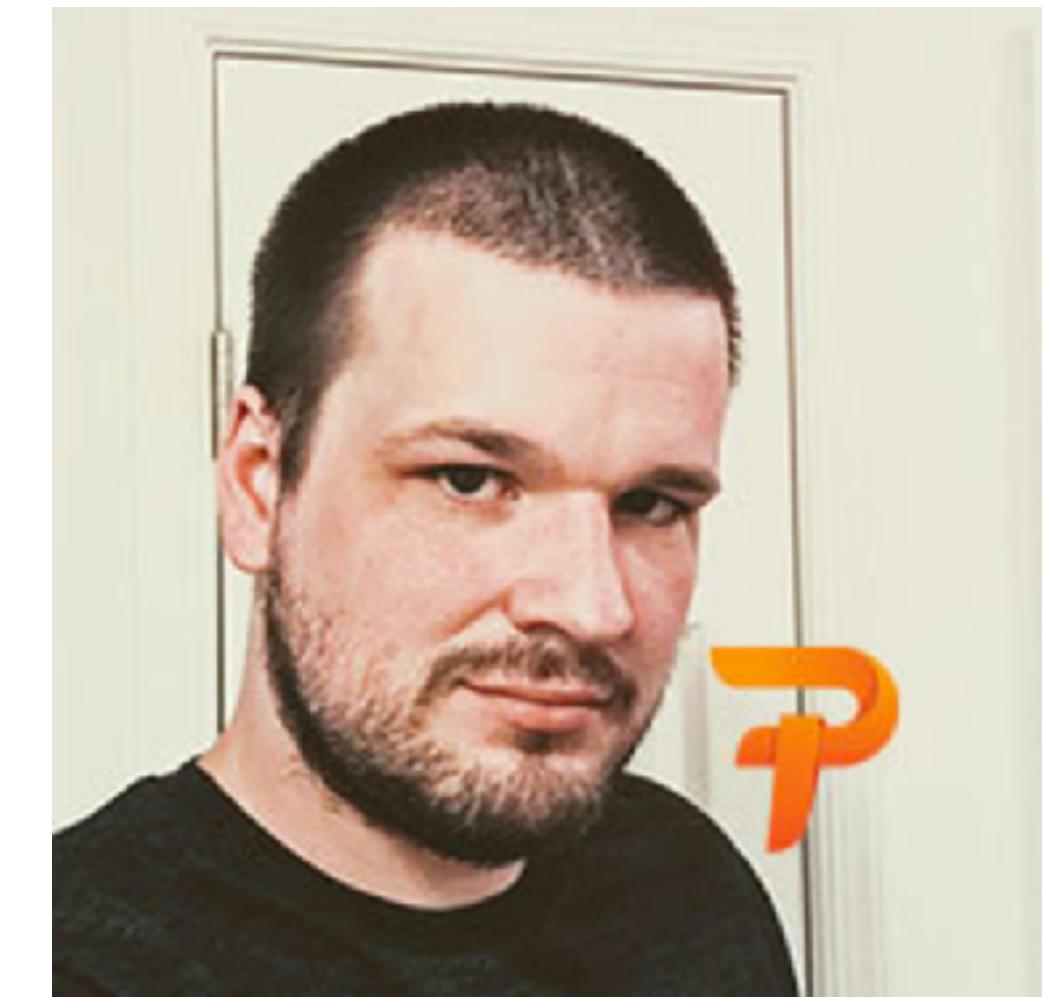
Check out our booth #103

Q&A

Please come talk to us during the conference
or on-line at geogig.org - geogig-dev@locationtech.org



David Blasby
 Boundless



Johnathan Garrett
 Prominent Edge