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Building a Search Engine with Elasticsearch

Jason Wong
19-Feb-2020, Education Architect, Elastic

Agenda

1. Geo-search and its applications
2. Implementing a search bar and the advance search panel
3. Q&A
4. Links and Resources

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who’s talking???

```
{
        “name”     : “Jason Wong”,
        “company” : {
                “name”     : “Elastic (SG)”,
                “position” : “Education Architect”,
                “roles”    : [ “run trainings”,
                               “curriculum development”,
                               “prototyping”,
                               “run meetups” ]
        },
        “toolbox” :[ “java”, “react.js”, “vue.js”,
                     “angular.js”, “node”, “golang” ]
}
```

resources

- Github
  - search demo: https://github.com/quoeamaster/bigdata_blogs/tree/master/es_search_demo_webapp
  - geo demo: https://github.com/quoeamaster/bigdata_blogs/tree/master/es_geo_demo_webapp
- social media
  - https://www.linkedin.com/in/jason-wong-391a7624/
  - https://github.com/quoeamaster
  - https://medium.com/@quoeamaster
  - https://bigdata887.wordpress.com/
  - https://twitter.com/QueMaster3

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Search is an integral part of our life these days, finding insights, information, and answers.

Today what we search has grown to heaps of Structured and Unstructured Data.

You may not realize it, but you probably use Elasticsearch every day

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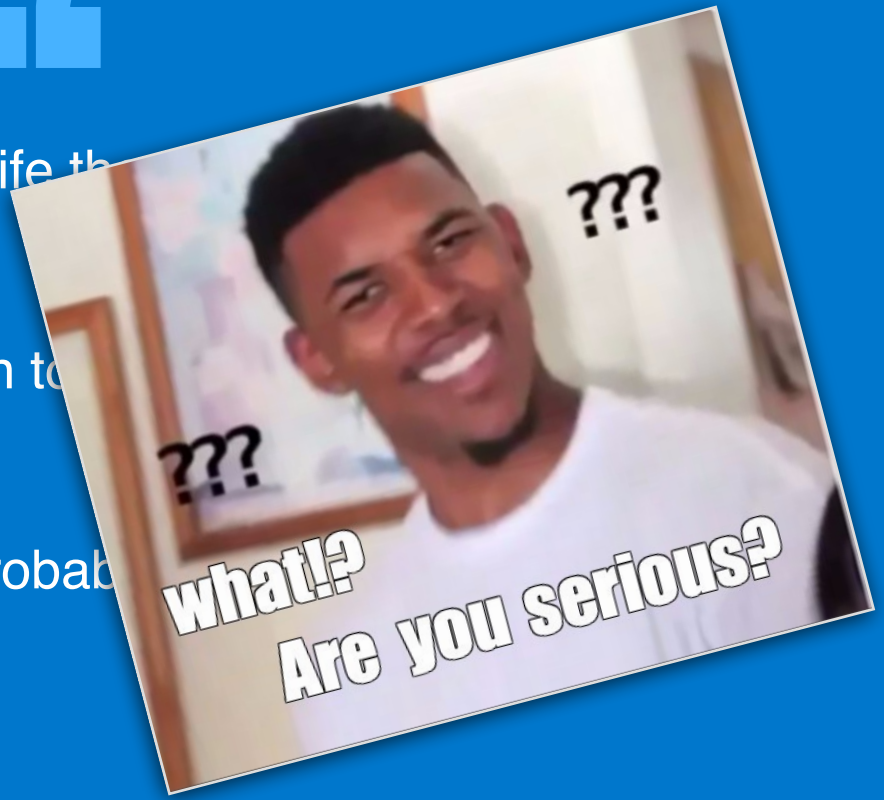

UBER

“ we built a custom prediction system by leveraging an open source distributed RESTful search engine composed of query engine Elasticsearch, data indexing pipeline Logstash, and visualization tool Kibana (ELK).

Simple but powerful, our resulting architecture is easily scalable and works in real time. ”

https://eng.uber.com/elk/

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areas of application

- Data store
- Query engine
- Geo location matching

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demo application specs

- dataset - data.gov.sg (keyword: taxi availability)
- API - https://api.data.gov.sg/v1/transport/taxi-availability

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create your own applications

OR

build interactive dashboards on Kibana

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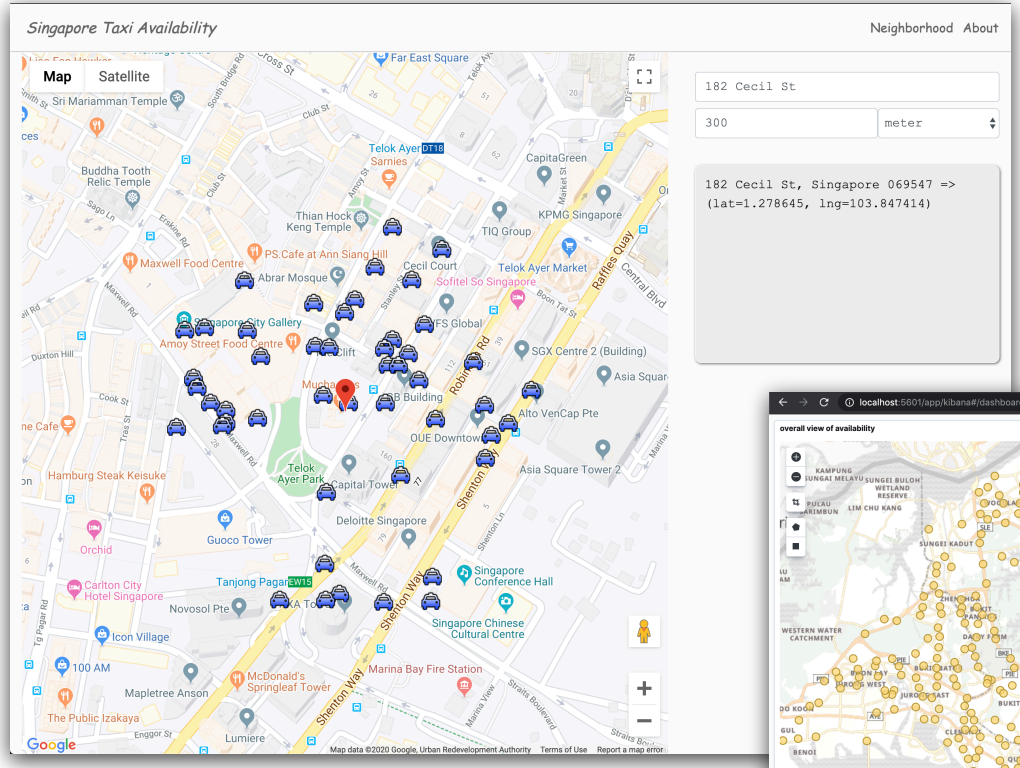

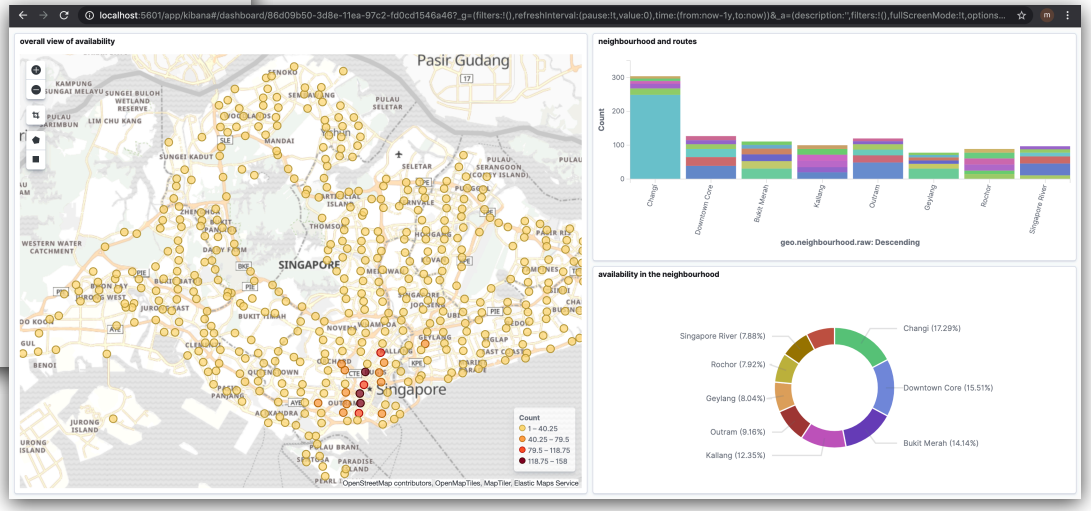

create your own applications

OR

build interactive dashboards on Kibana

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Demo

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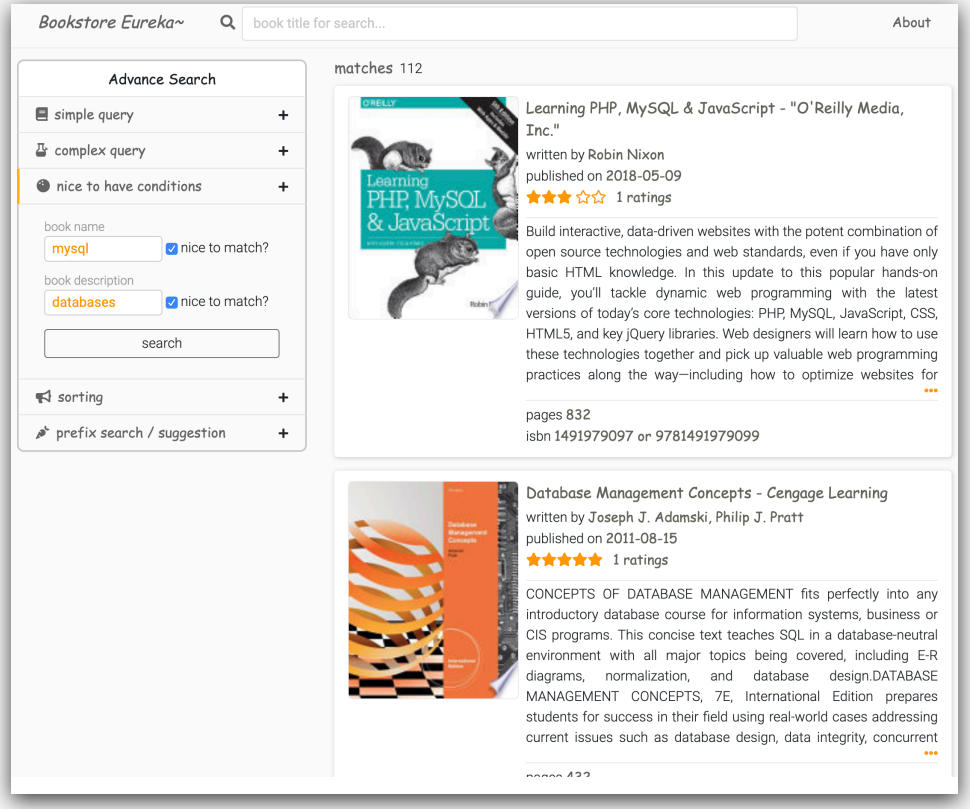

Google Books

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areas of application

- Data store
- Query engine
- Aggregation engine

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demo application specs

- dataset - http://books.google.com/books/content?id={{book_id}}
- API - https://www.googleapis.com/books/v1/volumes/

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Demo

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Azure

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installing elasticsearch on Azure

- 2 approaches
  - Azure marketplace
  - Manual provisioning

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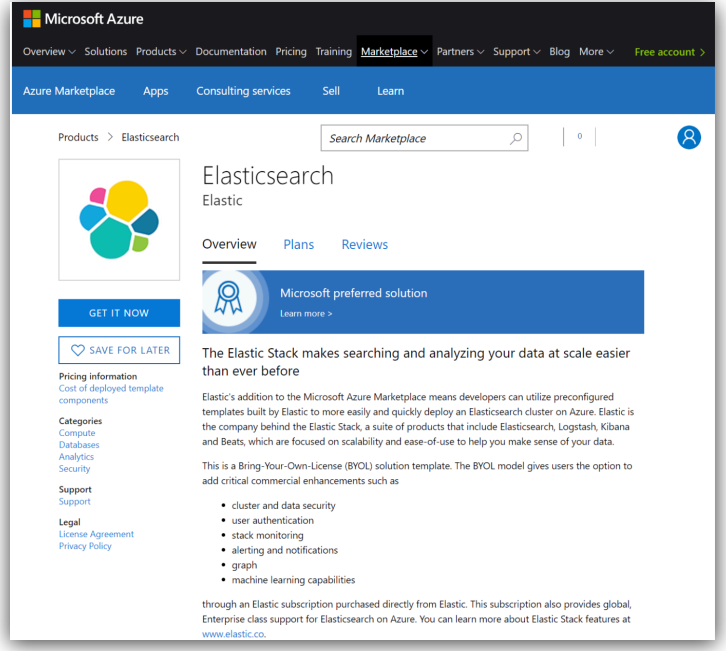
Azure marketplace

- quick and easy
- marketplace link:

  https://azuremarketplace.microsoft.com/en-au/marketplace/apps/elastic.elasticsearch?tab=Overview



manual provisioning

- more flexible but requires sound knowledge on how Azure works
- reference documentation

  https://docs.microsoft.com/en-us/azure/virtual-machines/linux/tutorial-elasticsearch

Create a virtual machine

Create a VM with the az vm create command.

The following example creates a VM named *myVM* and creates SSH keys if they do not already exist in a default key location. To use a specific set of keys, use the `--ssh-key-value` option.

Azure CLI | Copy | Try It

```
az vm create \
    --resource-group myResourceGroup \
    --name myVM \
    --image UbuntuLTS \
    --admin-username azureuser \
    --generate-ssh-keys
```

When the VM has been created, the Azure CLI shows information similar to the following example. Take note of the `publicIpAddress`. This address is used to access the VM.

Azure CLI | Copy | Try It

```
{
  "fqdns": "",
  "id": "/subscriptions/<subscription ID>/resourceGroups/myResourceGroup/providers/Microsoft.Compute/vi
  "location": "eastus",
  "macAddress": "00-0D-3A-23-9A-49",
  "powerState": "VM running",
  "privateIpAddress": "10.0.0.4",
  "publicIpAddress": "40.68.254.142",
  "resourceGroup": "myResourceGroup"
}
```

SSH into your VM

If you don't already know the public IP address of your VM, run the az network public-ip list command:

Azure CLI | Copy | Try It

```
az network public-ip list --resource-group myResourceGroup --query [].ipAddress
```

Learn more?

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Elastic Stack

SOLUTIONS

Kibana — Visualize & Manage

Elasticsearch — Store, Search, & Analyze

Beats, Logstash — Ingest

SaaS

Elastic cloud

On-Prem

Elastic cloud Enterprise

Elastic cloud On Kubernetes

Standalone

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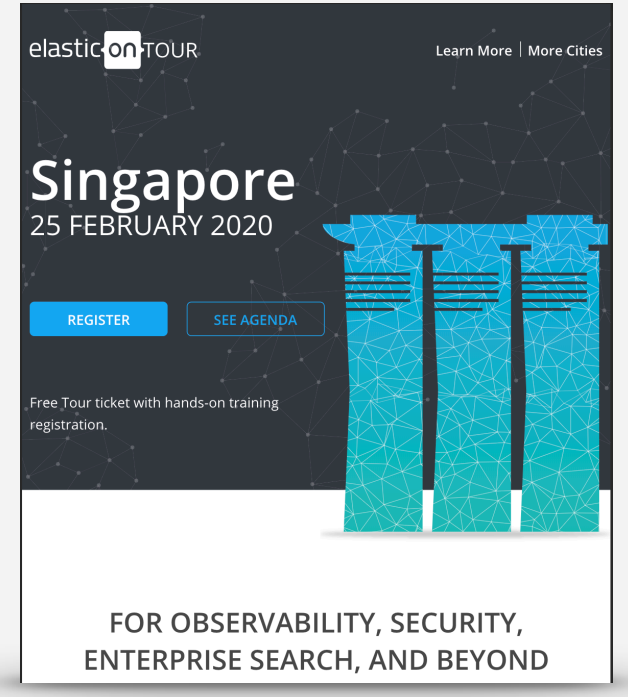

elastic{on} tour Singapore

25-Feb 2020 (next Tuesday)

Marina Bay Sands Convention Centre
10 Bayfront Ave, Singapore

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official trainings

Master the Elastic Stack

The demand for Elasticsearch and Kibana experts increases every day. Our certifications let everyone know that you're just what they're looking for.

Elasticsearch Engineer I

Start the path to certification and learn how to manage deployments and develop solutions.

Learn more

Elasticsearch Engineer II

Develop a deeper understanding of how Elasticsearch works and master advanced deployment techniques.

Learn more

Elastic Certified Engineer

Test your Elasticsearch skills with our performance-based certification exam, and prove you're an expert.

Get certified

DEVELOPMENT AND OPERATIONS

Elastic Certified Engineer

This certification is designed for versatile Elasticsearch experts who can install and manage Elasticsearch clusters, as well as develop solutions for searching and analyzing their indexed data. To prepare for this exam, we recommend taking the **Elasticsearch Engineer I** and **Engineer II** trainings.

Become an Elastic Certified Engineer

ANALYSIS AND INSIGHT

Elastic Certified Ops Analyst

Certified ops analysts are experts at using Kibana for both data visualization and analysis. From creating powerful dashboards to analyzing time-series data to developing machine learning jobs, they can do it all. To prepare for this exam, we recommend taking the **Kibana Data and Ops Analyst** training.

Learn about Elastic Certified Ops Analyst exam

Get involved at https://training.elastic.co/

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resources

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  - geo demo: https://github.com/quoeamaster/bigdata_blogs/tree/master/es_geo_demo_webapp
- social media
  - https://www.linkedin.com/in/jason-wong-391a7624/
  - https://github.com/quoeamaster
  - https://medium.com/@quoeamaster
  - https://bigdata887.wordpress.com/
  - https://twitter.com/QueMaster3

Link to the presentation:

FAQ

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Thank You~

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