Beginner's Crash Course to Elastic Stack Series

Part 1.1: Intro to Elasticsearch and Kibana

Lisa Jung
Developer Advocate @Elastic

Connect with the Elastic Community

Elastic meetups

https://ela.st/amervirtual

Elastic Community Slack Workspace

https://ela.st/slack

YouTube Channel

https://ela.st/community-youtube

elastic

Elastic Contributor Program

Join the Elastic Contributor Program, which recognizes the hard work of our awesome contributors!

Start contributing code, presentations, tutorials, and more today to earn yourself a spot on the leaderboard and the chance to win free training, Elastic swag, bragging rights, and more.

elastic.co/community/contributor

Beginner's Crash Course to Elastic Stack Series

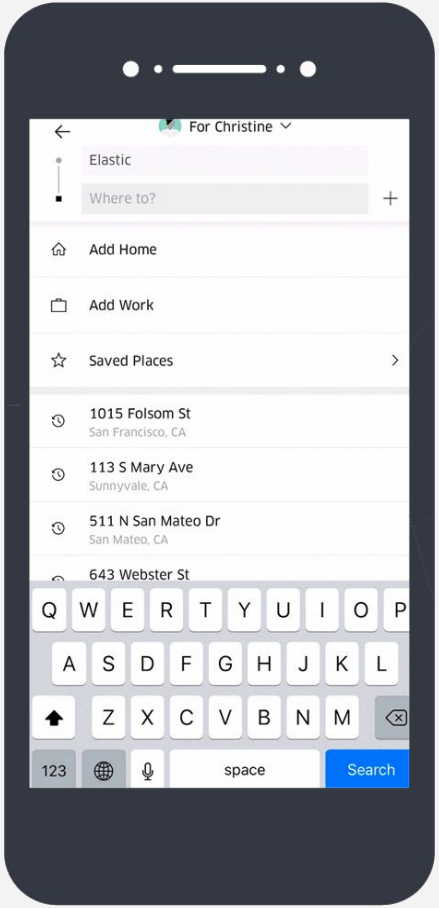
Part 1.1: Intro to Elasticsearch and Kibana

Lisa Jung
Developer Advocate @Elastic

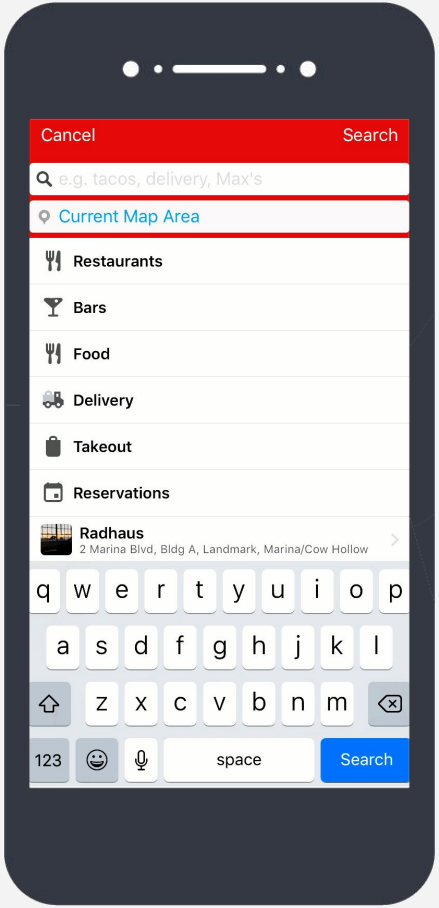
Have you ever used the Elastic Stack before?

- **In the chat window**
  - Type YES if you have used it before
  - Type NO if you have never used it before

elastic



Searching for **Rides**

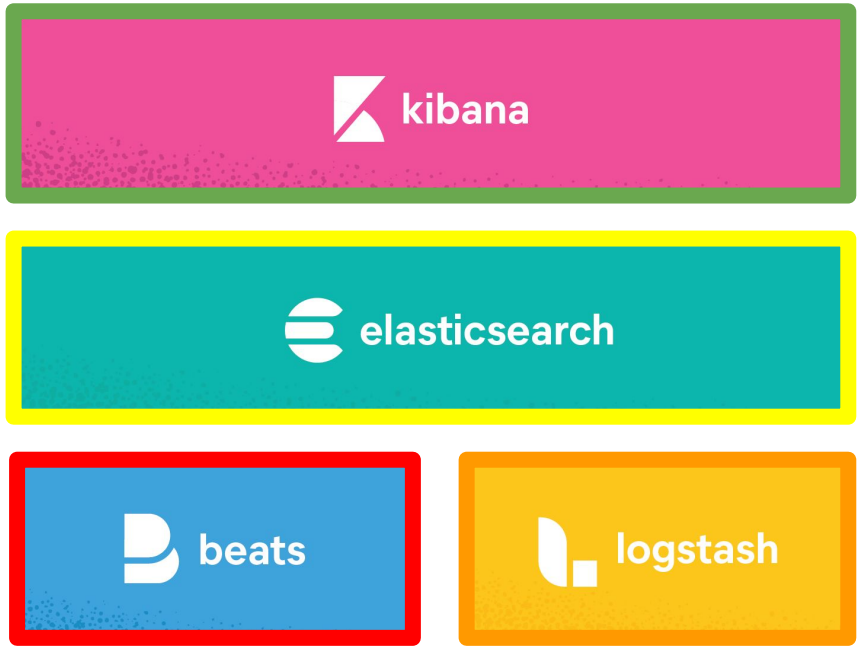


Searching for Restaurants

Searching for
Rides

The Elastic Stack

Reliably and securely take data from any source, in any format, then search, analyze, and visualize it in real time.



Use Cases

- Logging
- Metrics
- Security Analytics
- Business Analytics

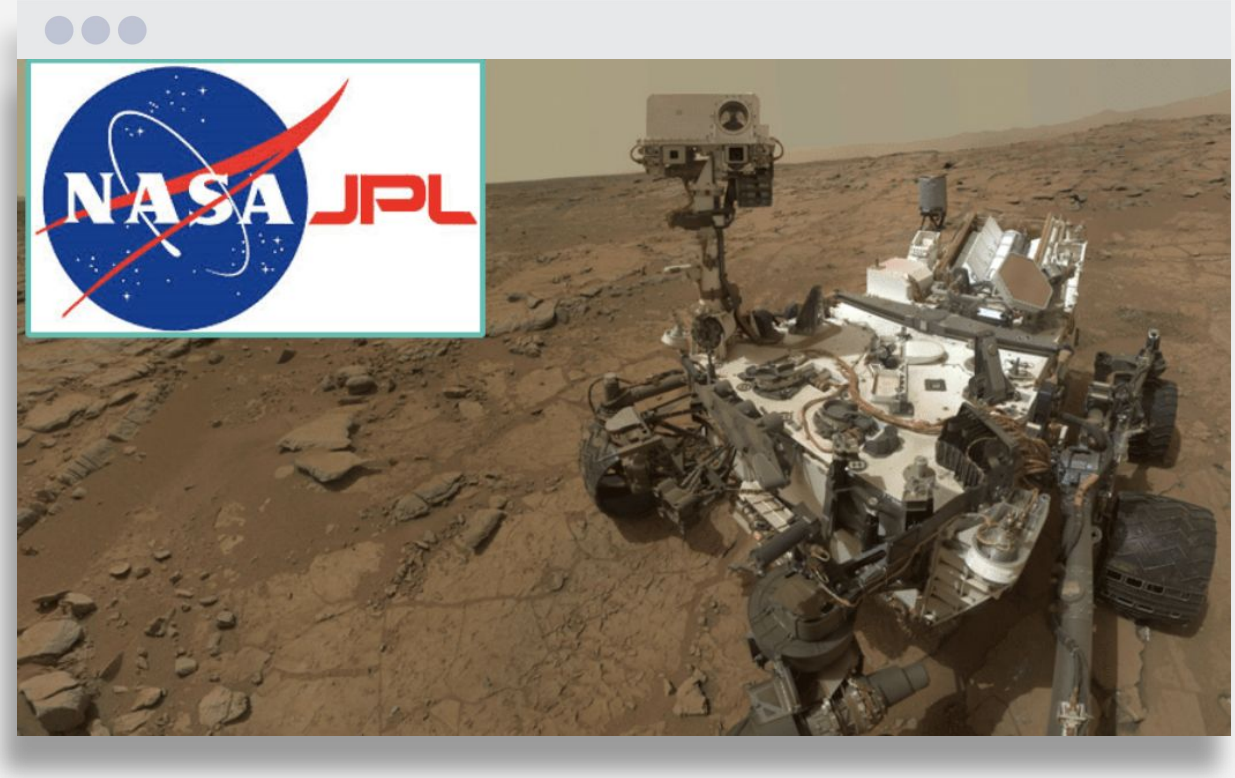
Use Case: Logging

https://www.reddit.com/r/gaming/comments/4lhm69/overwatch_blocked_pharahs_rocket_with_hanzos_arrow/

ACTIVISION BLIZZARD

elastic

Use Case: Metrics

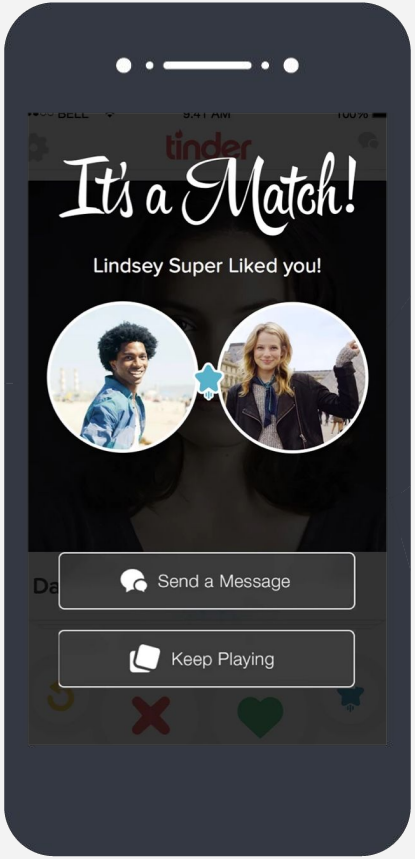


elastic

Use Case: Security Analytics

elastic

Use Case: Business Analytics

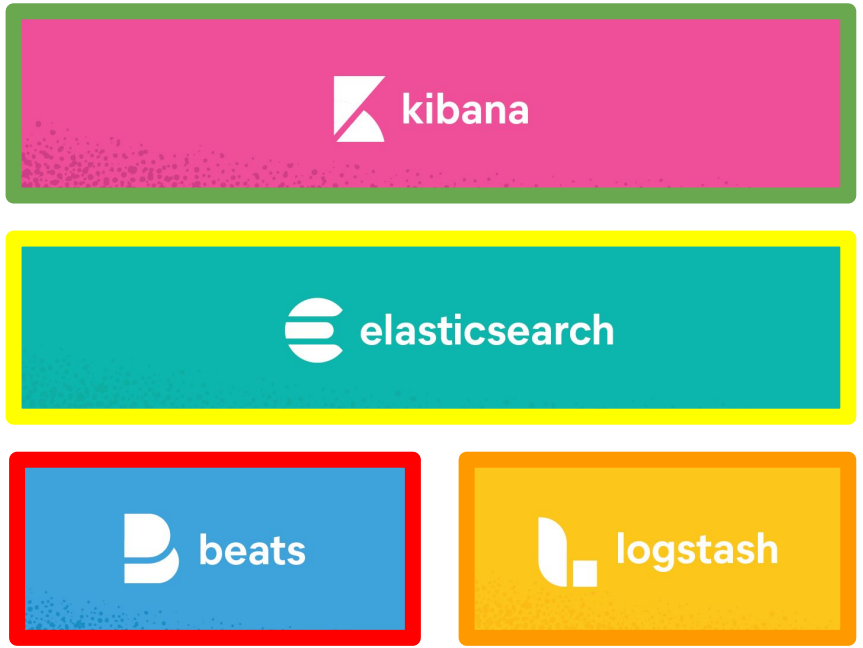


tinder™

elastic

The Elastic Stack

Reliably and securely take data from any source, in any format, then search, analyze, and visualize it in real time.



Beginner's Crash Course to Elastic Stack Series

Part 1.1: Intro to Elasticsearch and Kibana

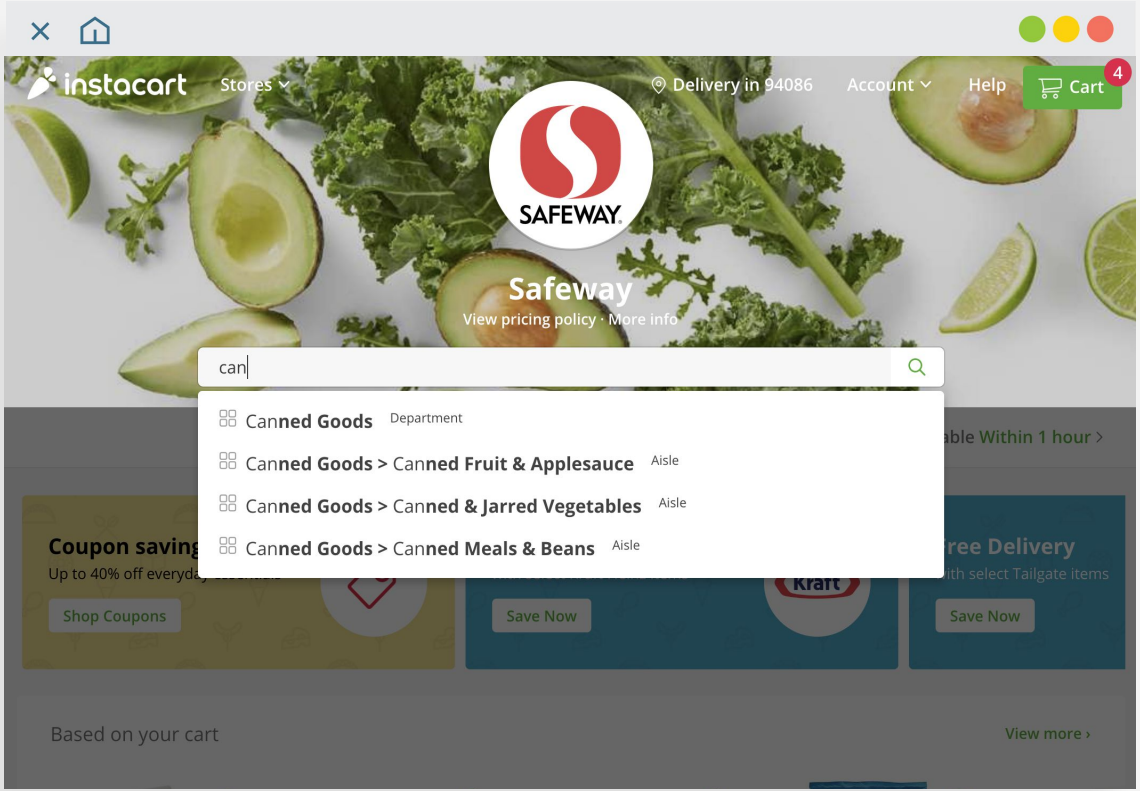
By the end of this workshop, you will be able to:

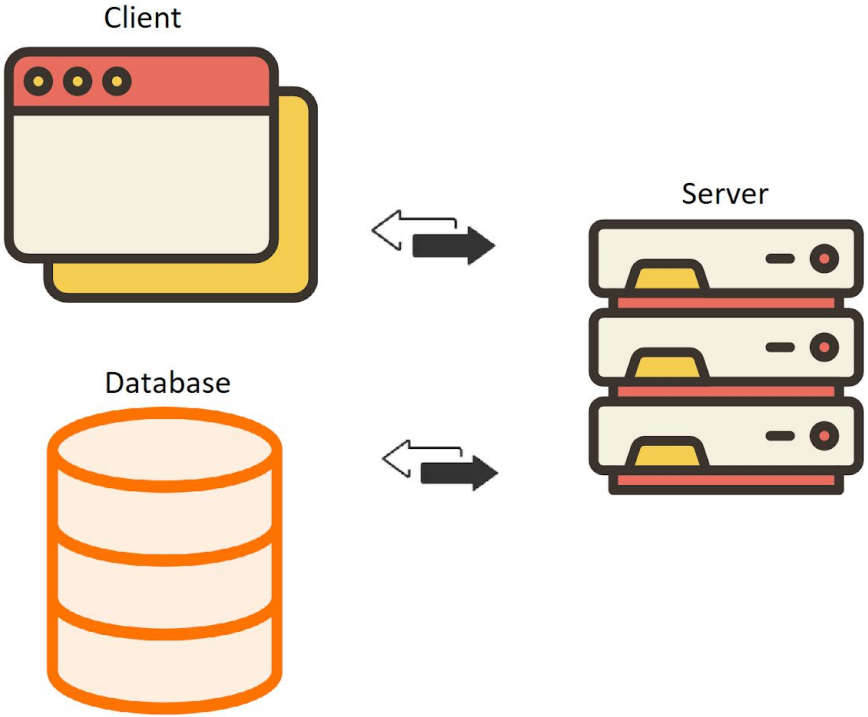
- understand a use case of Elasticsearch and Kibana
- understand the basic architecture of Elasticsearch
- Perform CRUD(Create, Read, Update, Delete) operations with Elasticsearch and Kibana

Elasticsearch

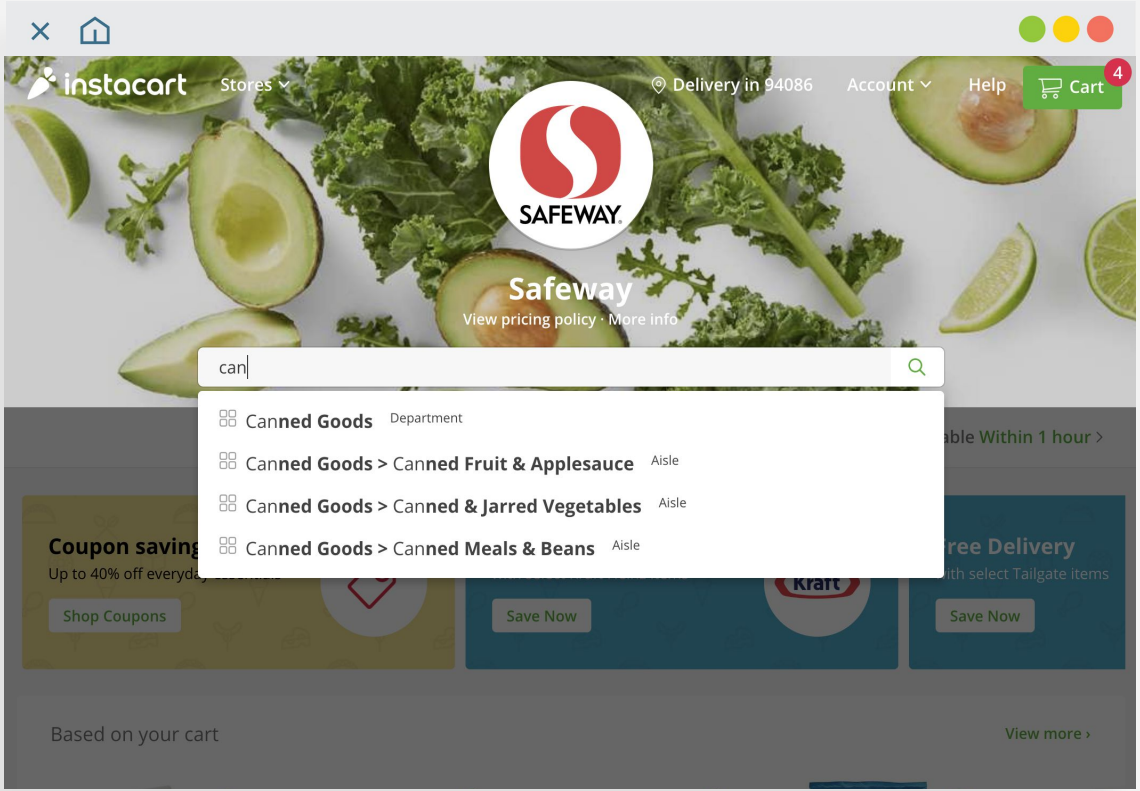
Store | Search | Analyze

instacart


instacart
Stores
Delivery in 94086
Account
Help
Cart
4
SAFEWAY
Safeway
View pricing policy · More info
can
Canned Goods Department
Canned Goods > Canned Fruit & Applesauce Aisle
Canned Goods > Canned & Jarred Vegetables Aisle
Canned Goods > Canned Meals & Beans Aisle
Coupon saving
Up to 40% off everyda
Shop Coupons
Save Now
Kraft
Save Now
Based on your cart
View more ›

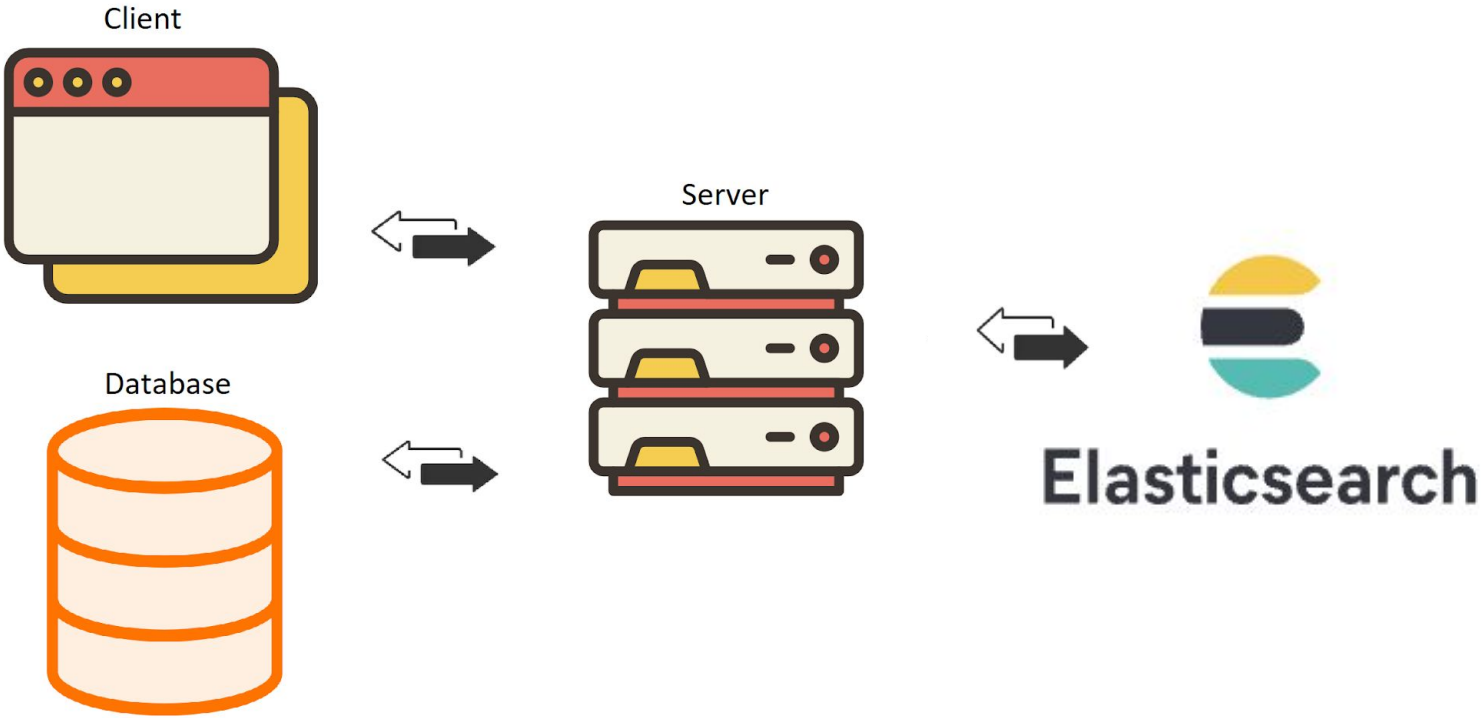

Client
Server
Database

Great Search Experience = Get fast and relevant results, no matter the scale.



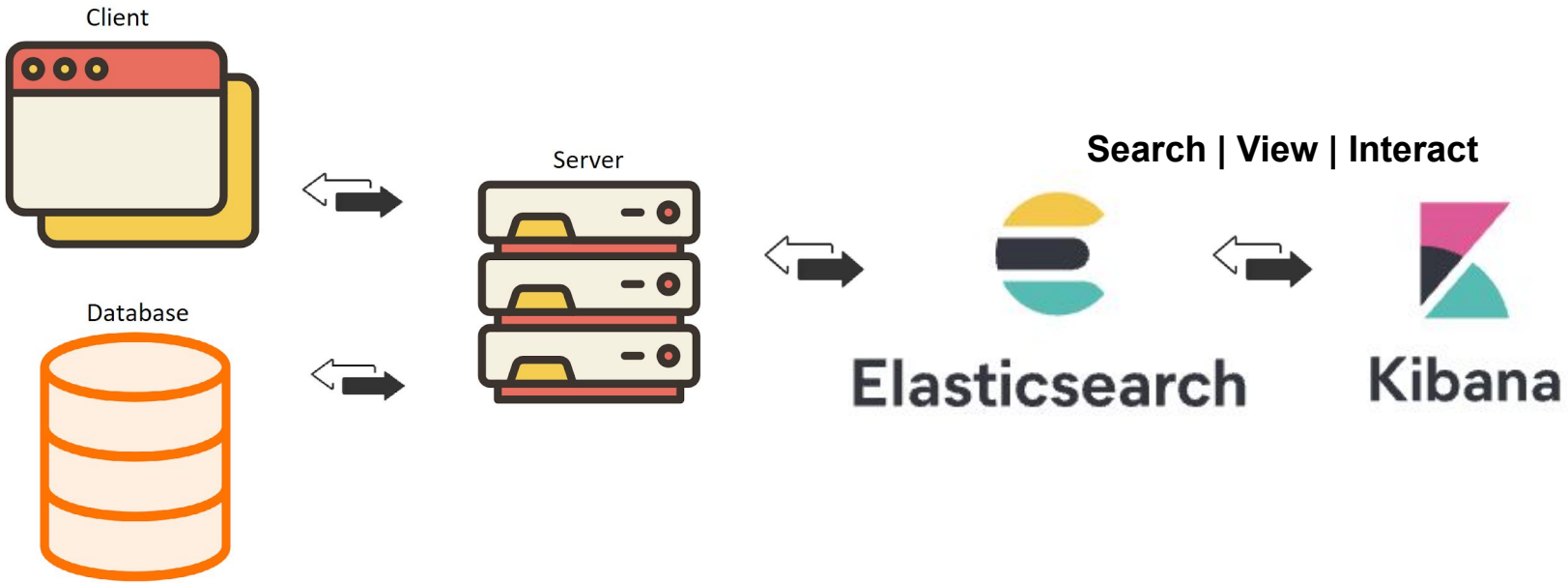
Find me a list of peanut butter brands. I want highest rated brands at the top.

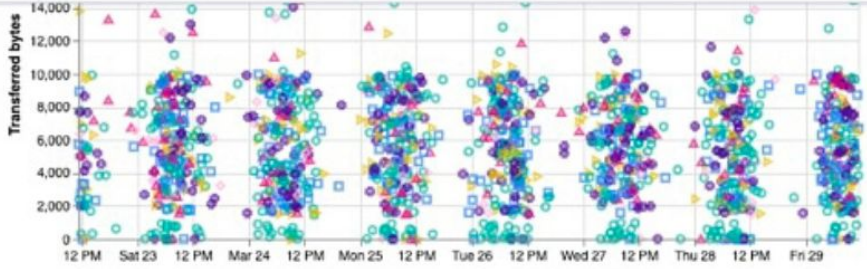
Find me a hot sauce named uh… I think it is spelled Sriracha? Maybe it's spelled Srirracah? Srirracha?


Client
Server
Database
Elasticsearch

Elasticsearch

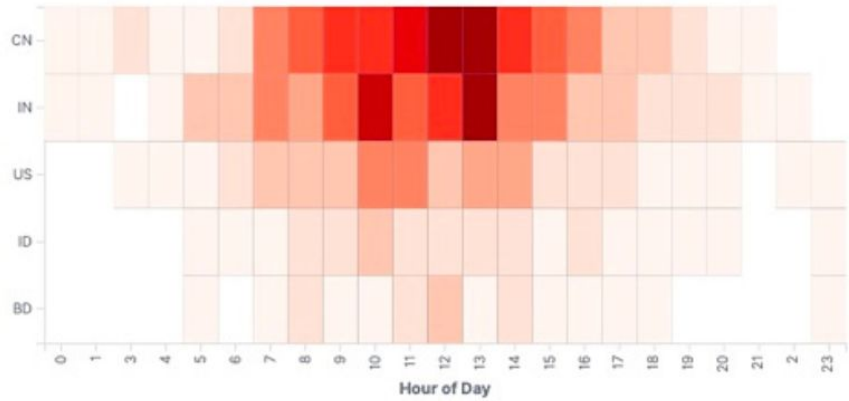
Store | Search | Analyze


Client
Database
Server
Search | View | Interact
Elasticsearch
Kibana

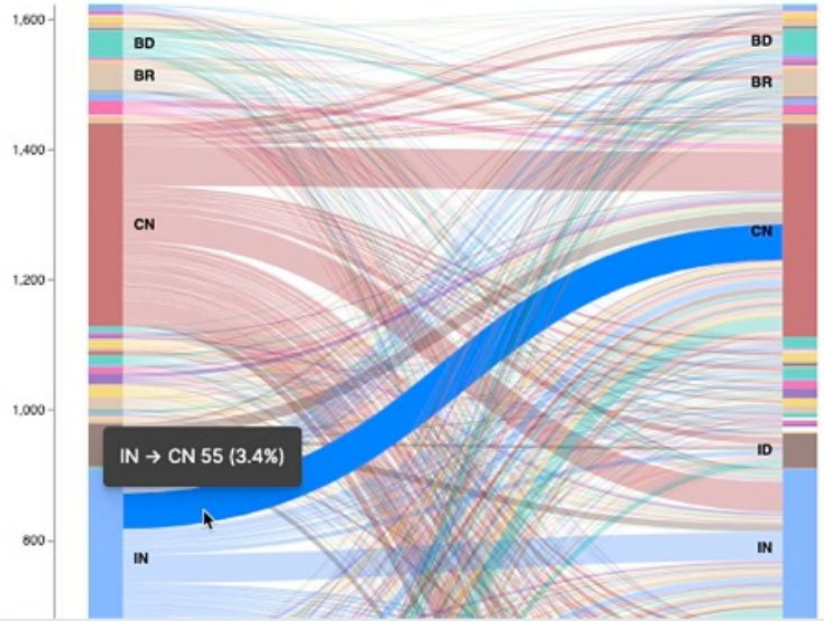


gz	1.594MB	34.493KB	283	7
css	1.385MB	12.378KB	270	2
zip	1.257MB	6.654KB	212	3
deb	1.085MB	6.844KB	173	1
rpm	458.989KB	0B	71	0

[Logs] Heatmap



[Vega] Source and Destination Sankey Chart



[Logs] Unique Visitors by Country

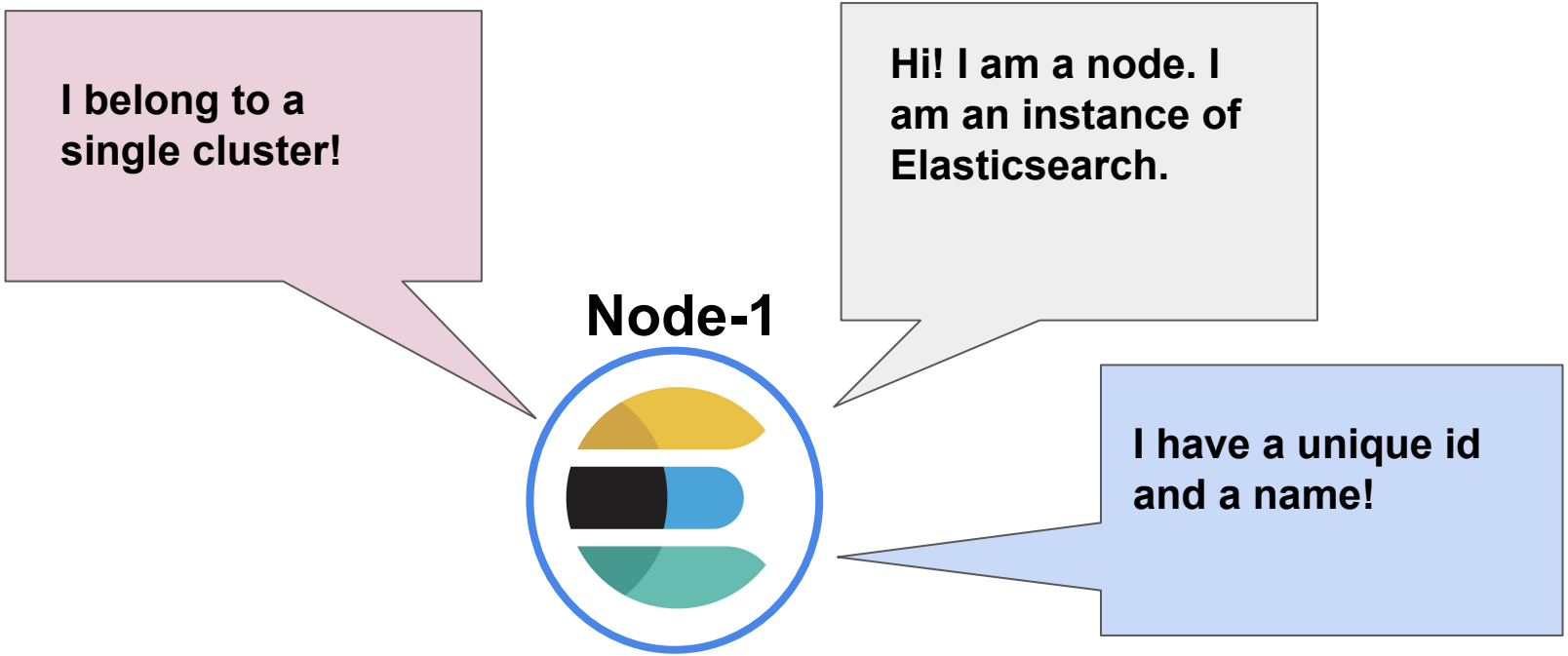
By the end of this workshop, you will be able to:

- understand a use case of Elasticsearch and Kibana
- **understand the basic architecture of Elasticsearch**
- Run CRUD (Create, Read, Update, Delete) Operations using Elasticsearch and Kibana

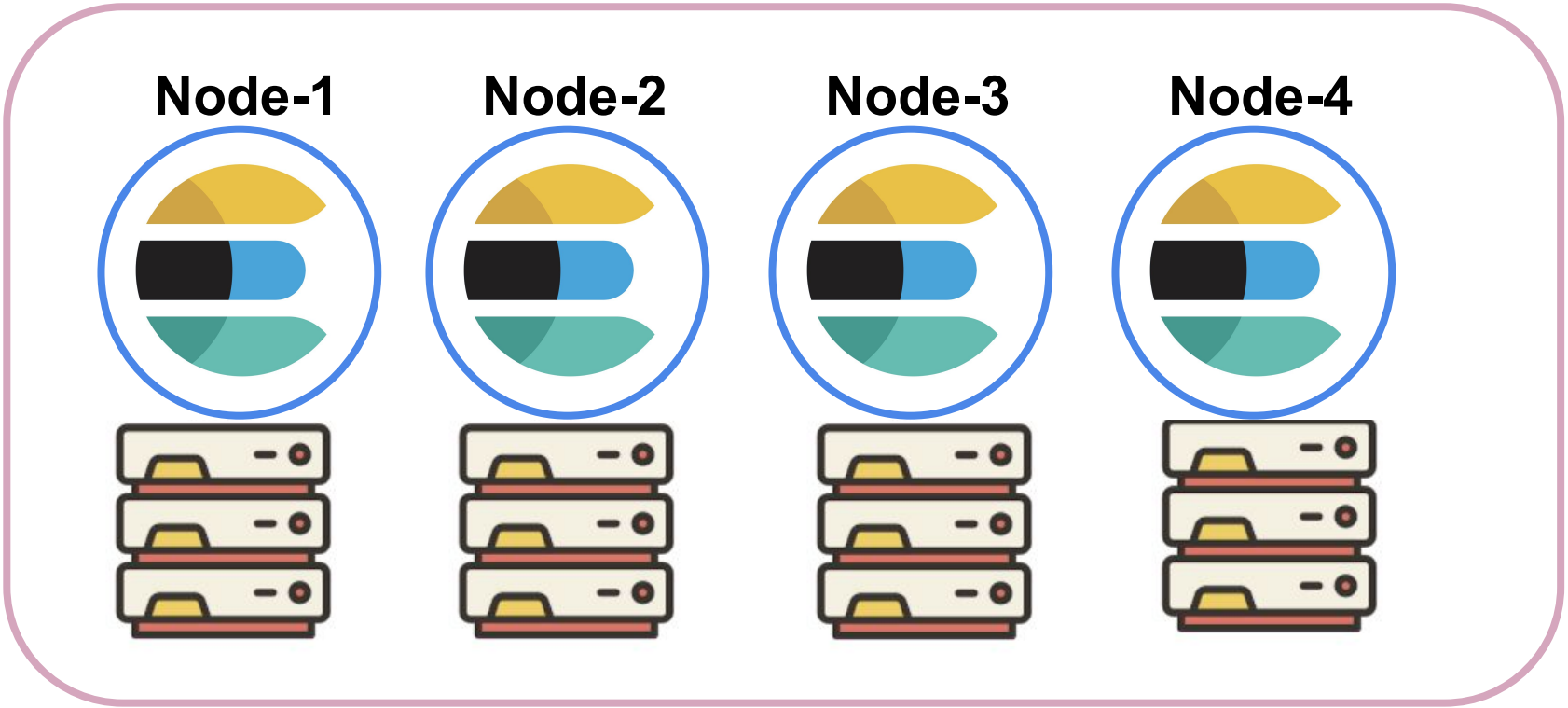
Elasticsearch

Store | Search | Analyze

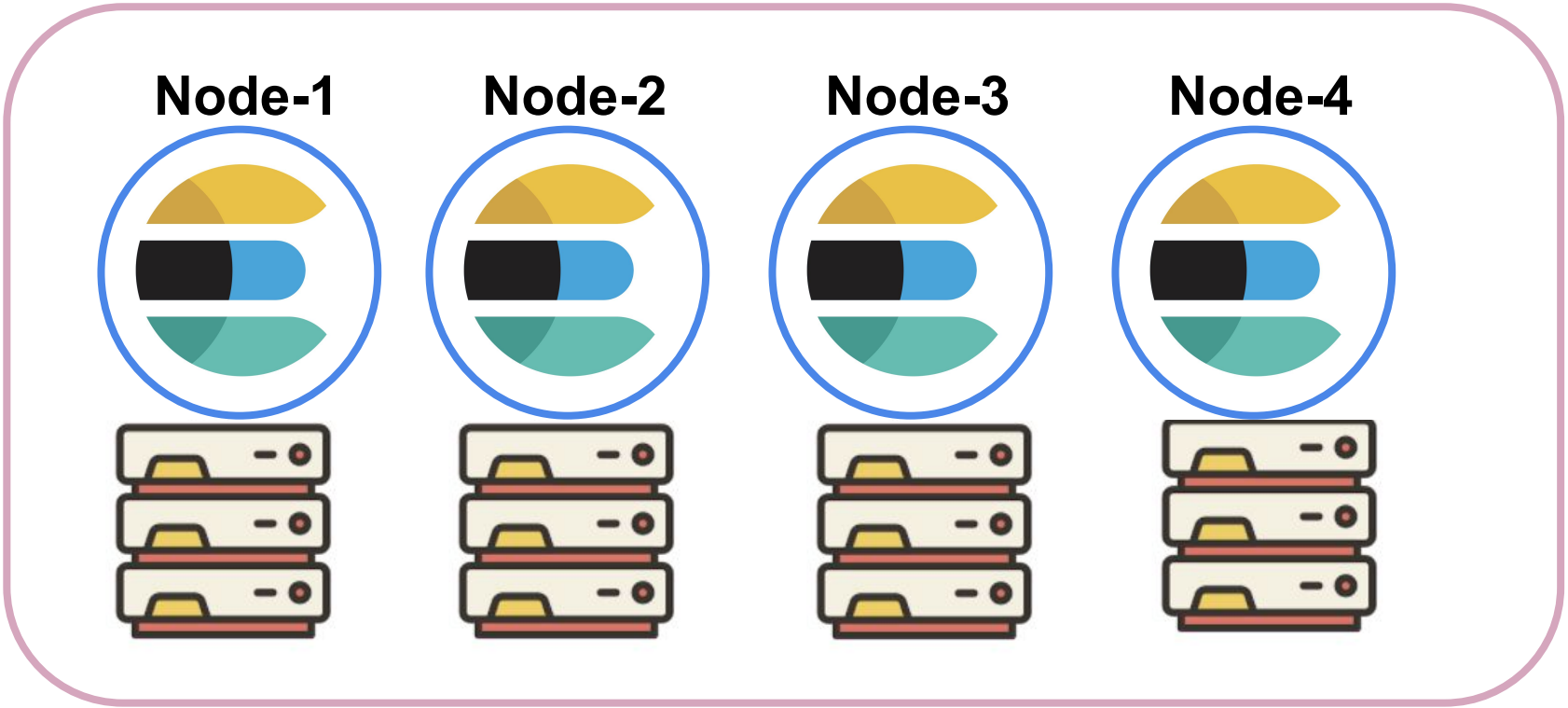
Cluster


I belong to a single cluster!
Hi! I am a node. I am an instance of Elasticsearch.
Node-1
I have a unique id and a name!

Cluster



Cluster



Data is stored as documents!

```
{
"name": "Baby Carrots(1lb bag)",
"category": "Vegetables",
"brand": "365",
"price": "$0.99"
}
```

I am a document, a JSON object that is stored in Elasticsearch under a unique ID!

Documents are grouped into an index!

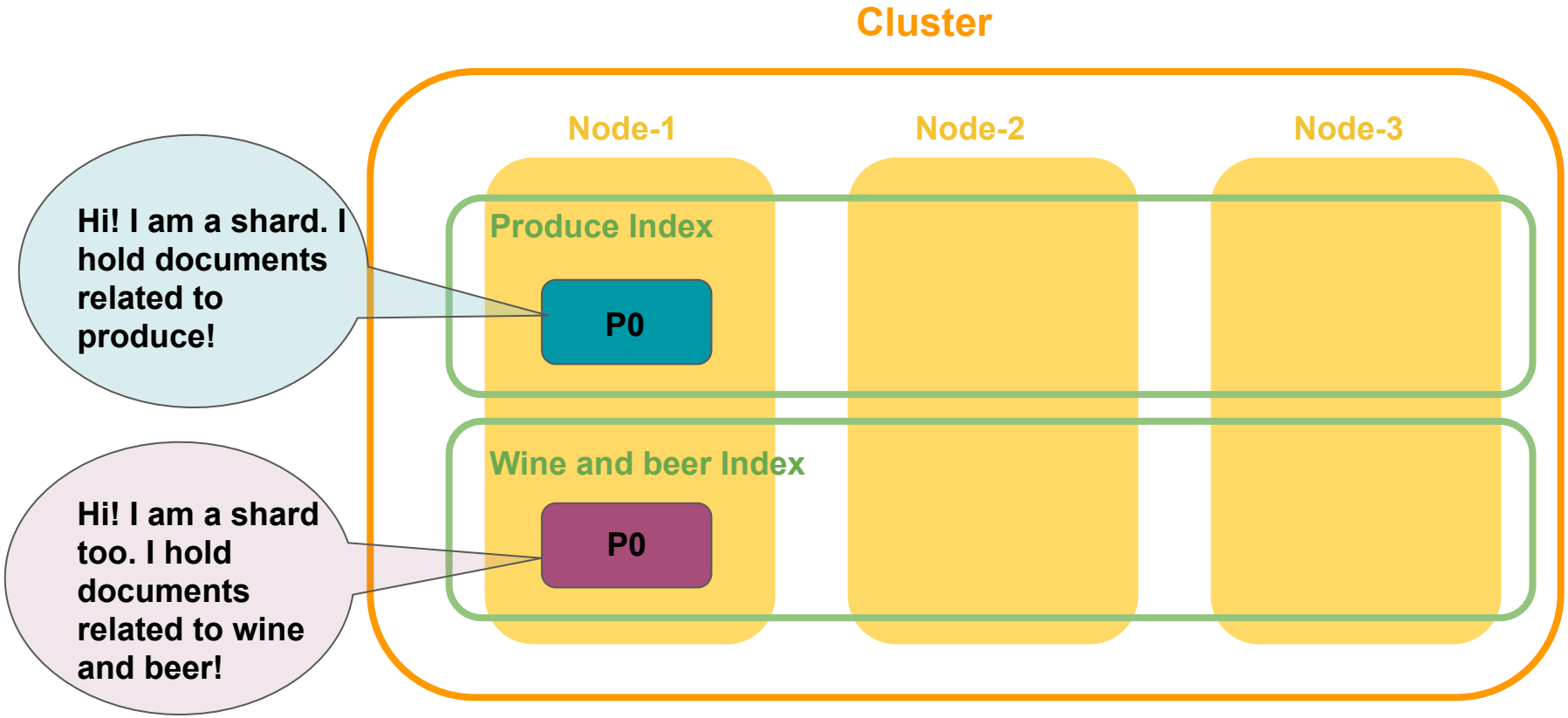
Produce Index


```
{
"name": "Baby Carrots(1lb bag)",
"category": "Vegetables",
"brand": "365",
"price": "$0.99"
}

{
"name": "Clementines(3lb bag)",
"category": "Fruits",
"brand": "Cuties",
"price": "$4.29"
}
```

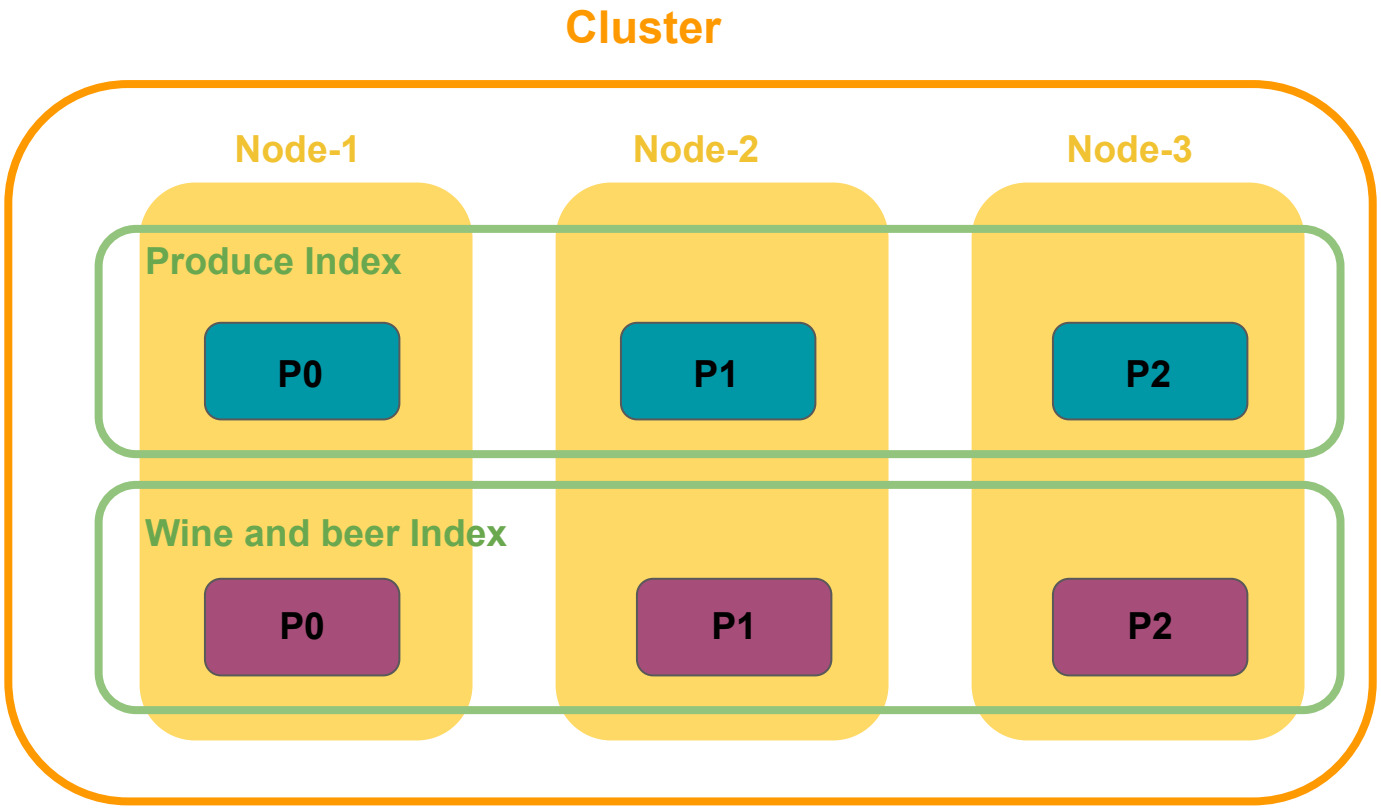

Wine & Beer Index


```
{
"name": "Unanime Malbec(750ml)",
"brand": "Mascota Vineyards",
"country": "Argentina",
"region": "Mendoza",
"wine_type": "Red Wine",
"ABV": "14%",
"price": "$22.99"
}

{
"name": "Hazy Little Thing IPA(750ml)",
"country": "US",
"state": "California",
"beer_type": "Ale",
"beer_style": "India Pale Ale",
"ABV": "6.7%",
"price": "$14.99"
}
```

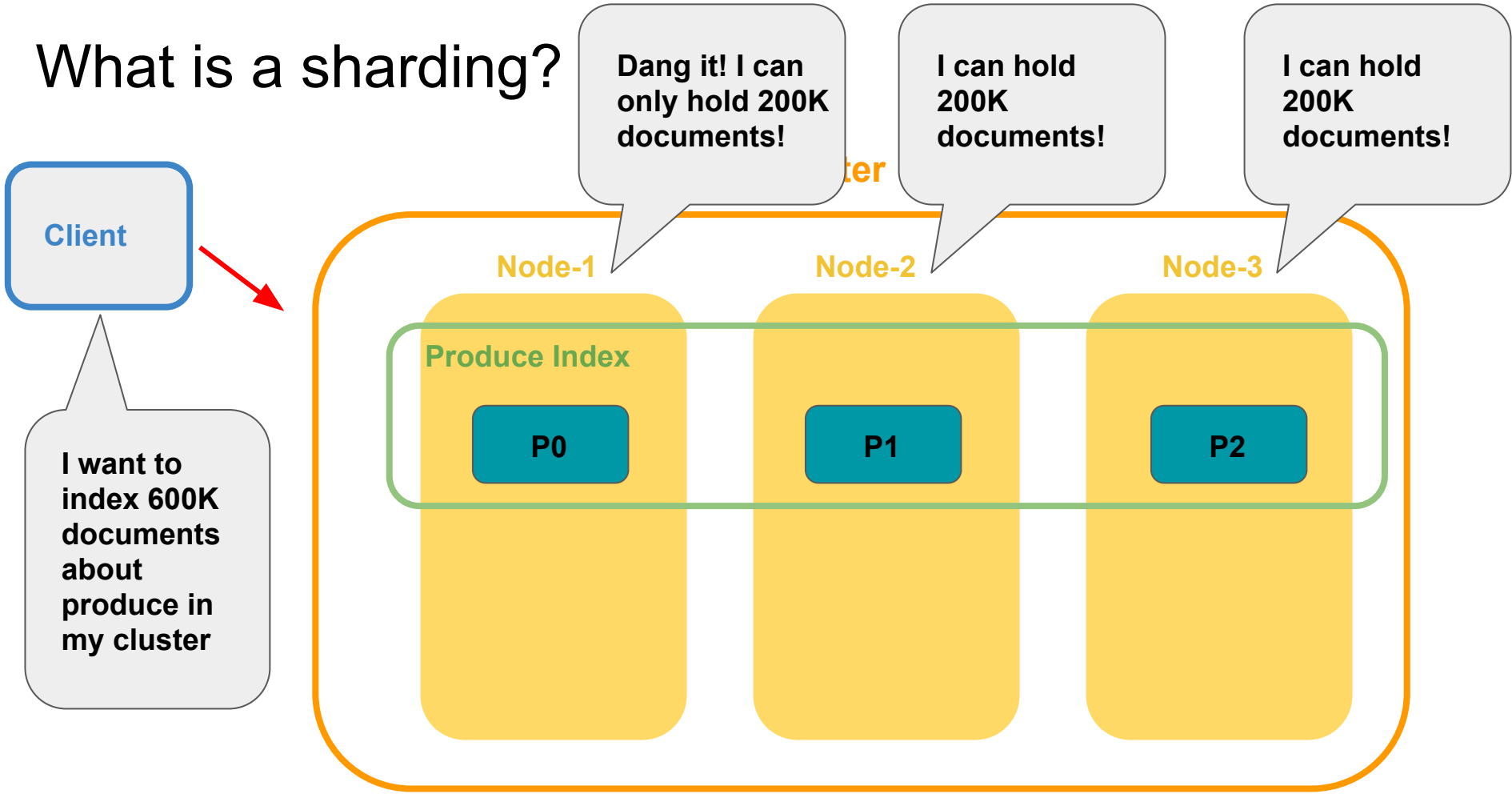
What is a shard?



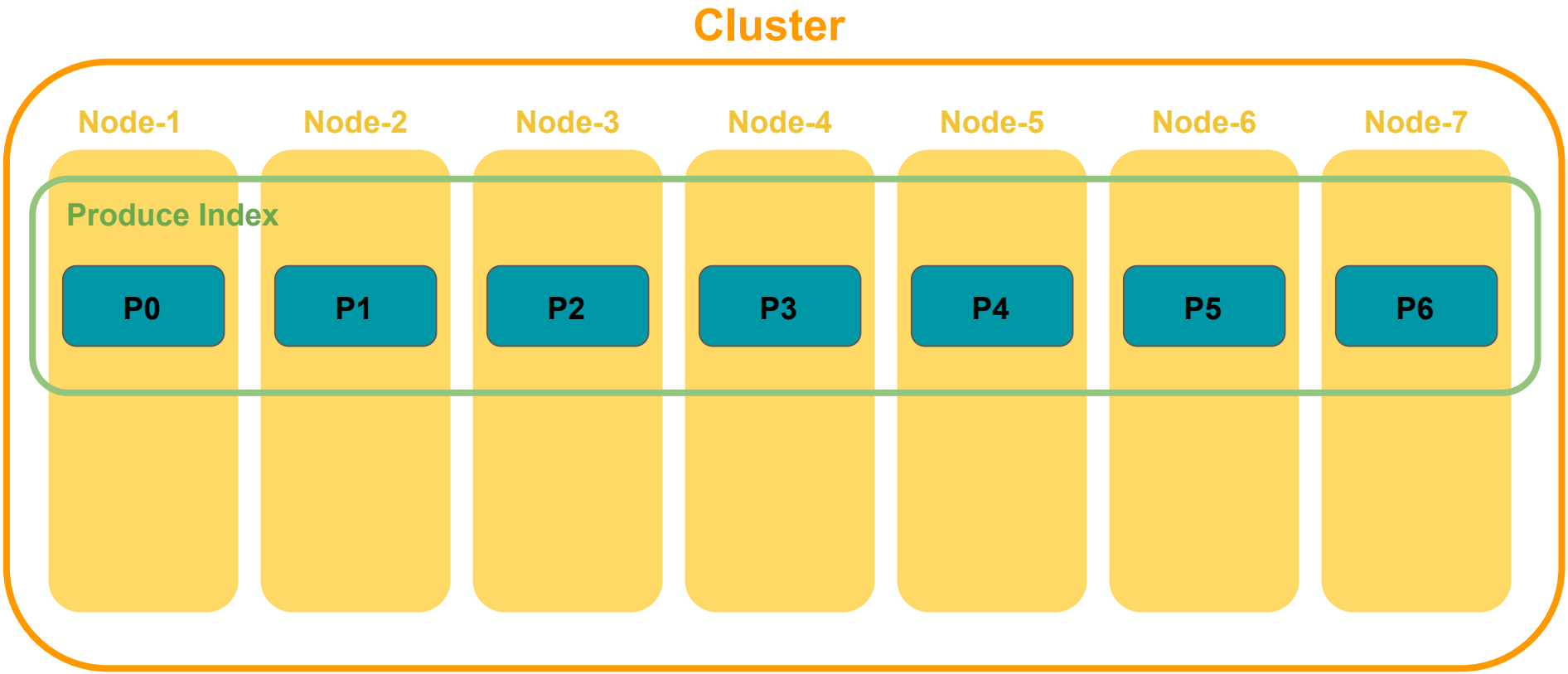
What is a sharding?



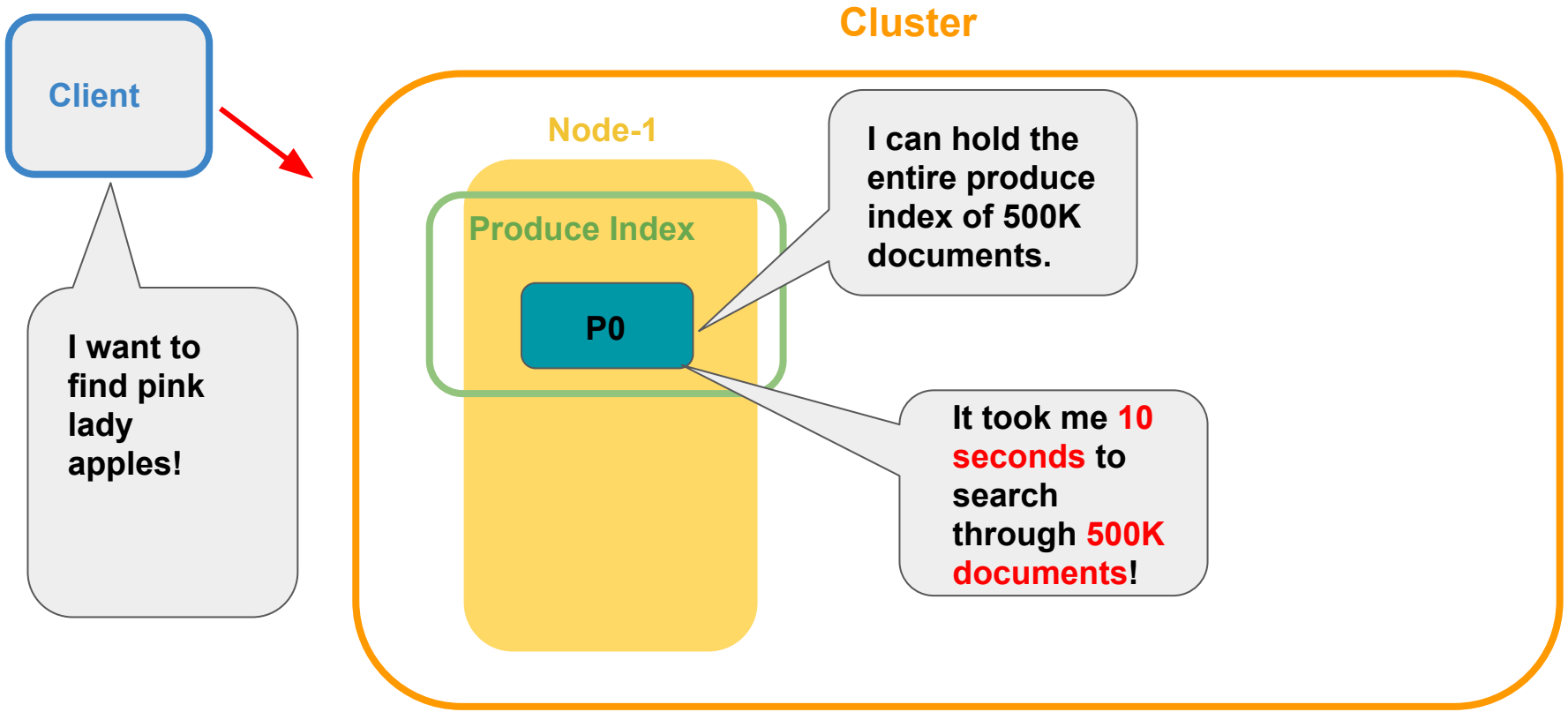
What is a sharding?



What is a sharding?



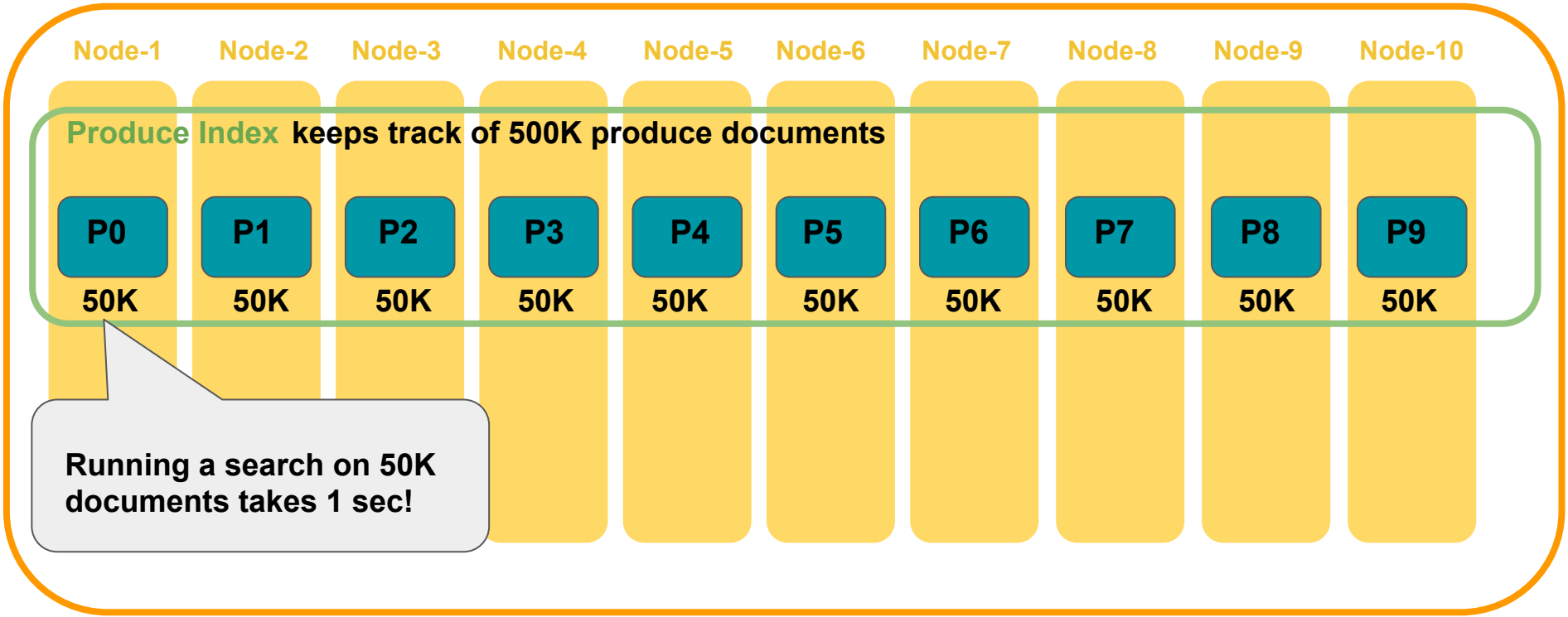
What is a sharding?



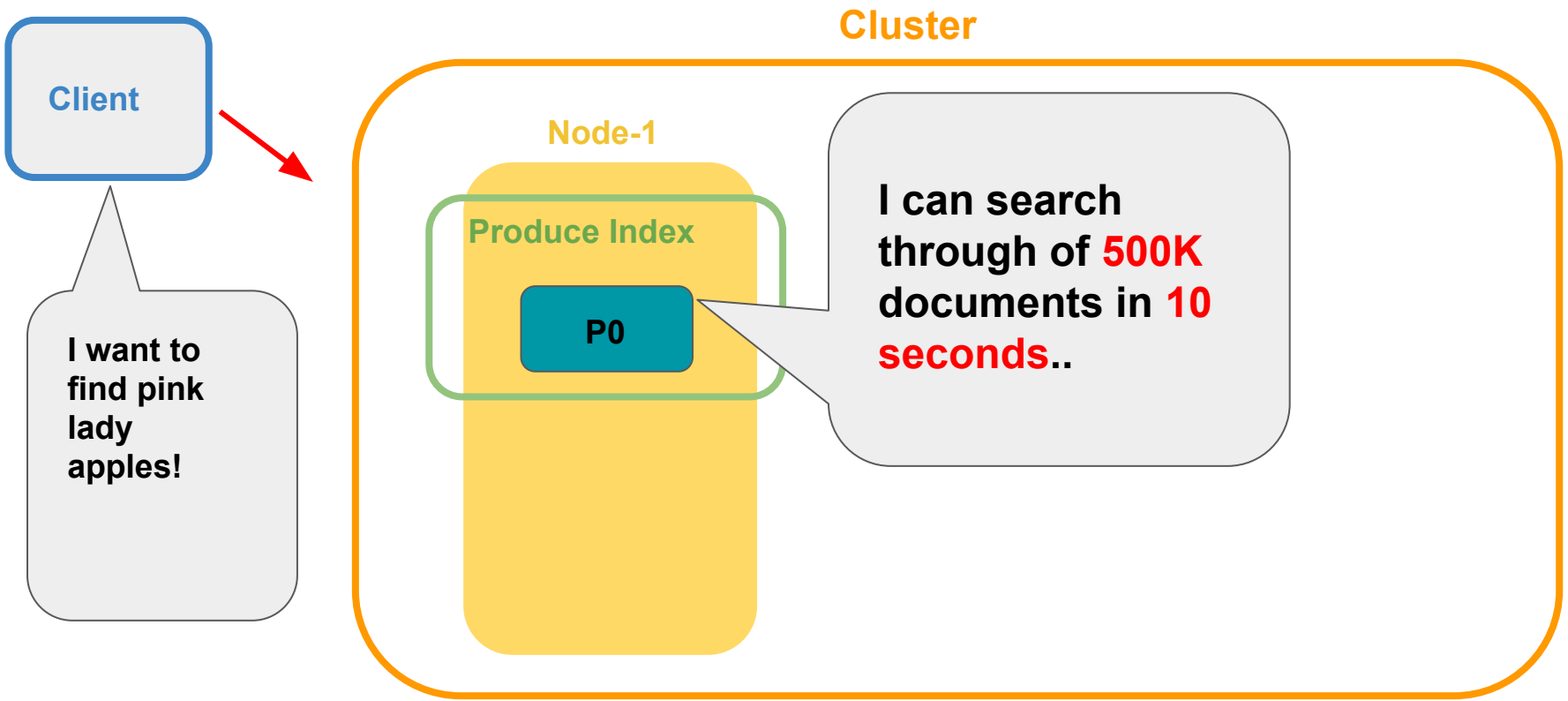
Sharding speeds up your search!

We can search through 500K documents in 1 second!

Cluster



What is a sharding?



Sharding speeds up your search!

We can search through 500K documents in 1 second!

Cluster

Node-1 Node-2 Node-3 Node-4 Node-5 Node-6 Node-7 Node-8 Node-9 Node-10

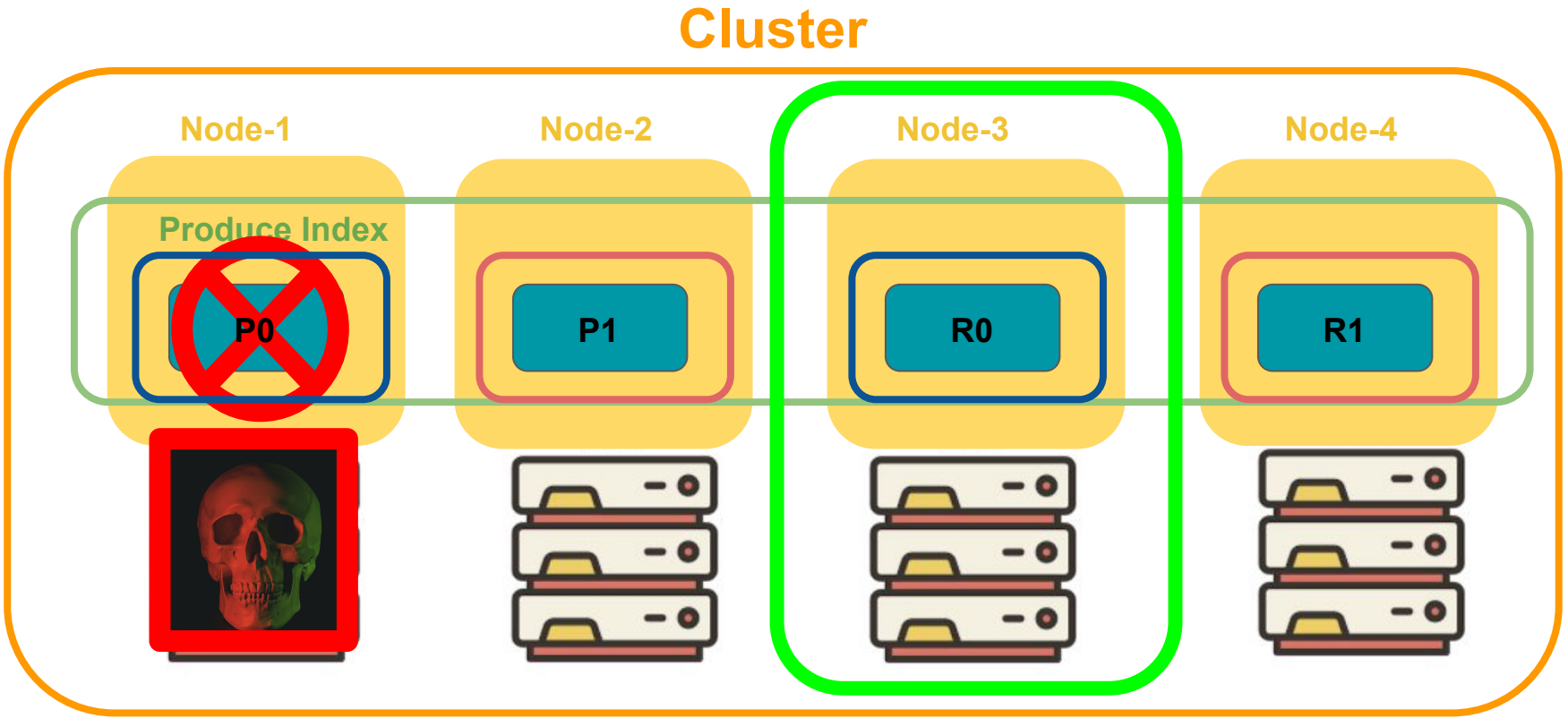
Produce Index

P0 P1 P2 P3 P4 P5 P6 P7 P8 P9

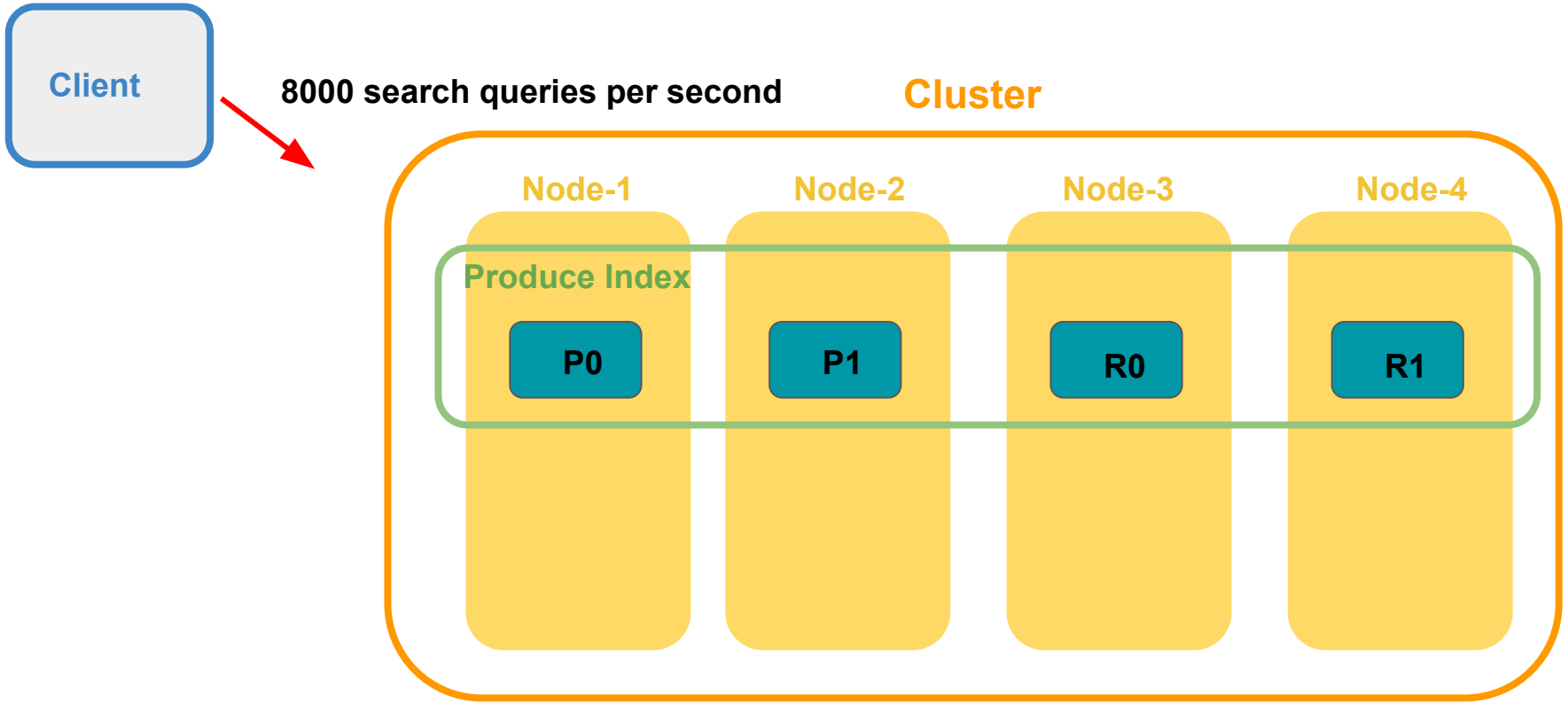
50K 50K 50K 50K 50K 50K 50K 50K 50K 50K


#SPONGEBOBMOVIE

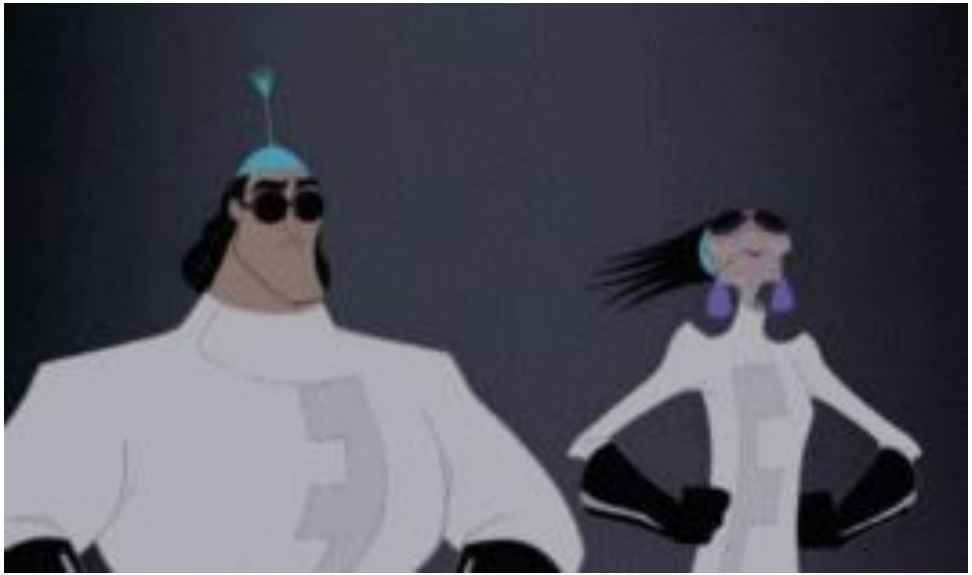
What are replica shards?



Replica shards can improve the performance of your search



Hands-on Lab: Performing CRUD Operations with Elasticsearch and Kibana



Questions?

Raymond asked:

For people who come from a RDBMS background like SQL Server, how does this Elastic database compare to it?

Raymond asked:

Is Node like tables and Clusters like servers in SQL Server?

Lisa.Jung@elastic.co

Igor asked:

Do the nodes use cache to find the data that is being searched?

Linux commands same as Mac terminal?

Linford asked:

What is the best way to perform sharding with one node?

Lisa.Jung@elastic.co

Raymond asked:

What are some disadvantages with using Elastic?

Partha asked:

At which point does using Elasticsearch give value vs searching through a SQL db (empirically in size of db). Note that there is overhead in maintaining yet another microservice.

Christopher asked:

Do you have experience and /or can you recommend using REDIS with an established ELK Stack???

Lisa.Jung@elastic.co

https://discuss.elastic.co/

Raymond asked:

What's with the errors and warnings?

```
r license.
  log   [22:07:18.575] [info][plugins][watcher] Your basic license does not support watcher. Please upgrade your license.
  log   [22:07:18.577] [info][kibana-monitoring][monitoring][monitoring][plugins] Starting monitoring stats collection
  log   [22:07:18.971] [error][data][elasticsearch] [version_conflict_engine_exception]: [task:Actions-actions_telemetry]
cument already exists (current version [22])
  log   [22:07:18.973] [error][data][elasticsearch] [version_conflict_engine_exception]: [task:Lens-lens_telemetry]: vers
 already exists (current version [22])
  log   [22:07:18.981] [error][data][elasticsearch] [version_conflict_engine_exception]: [task:Alerting-alerting_telemetr
document already exists (current version [22])
  log   [22:07:18.983] [error][data][elasticsearch] [version_conflict_engine_exception]: [task:endpoint:user-artifact-pac
conflict, document already exists (current version [14155])
  log   [22:07:19.021] [error][data][elasticsearch] [version_conflict_engine_exception]: [task:apm-telemetry-task]: versi
already exists (current version [34])
  log   [22:07:19.190] [info][listening] Server running at http://localhost:5601
  log   [22:07:20.137] [info][server][Kibana][http] http server running at http://localhost:5601
```

Partha asked:

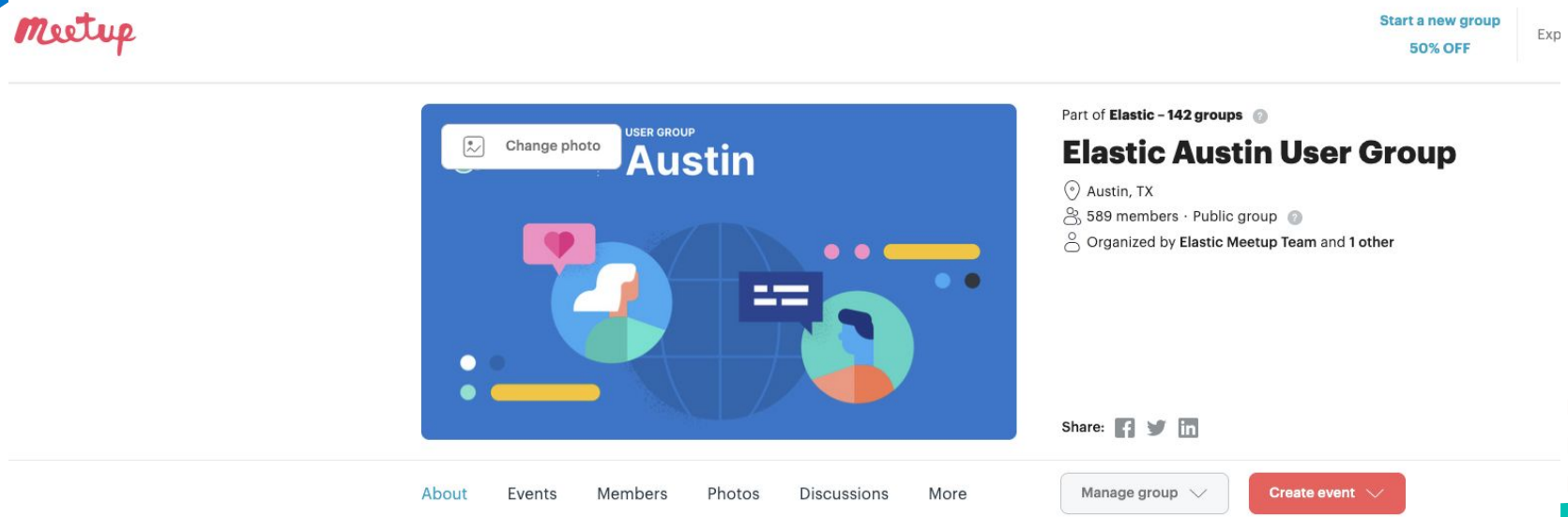
Does Elasticsearch have support to secure :9200 and :5601? Authentication/ tokens etc

1. https://www.elastic.co/guide/en/elasticsearch/reference/7.10/secure-cluster.html

2. https://www.elastic.co/guide/en/elasticsearch/reference/7.10/encrypting-communications.html

3. https://www.elastic.co/guide/en/elasticsearch/reference/7.10/setting-up-authentication.html

Join the Elastic Austin User Group for updates on future workshops!



Lisa Jung

Developer Advocate @Elastic

E-mail: lisa.jung@elastic.co

Discussion forum: https://discuss.elastic.co/

Blog: https://dev.to/lisahjung

Twitter: @LisaHJung