MIÉRT KELL NEKÜNK A KUBERNETES, HOGYAN HASZNÁLJUK KI AZ ELŐNYEIT

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HELLO!

- **Vigh Zoltán - Zool**
- **CodeFactory - Founder/Cloud Engineer**
- +10 Év Linux/BSD
- Hobbi == munka ;)

[devopsoktatas.hu]
AGENDA

- DevOps
- Docker
- Kubernetes
- Cloud (Oracle Cloud)
1. **DEVOPS?**

Kell ez nekünk?
**BEFORE DEVOPS?**

- No, You cannot have Redis!
- It works on my machine, there must be a problem with your server!
- Here's the code, you need to deploy this today!
- How could I know it needs Python 3?
OMG! DevOps
This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

github.com/cnclandscape
2. **MI AZ A DOCKER?**

Miért kell ez nekünk?
VMs vs Docker

- **App A**
- **Bins/Libs**
- **Guest OS**
- **Hypervisor**
- **Host OS**
- **Server**

- **App B**
- **Bins/Libs**
- **Guest OS**

- **App A**
- **Bins/Libs**
- **Docker Engine**
- **Host OS**
- **Server**

- **App B**
- **Bins/Libs**
- **Server**
Market View: Evolution of IT

1995

- Thick, client-server app on thick client
- Well-defined stack: O/S, Runtime, Middleware
- Monolithic Physical Infrastructure

2015

- Thin app on mobile, tablet
- Assembled by developers using best available services
- Running on any available set of physical resources (public/private/virtualized)

Docker
```bash
# Example of a Dockerfile to build an nginx image
FROM debian:jessie
RUN apt-get update && apt-get install -y nginx=1.6.2
EXPOSE 80 443
CMD ["nginx", "-g", "daemon off;"]
```
Dockerfile → docker build → Docker Image
3. APPLICATION PATTERNS
Patterns

× Stateless
× Stateful
× Daemon
× Batch
PATTERNS - STATELESS (DEPLOYMENT)

- No persistent states
  - Web frontends
  - Web servers

NGINX

ORACLE WEBLOGIC SERVER
PATTERNS - STATEFUL (STATEFULSET)

- Keeps states
  - Databases
  - Message queues

ORACLE®
NOSQL DATABASE

MariaDB
mongodb
**Patterns - Daemon (Daemonset)**

- Daemon that runs as a background process
  - Cluster storage
  - Logs collection
  - Node monitoring

Logos for Fluentd and Linkerd.
Patterns - Batch (Jobs)

- Batch processing of independent work items
  - Emails to send
  - Frames to render
4. Mi az az orchestration?

Miért kell ez nekünk?
Kubernetes vs. Docker Swarm vs. Mesos
5. **MI AZ A KUBERNETES?**

Miért kell ez nekünk?
KUBERNETES

- Open Source Docker orchestration rendszer
- Cloud Native Computing Foundation
- Google
K8S ARCHITEKTÚRA
K8S DEPLOYMENT PÉLDA

```yaml
apiVersion: extensions/v1beta1
kind: Deployment
metadata:
  name: example-deployment
spec:
  replicas: 2
  template:
    metadata:
      labels:
        app: example
    spec:
      containers:
        - name: example
          image: example:latest
          ports:
            - containerPort: 8080

apiVersion: v1
kind: Service
metadata:
  name: example-svc
  labels:
    app: example
spec:
  type: LoadBalancer
  ports:
    - port: 80
  selector:
    app: example
```
6. ORACLE CLOUD
ORACLE CLOUD

- 2017. szeptember – CNCF
- CoreOS support
- Managed Kubernetes
Oracle Container Native Application Development Platform

Integrated Developer Experience UI

Container Pipelines
Wercker CI/CD Service

Container Registry
Private Registry Service

Container Engine
Fully-Managed Kubernetes Service

Git

{Build} → Push to Registry → Test → Push

 Deploy to Kubernetes

Managed HA Control Plane
Orchestrates Your App

Kubernetes Clusters
Bare Metal and VM Shapes

Enterprise Grade Performance & Security

Oracle Cloud Infrastructure
KÖSZÖNÖM A FIGYELMET!
Q&A

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