Lightweight Java EE for <Buzzword> Services

Coding, building, deploying, scaling: fast and efficient!

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Session Material

Slides, Code, Video

http://fihlon.ch/javacro17

About Me

- **Software Engineer**
  CSS Insurance, Open Source Software
- **Agile Coach**
  CSS Insurance
- **Lecturer**
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- **Speaker**
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- **Author**
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Agenda

Buzzword Bingo

Theory of Evolution

Live Coding

Wrap-up

Buzzword Bingo

Buzzword Bingo

- **Monolith**
  Bad by default!
- **Microservices**
  Solve every problem!
- **Nanoservices**
  Solve all other problems!
- **Docker**
  Just because it’s cool!
- **Java EE**
  Uncool and heavy framework for bloated monoliths!

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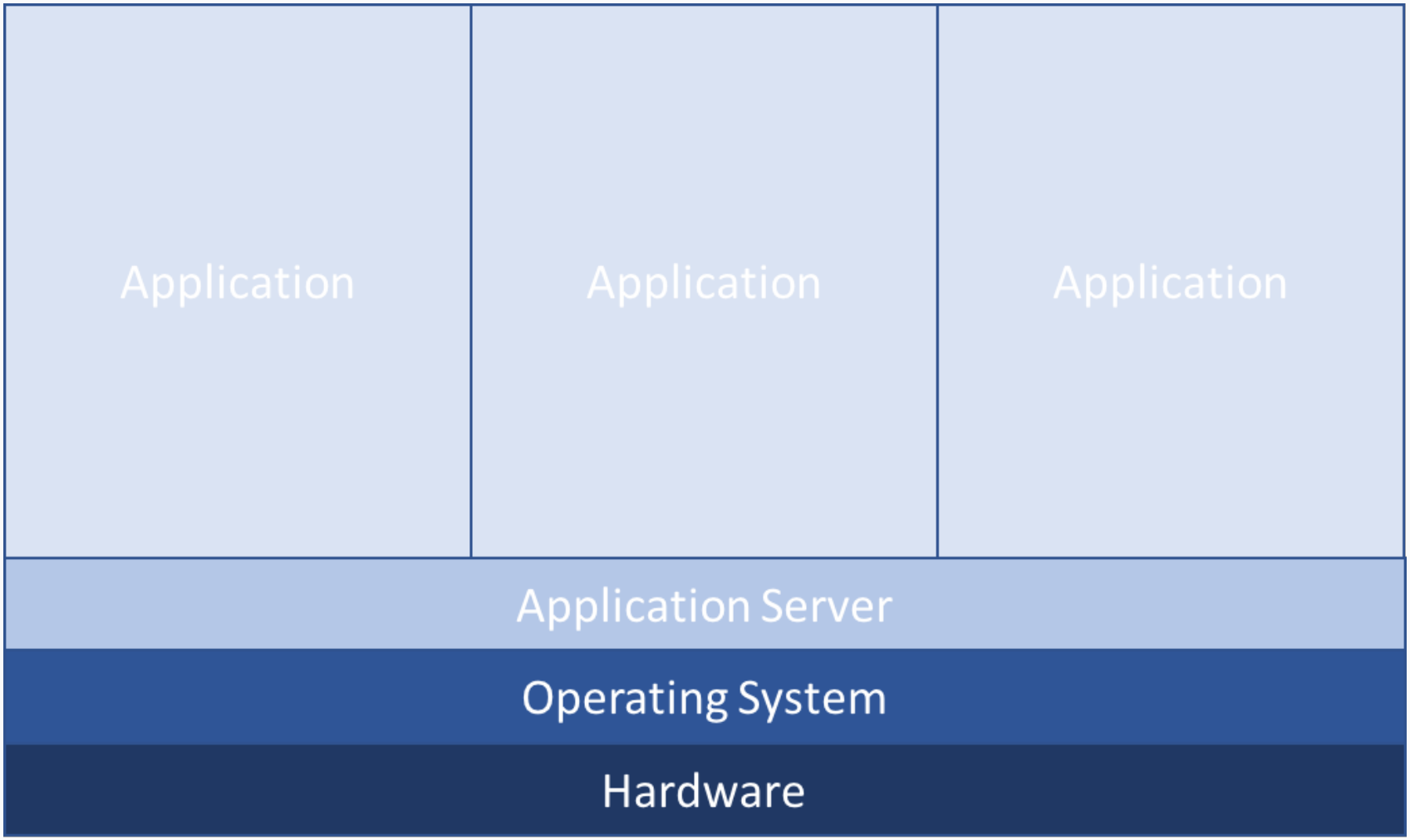
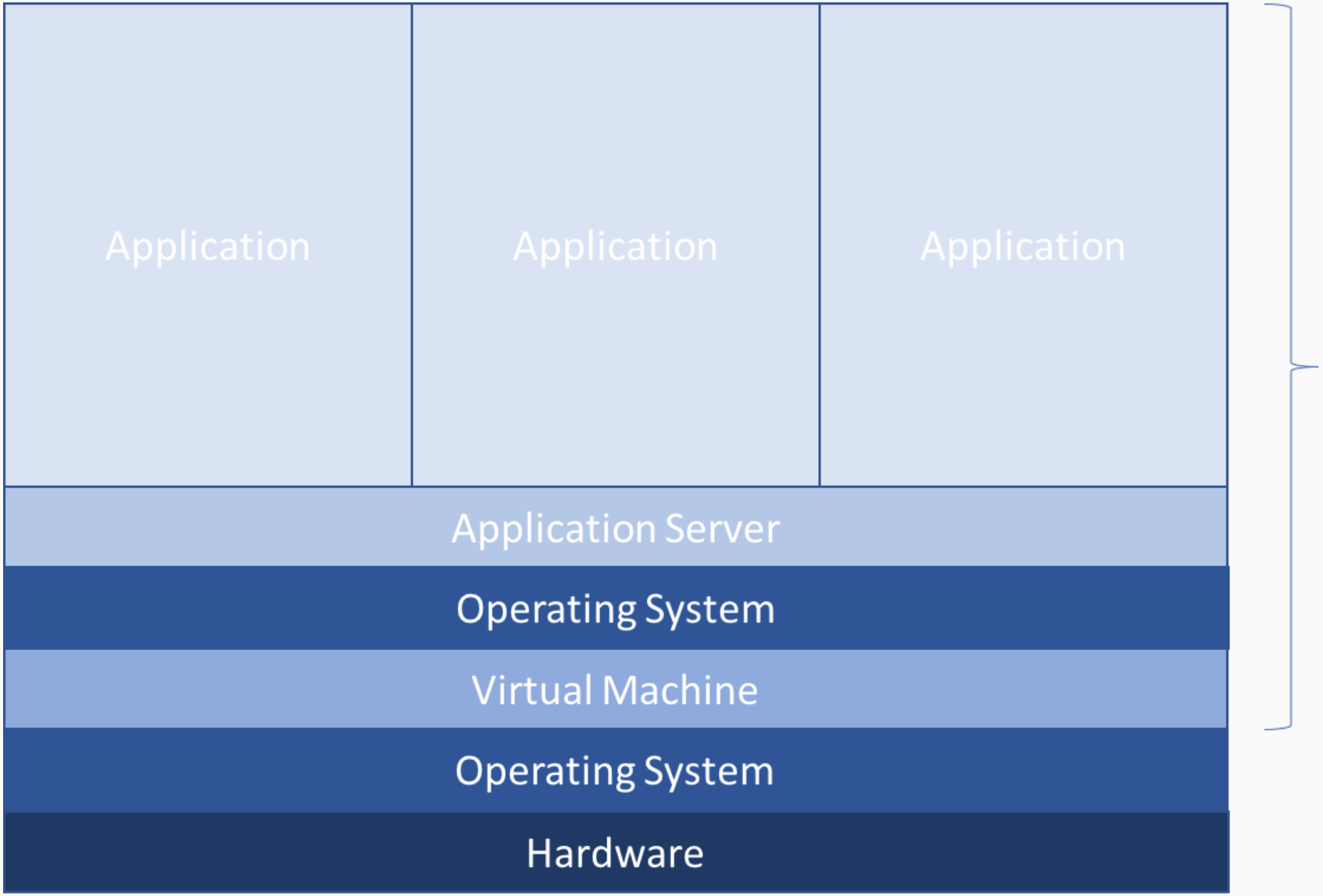
Theory of Evolution

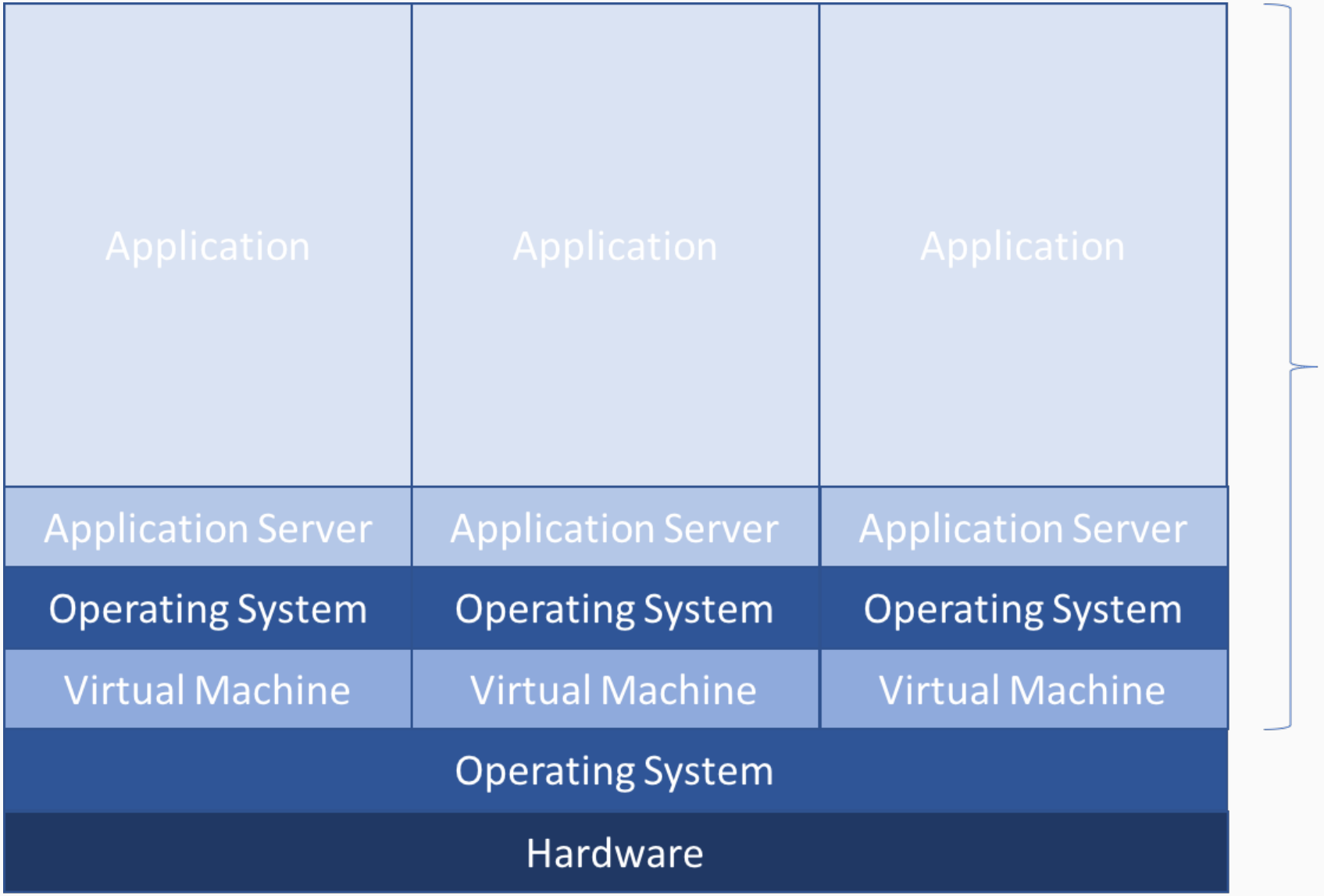
Expensive Resources



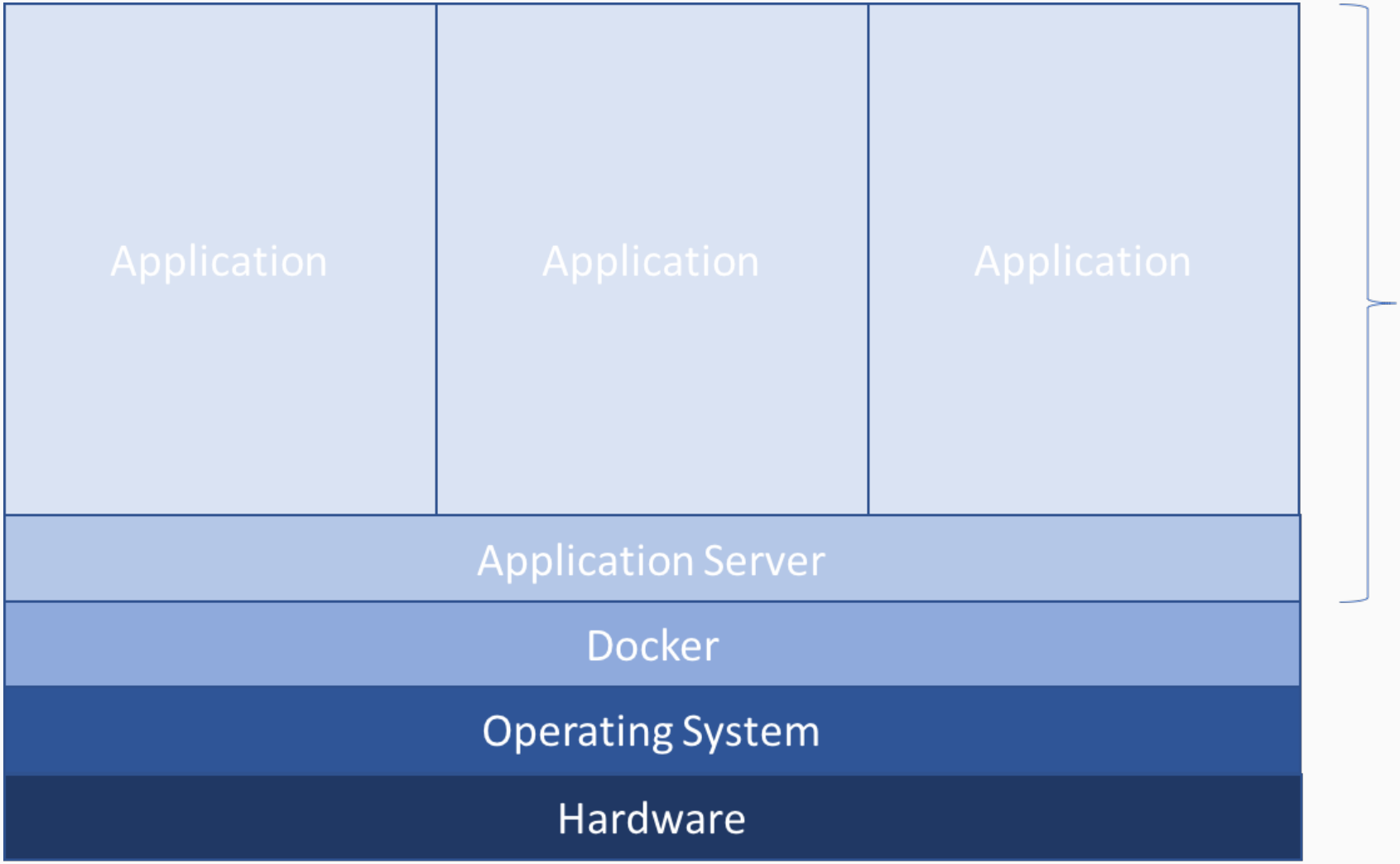
Add Virtualization



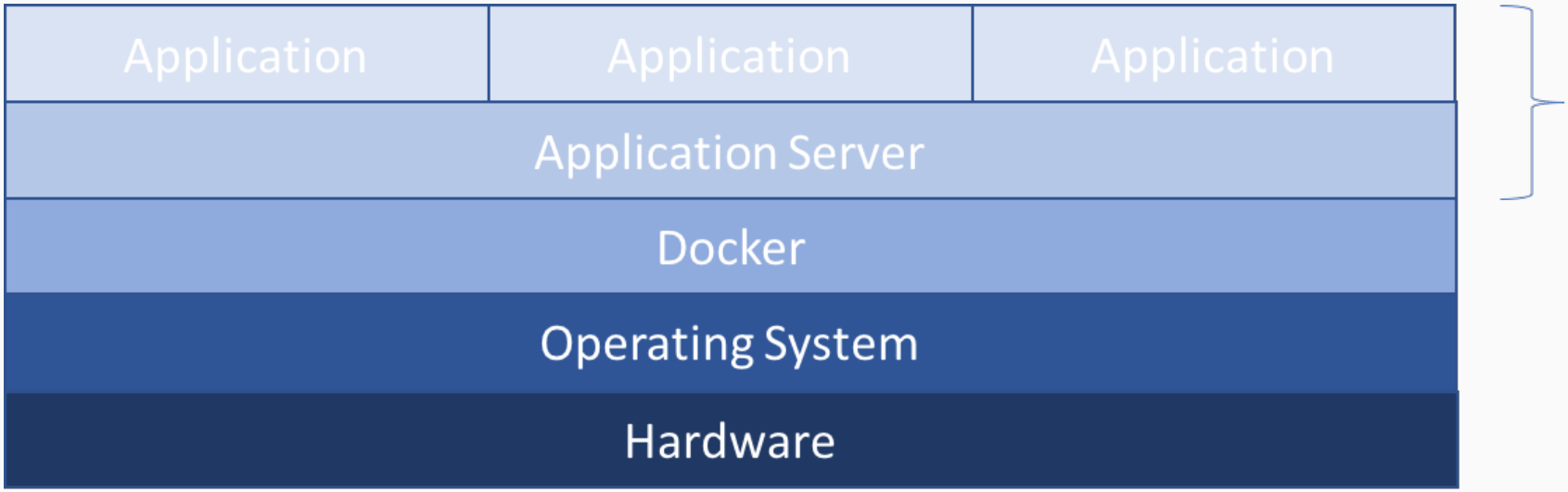
One VM per application



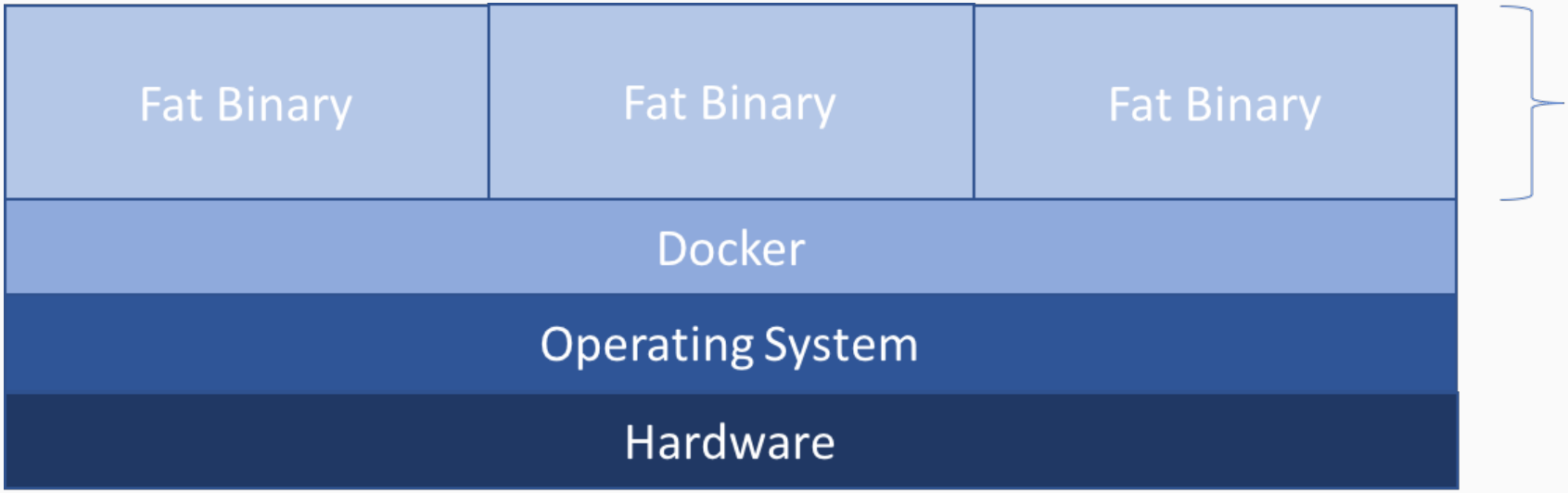
Shared Resources with Docker



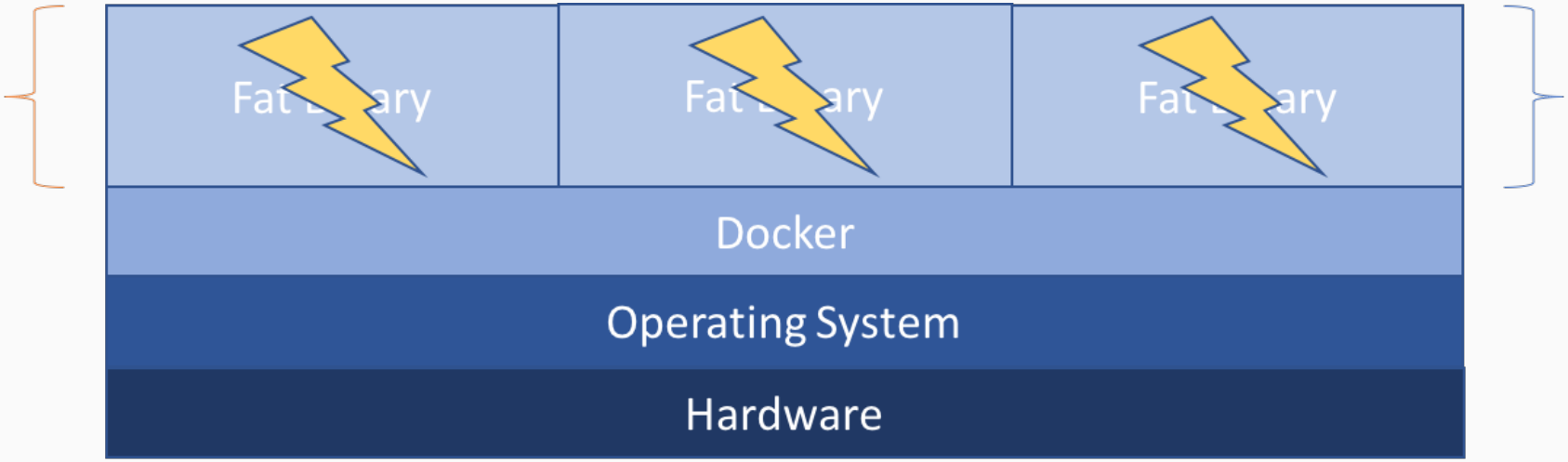
Microservice Hype



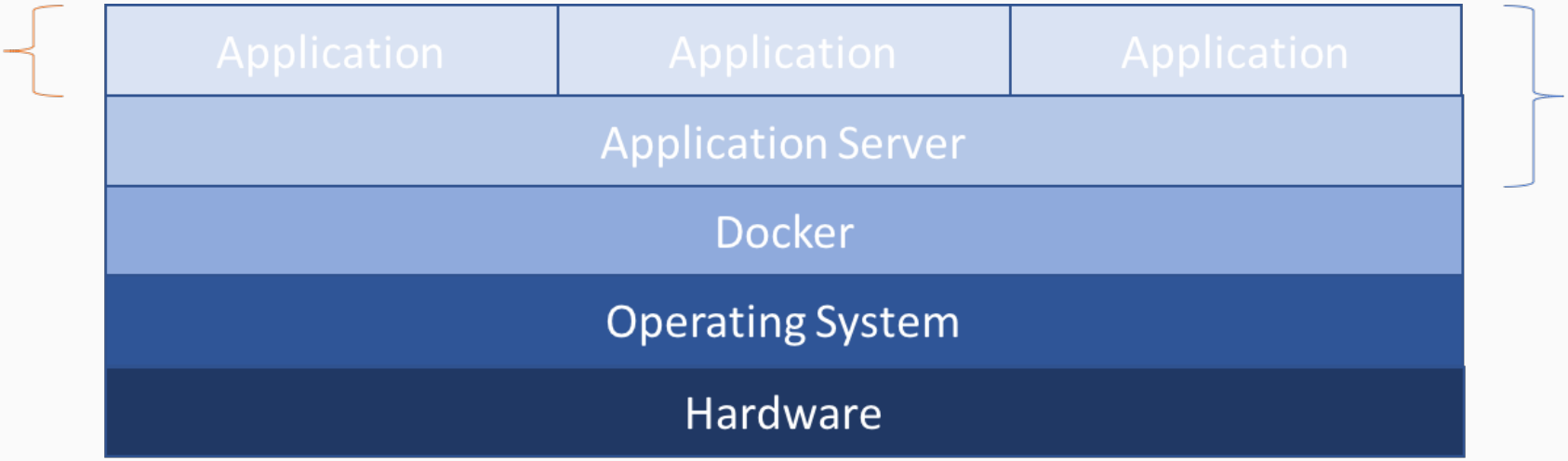
Fat Binaries...



...long build times



Short build times



Live Coding

Prepare the Swarm

- List all available machines
  ```
  docker-machine ls
  ```
- Create a new machine as a manager
  ```
  docker-machine create -d virtualbox mgr
  ```
- Create a new machine as a worker
  ```
  docker-machine create -d virtualbox node01
  ```
- Login to the manager
  ```
  docker-machine ssh mgr
  ```
- Initialize the swarm
  ```
  docker swarm init \
  --advertise-addr 192.168.99.100
  ```

Prepare the Visualizer

- Start the visualizer service

```
docker run -it -d -p 8080:8080 \
-e HOST=192.168.99.100 -v \
/var/run/docker.sock:/var/run/docker.sock \
manomarks/visualizer
```

- Open the visualizer service in a web browser

```
http://192.168.99.100:8080/
```

Join the Swarm

- Ask the manager node for the token to join the swarm
  `docker swarm join-token worker`
- Login to the worker node
  `docker-machine ssh node01`
- Join the worker to the swarm
  `docker swarm join --token <token> \`
  `192.168.99.100:237`

Verify the Swarm

- Login to the manager
  `docker-machine ssh mgr`
- List all nodes
  `docker node ls`
- Show more detailed information
  `docker info`

Create a Network

- Login to the manager
  `docker-machine ssh mgr`
- Create a new overlay network
  `docker network create -d overlay javacro`
- List all networks
  `docker network ls`

Deploy Services

- Login to the manager
  ```
  docker-machine ssh mgr
  ```
- Deploy the time service
  ```
  docker service create --network javacro \
  --name timeservice mcpringle/timeservice
  ```
- Deploy the hello service
  ```
  docker service create --network javacro \
  -p 8181:8080 \
  --name helloservice mcpringle/helloservice
  ```
- List all services
  ```
  docker service ls
  ```

Testing, Scaling and Draining

- Testing our services

```
curl \
http://192.168.99.100:8181/api/hello/JavaCro
```

- Scaling services up and down

```
docker service update \
--replicas 3 helloservice
```

- Draining the manager node

```
docker node update --availability drain mgr
```

Wrap-up

Conclusion

With Java EE and Docker you get...

- easy to understand code
- fast build times
- reproducable deployments
- easy scaling of your services

You are fast and efficient because you have your focus on your business code. **You create business value!**

Thank You! Questions?

Slides, Code, Video

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