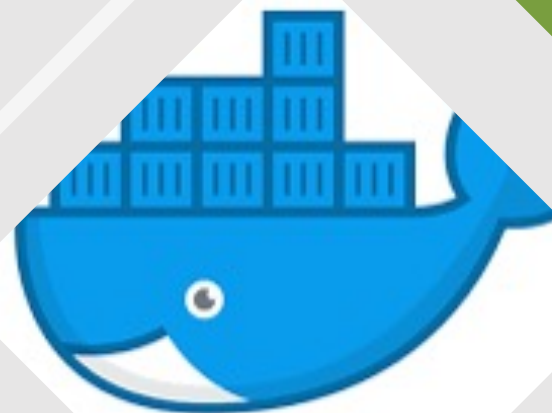


Deploying an
application using AWS
Elastic Beanstalk



Agenda

Version control
systems

Git Workflow

- Git common commands

Containerization:
VM vs Containers

Docker workflow.

- Docker commands

Flask Web
framework

Simple Flask Hello
world app

- Run flask on your machines

Dockerize this flask
app

AWS:

- What is it?
- Why we need it?
- Elastic Beanstalk

Deploy your app on
AWS

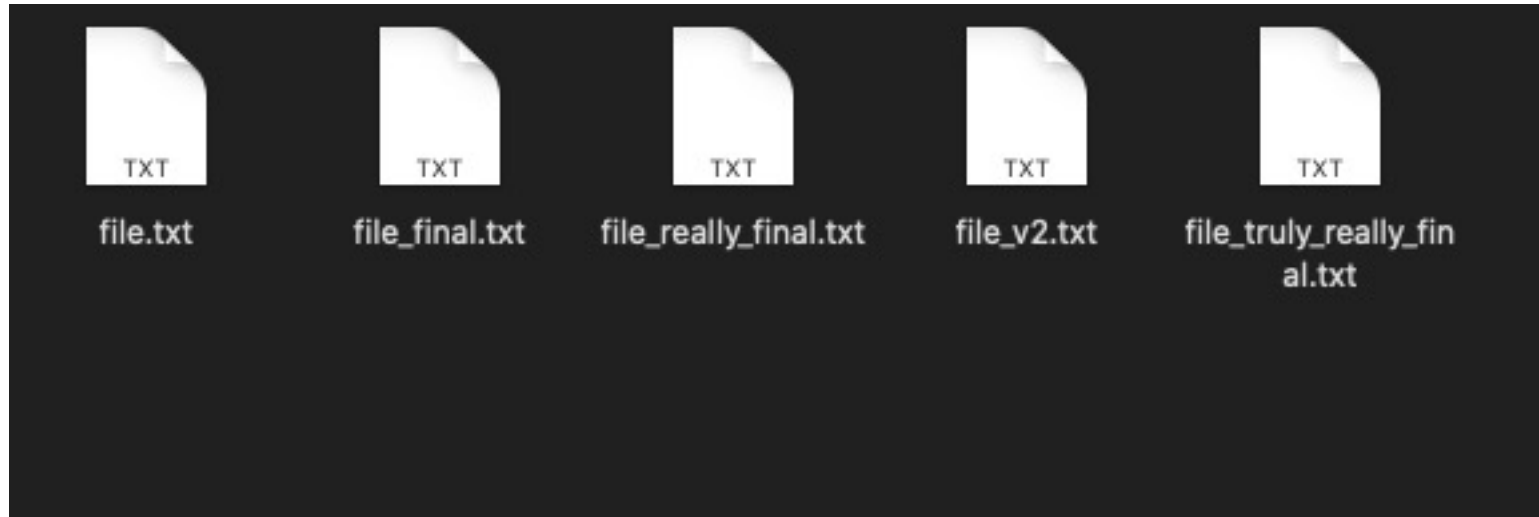
Q&A



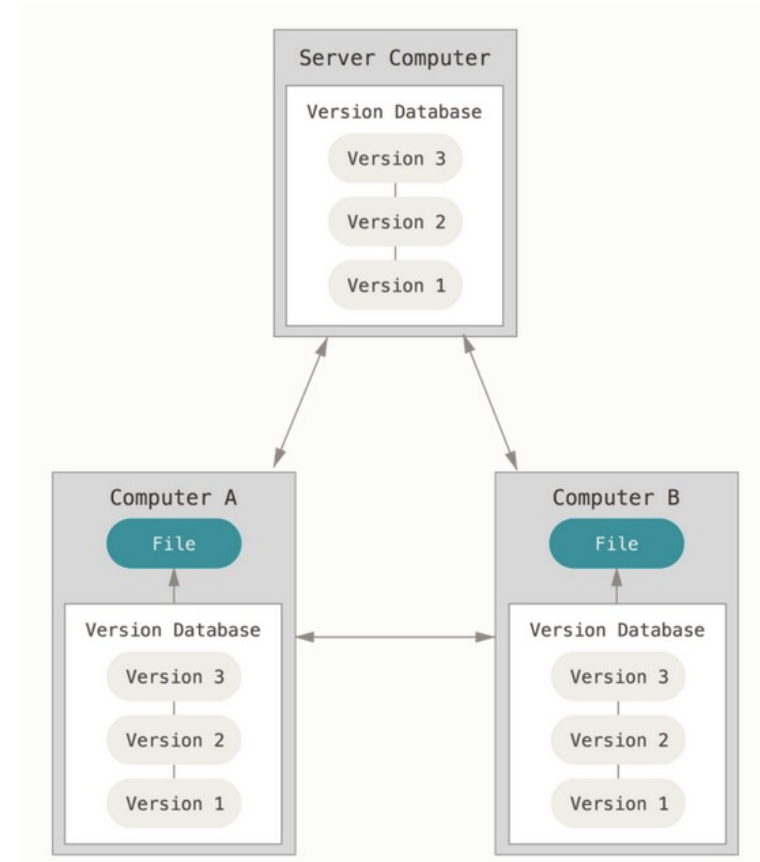
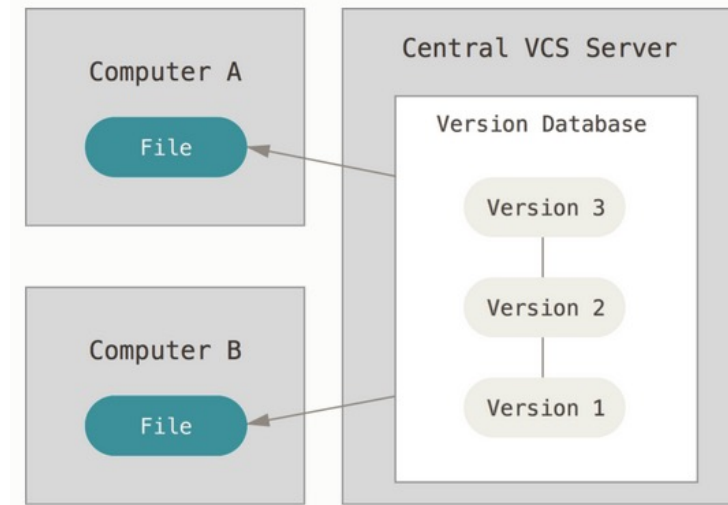
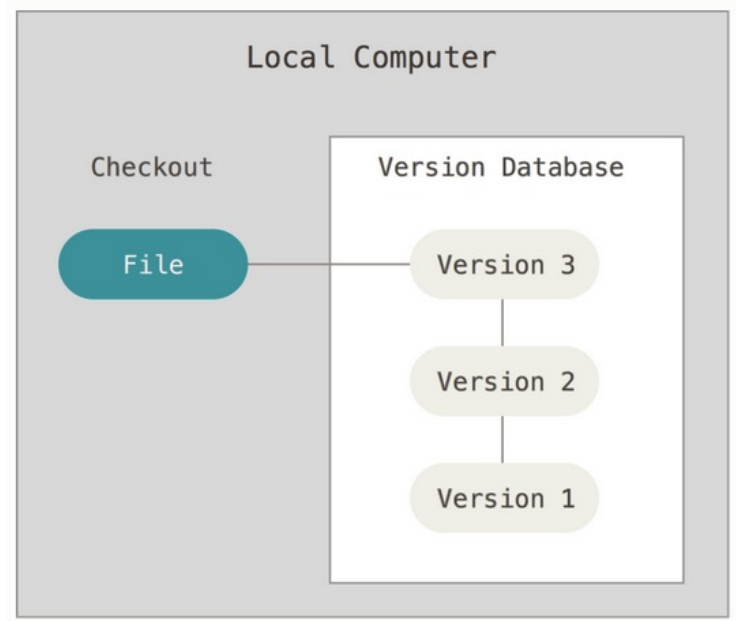
Version Control

What is Version control?

- Keeping track of file changes by a version number instead of making tons of copies
- Helps in getting back previous versions easily
- Good collaboration across teams
- Types of systems available: **Git**, Mercurial, Bazaar, Darcs

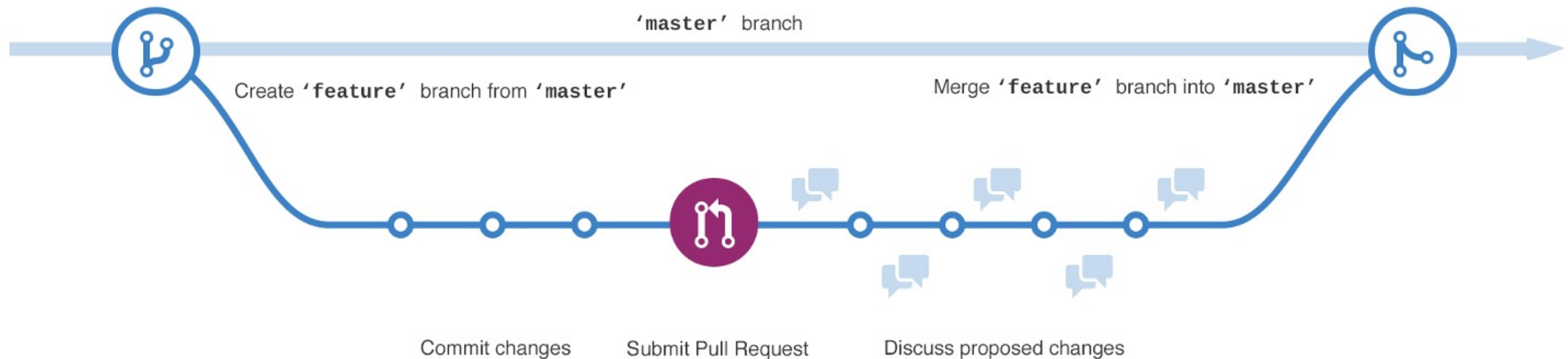


It got better from left to right



Git workflow

- Why Git is so popular compared to other DVCS's



Most common Git commands

```
git add .
```

```
git commit -m "Your commit message"
```

```
git push origin main/development
```

```
git pull origin main/development
```

```
git checkout -b "branch name"
```

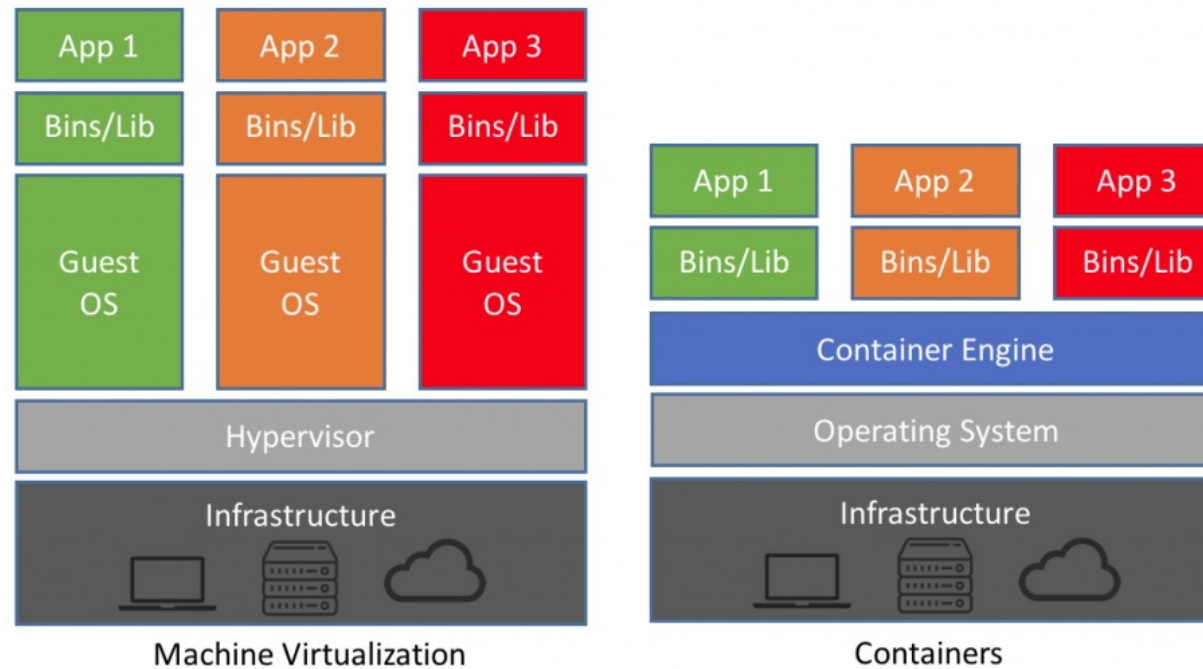
```
git branch "branch name"
```



Containerization

Containerization and VMs'

- The answer to the question “It works in my system, why doesn’t it work in yours?”
- Virtual Machines are full operating systems with all resources. It is basically a fully virtual desktop/OS
- Container is a very light weight version of an OS that has only the required components to make an OS and then takes the missing components from the Host OS
- Basically, a VM is “Hardware-level” virtualization and Container is an “OS-level” virtualization

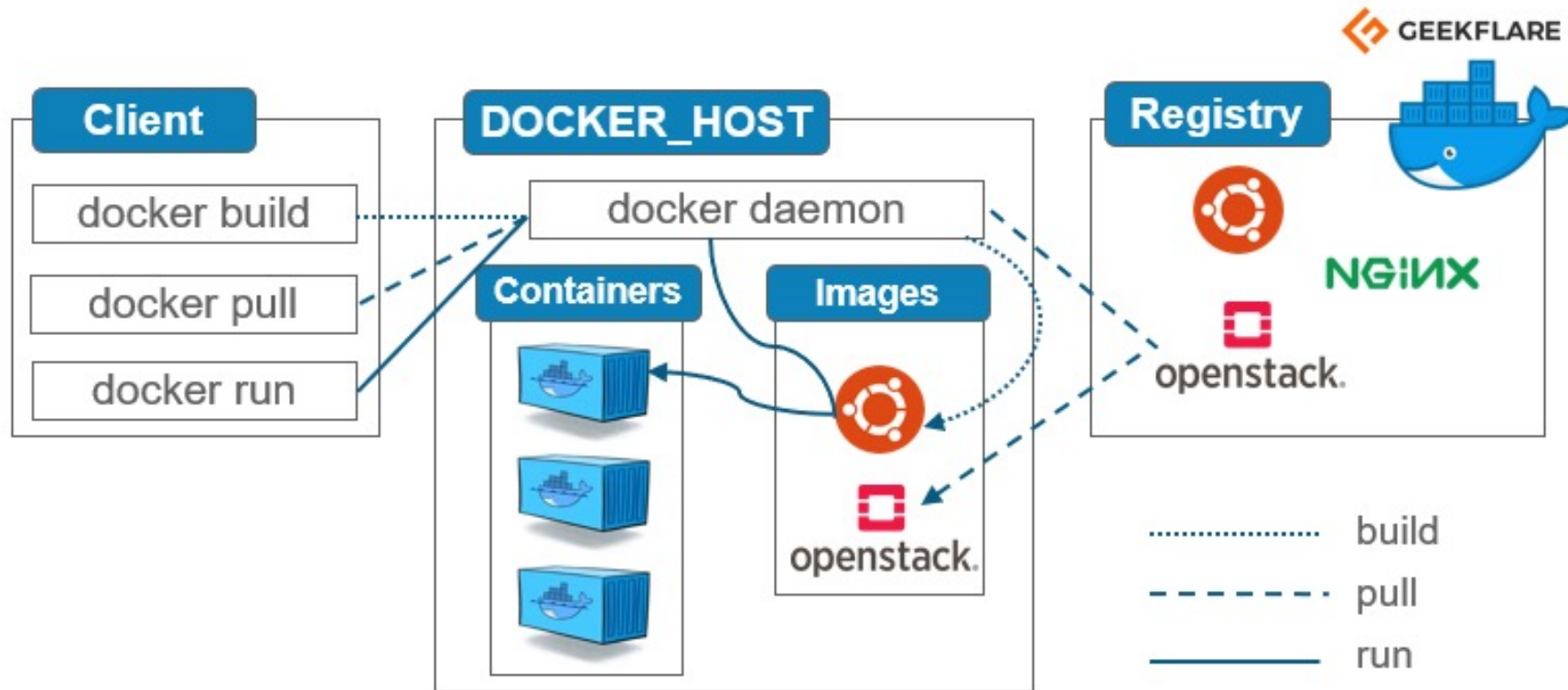


Containerization/VM platforms

- VirtualBox
- **Docker**  Our Focus for today
- Apache Mesos
- Vagrant
- Wox

Docker

- It is a tool to help you deploy applications by containerizing them.
- The important point is that it takes care of all issues related with dependencies



Basic Docker commands

```
docker build -t "name" .
```

```
docker run -d -p host_port:container_port  
"name"
```

```
docker ps
```

```
docker images
```



Flask

What is Flask?

- It is a python framework to develop web applications
- Running A Flask application will create a link/URL to your application.
- This application needs to be deployed on a server or using cloud services(Eg: AWS, Google Cloud, Azure etc.)

```
from flask import Flask, render_template
```

```
application = Flask(__name__)
```

```
@application.route('/')  
def hello_world():
```

```
    return render_template("index.html")
```

```
if __name__ == '__main__':
```

```
    application.run(debug=True)
```

→ Your HTML/CSS Javascript



Cloud Computing

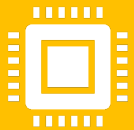
Cloud Computing Basics



Deliver your entire infrastructure – servers, databases, apps, compute and much more through the internet.



The “Cloud” is the place where you find everything



Most of them work on a Pay-as-you-use model so it is very cheap compared to maintaining the full infrastructure by yourself



Amazon Web Services



Amazon
EC2



Amazon
RDS



AWS
Direct Connect



Amazon
EBS



Amazon
S3



Elastic Load
Balancing



Amazon
Route 53



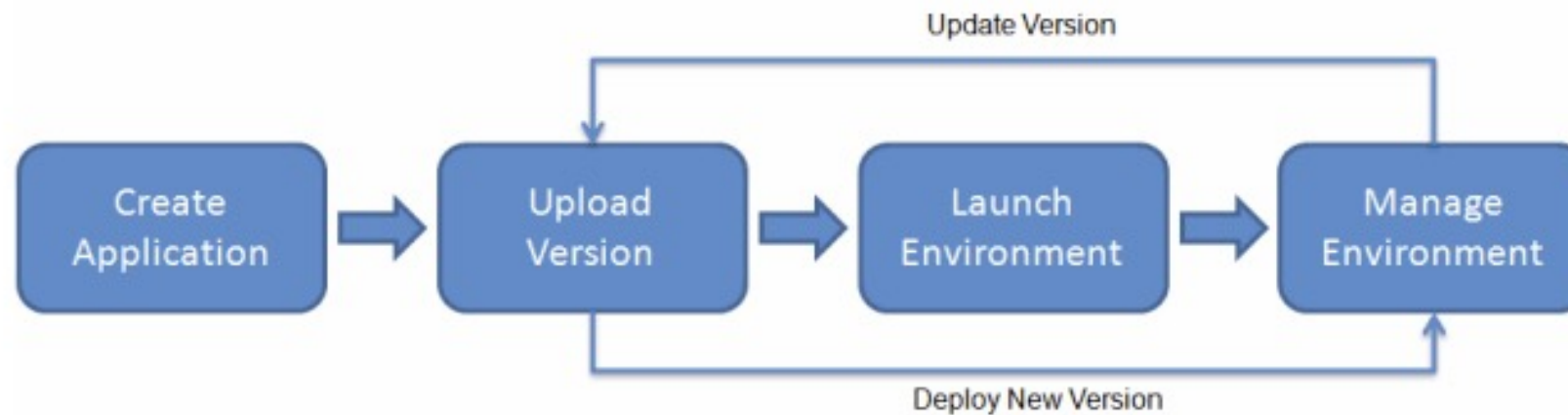
Amazon
VPC



Elastic IP

Elastic Beanstalk

- This is a service by AWS to help you quickly deploy applications without worrying about any underlying infrastructure
- You only need to upload your code and beanstalk takes care of the rest





Let's deploy our app!