



# **Host, Scale and Manage Big Games**

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2011/08/16  
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## Consulting, development and workshops since 2005

**NoSQL**

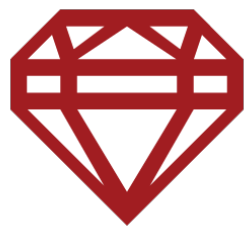
### Databases

Selection  
Integration  
Migration



### Automation

Deployment  
Workflows  
Clusters



### Ruby & RoR

Code review  
Security review  
Workshops  
Development



### Performance

Analysis  
Optimization



solution provider

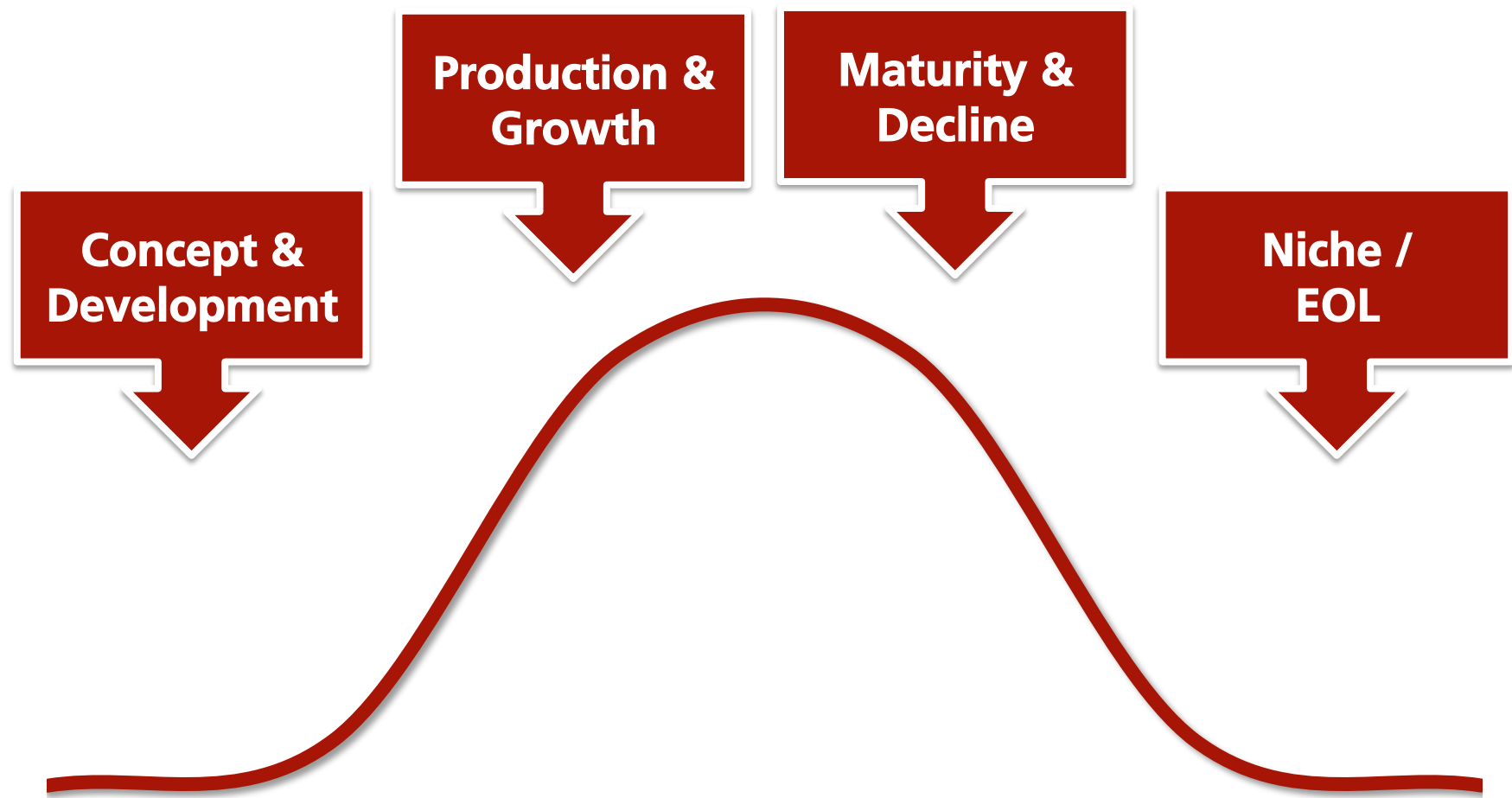


# EC2 & Eucalyptus Cluster Management

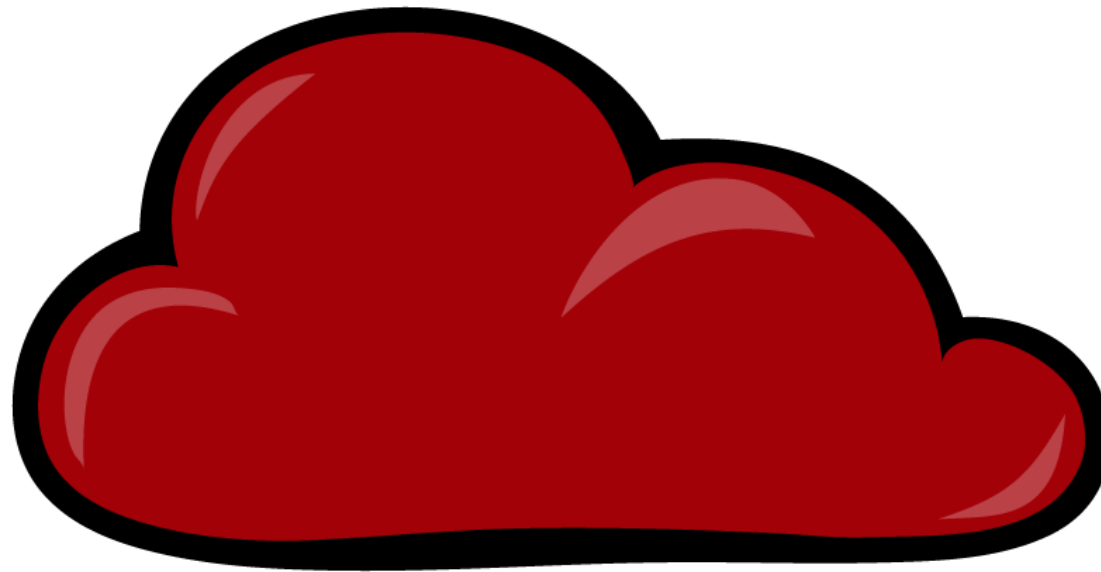
- Automatic Configuration
- Self Healing Clusters
- Auto Scaling Clusters
- One Click Deployment
- One Click Cluster Cloning
- Monitoring & Alerting
- Logs & Accounting
- Firewalls & Backups
- Access & Rights Management



# Life cycle of a game



# Cloud Computing





# Amazon Elastic Compute Cloud



- Virtual servers via API call
- Pay per hour
- Different instance types in different regions



# Regions and Availability Zones



## ■ Regions

- Multiple Availability Zones
- Slightly different costs

## ■ Availability Zones

- 4 x US-east – Northern Virginia
- 3 x US-west – Northern California
- 3 x EU-west – Ireland
- 2 x AP-southeast – Singapore
- 2 x AP-northeast – Tokyo



# Server types

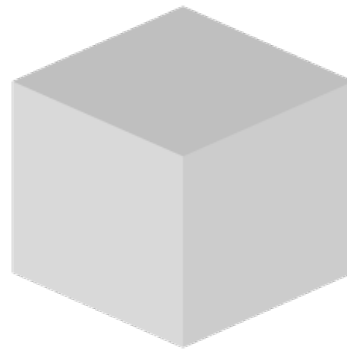


|                       | RAM     | Cores x ECU | Arch  | Hourly Cost (US-East) | Monthly Cost (US-East) |
|-----------------------|---------|-------------|-------|-----------------------|------------------------|
| <b>Standard</b>       |         |             |       |                       |                        |
| Small                 | 1.7 GB  | 1 x 1       | 32bit | \$0.085               | \$62                   |
| Large                 | 7.5 GB  | 2 x 2       | 64bit | \$0.34                | \$248                  |
| Extra Large           | 15 GB   | 4 x 2       | 64bit | \$0.68                | \$496                  |
| <b>High-Memory</b>    |         |             |       |                       |                        |
| Extra Large           | 17.1 GB | 2 x 3.25    | 64bit | \$0.50                | \$366                  |
| Double Extra Large    | 34.2 GB | 4 x 3.25    | 64bit | \$1.00                | \$732                  |
| Quadruple Extra Large | 68.4 GB | 8 x 3.25    | 64bit | \$2.00                | \$1464                 |
| <b>High-CPU</b>       |         |             |       |                       |                        |
| Medium                | 1.7 GB  | 2x 2.5      | 32bit | \$0.17                | \$124                  |
| Extra Large           | 7 GB    | 8 x 2.5     | 64bit | \$0.68                | \$496                  |

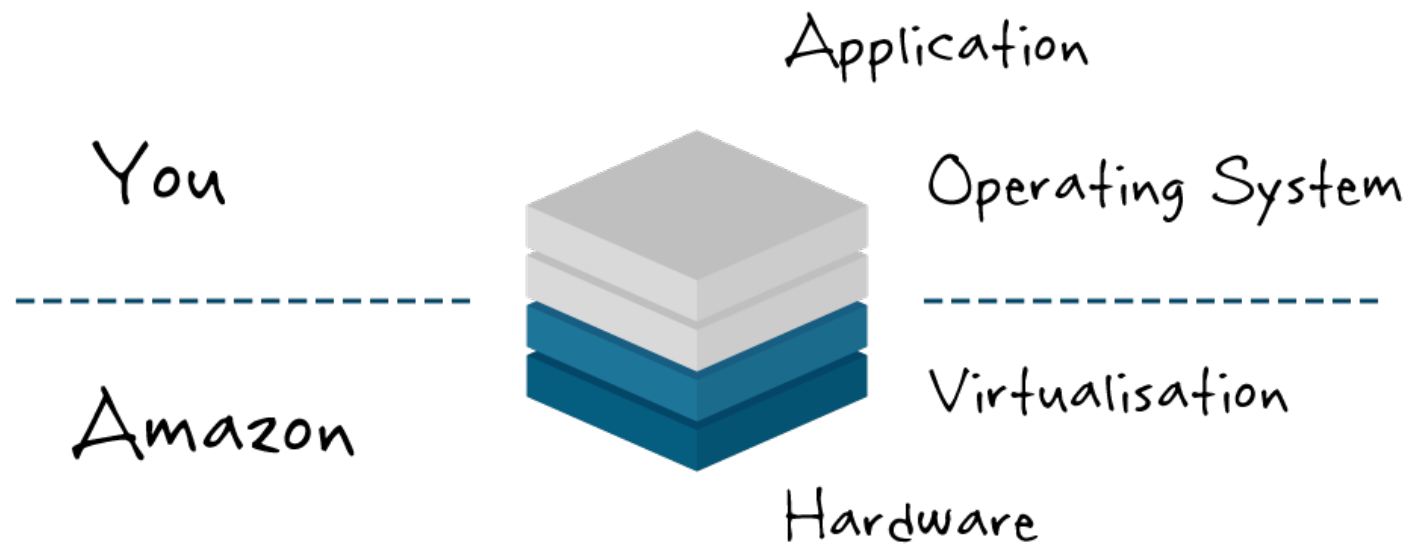
# Amazon EC2 additional services



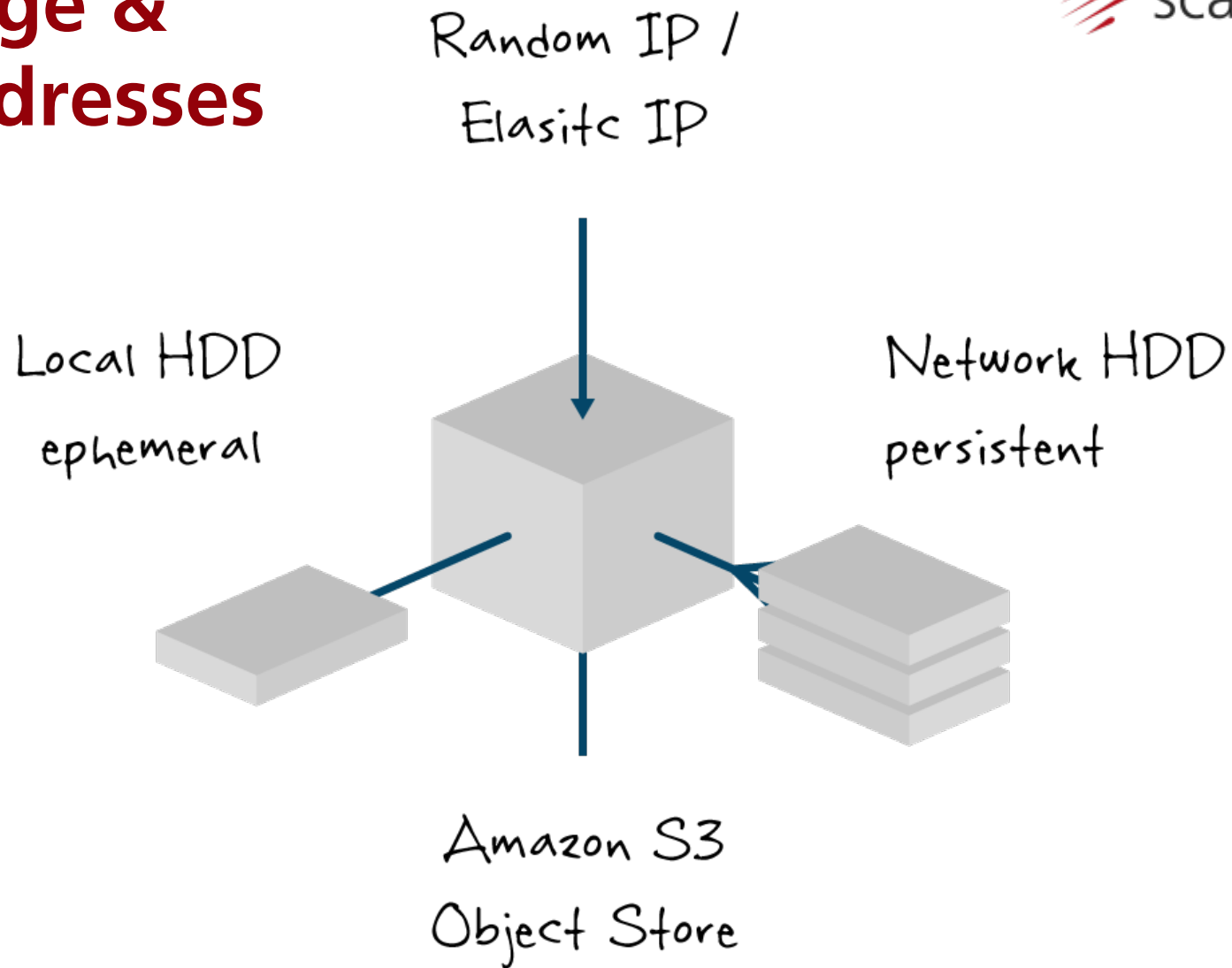
- Elastic Load Balancing
- Virtual Private Cloud
- Elastic IP
- CloudWatch
- Spot instances
- Elastic Block Storage
- And a lot more ...



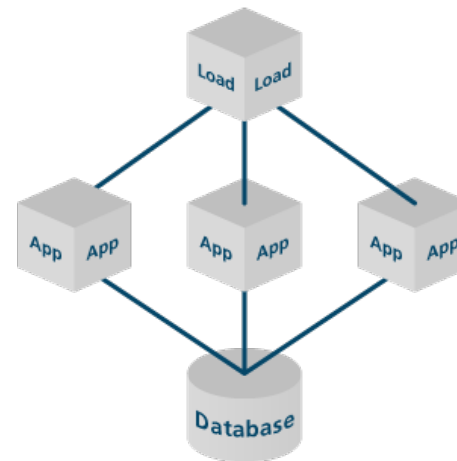
# Amazon EC2



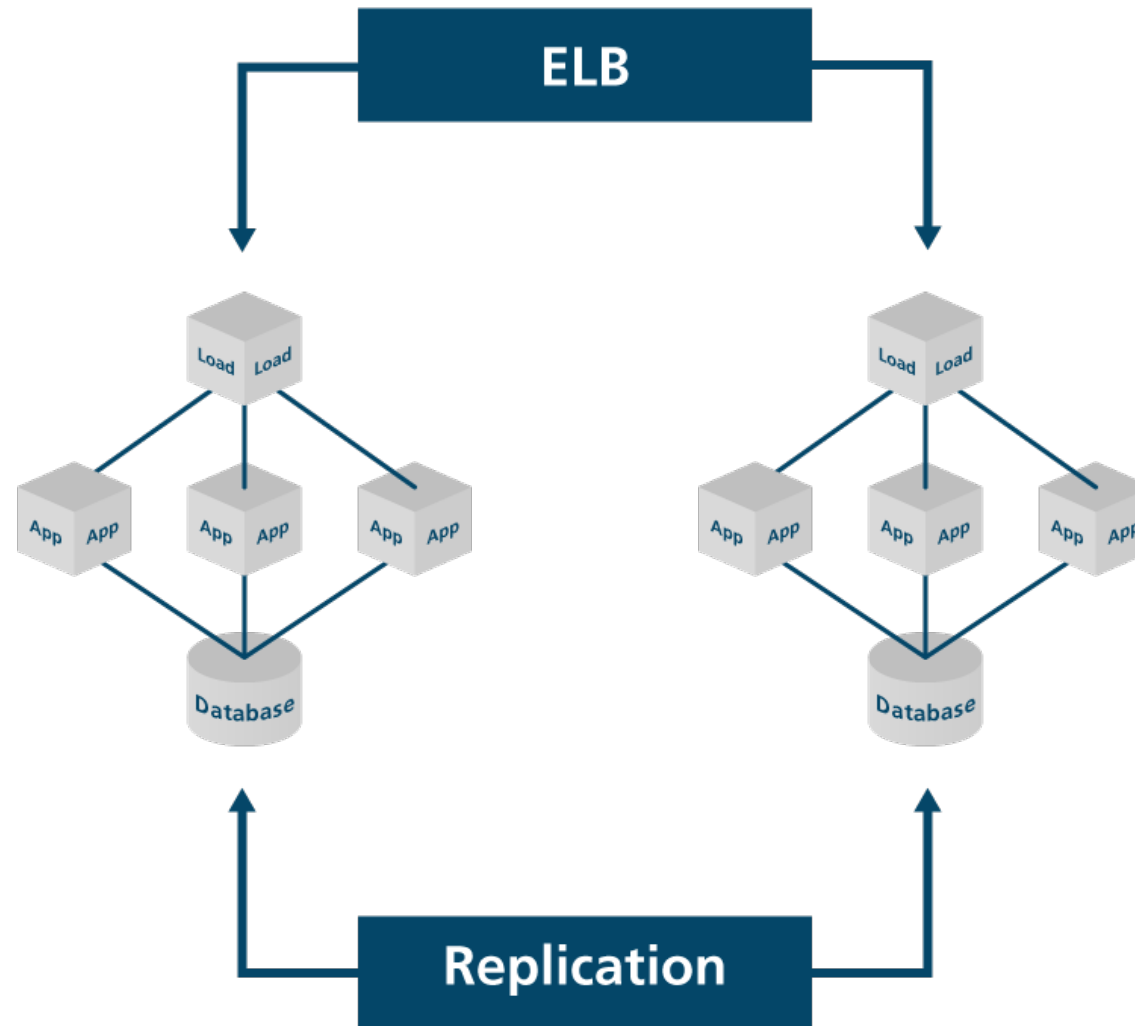
# Storage & IP Addresses



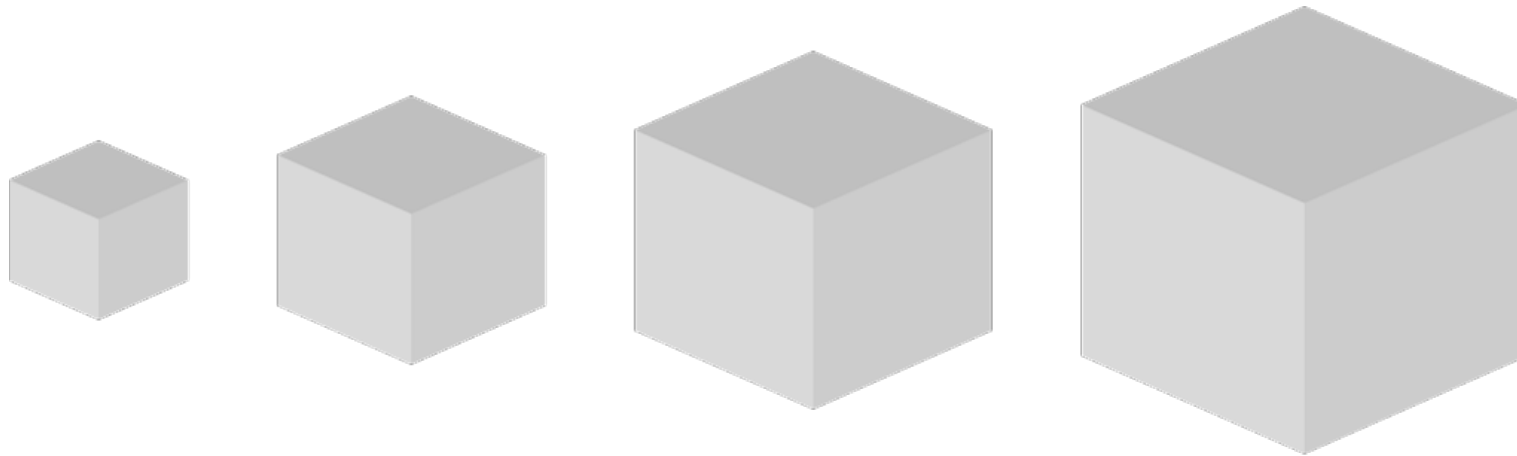
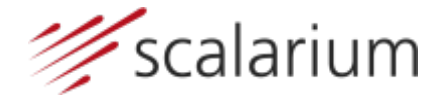
# Single AZ Deployment



# Multi AZ Deployment



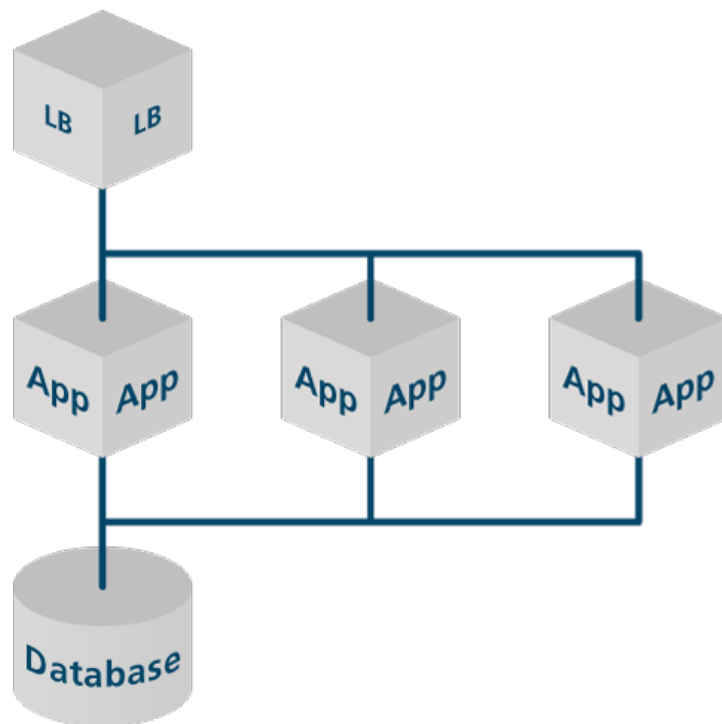
# Amazon EC2 is



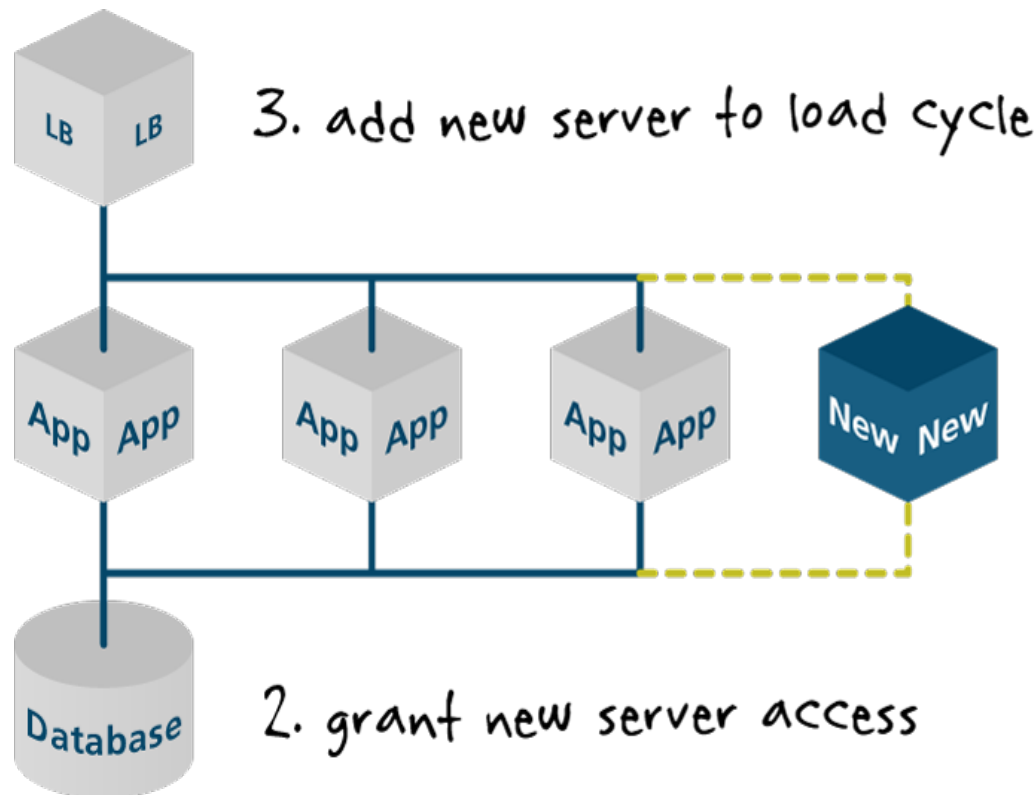
## Infrastructure as a Service



# What you can build fast

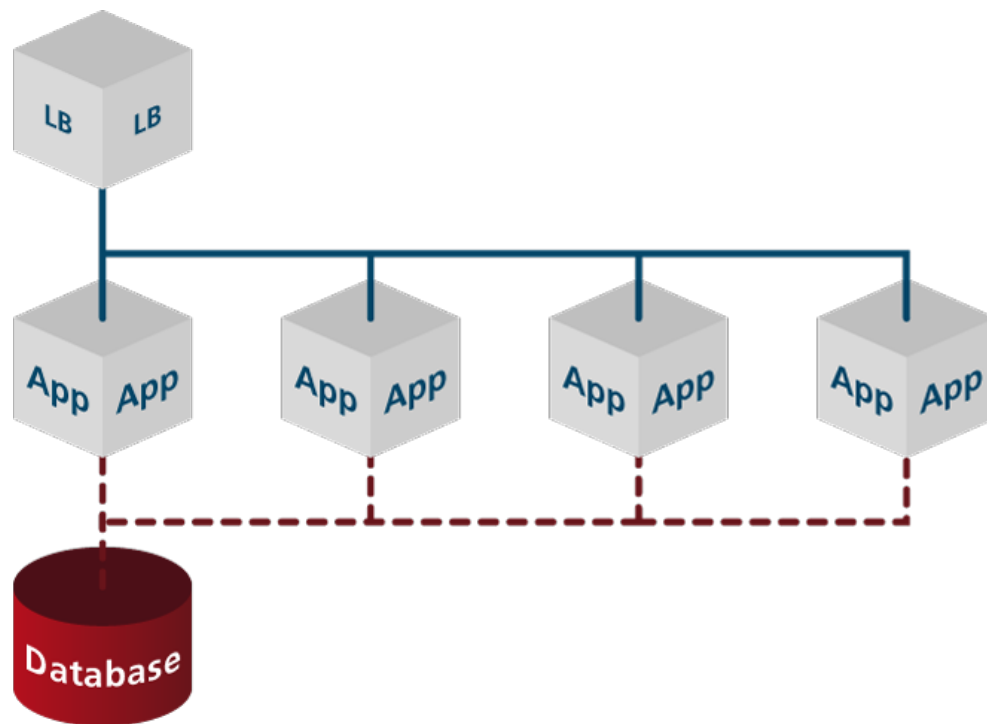


# But what if ...



1. update, setup, and  
configure the new  
server & deploy  
your source code

# Heal and restore



# Scaling up and down



**Manual**



**Load**



**Time**



**API**

Different triggers make it possible to scale any part of the infrastructure or create new clusters

# Deployment



**Application**

**Cluster**

Handle deployments of applications out of source control systems or via http downloads. Allow update code on running servers. User management and GUI.



# Automation is needed

- Configuration
- Healing
- Scaling
- Deployment

[flickr.com/photos/torek/3788181603](https://www.flickr.com/photos/torek/3788181603)

# Let's talk about cute little Monsters



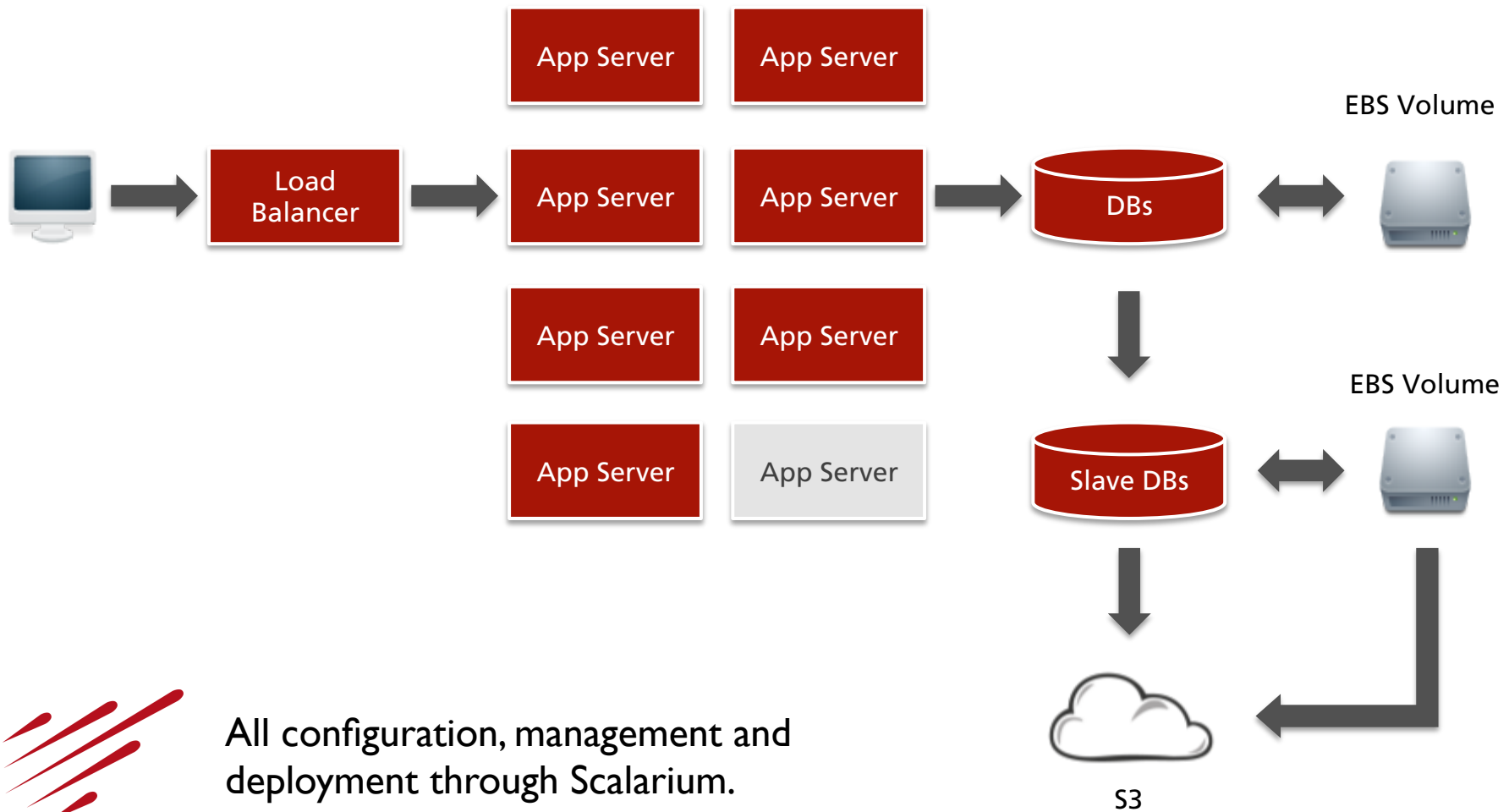
# Monster World



- 1.6 million DAU
- 8.2 million MAU
- Peak 130 servers
- ~ 240.000 requests per minute on average

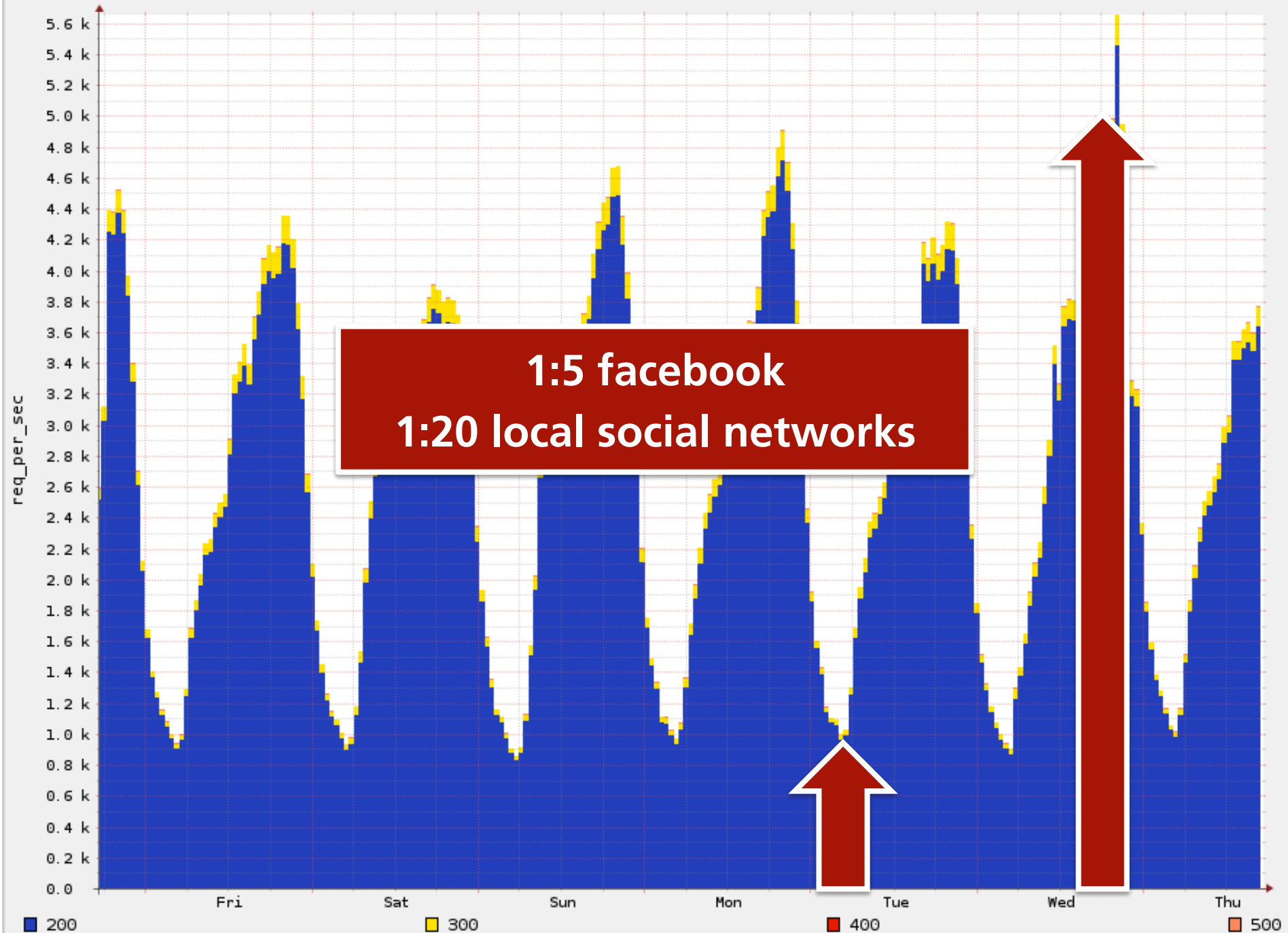


# Basic architecture

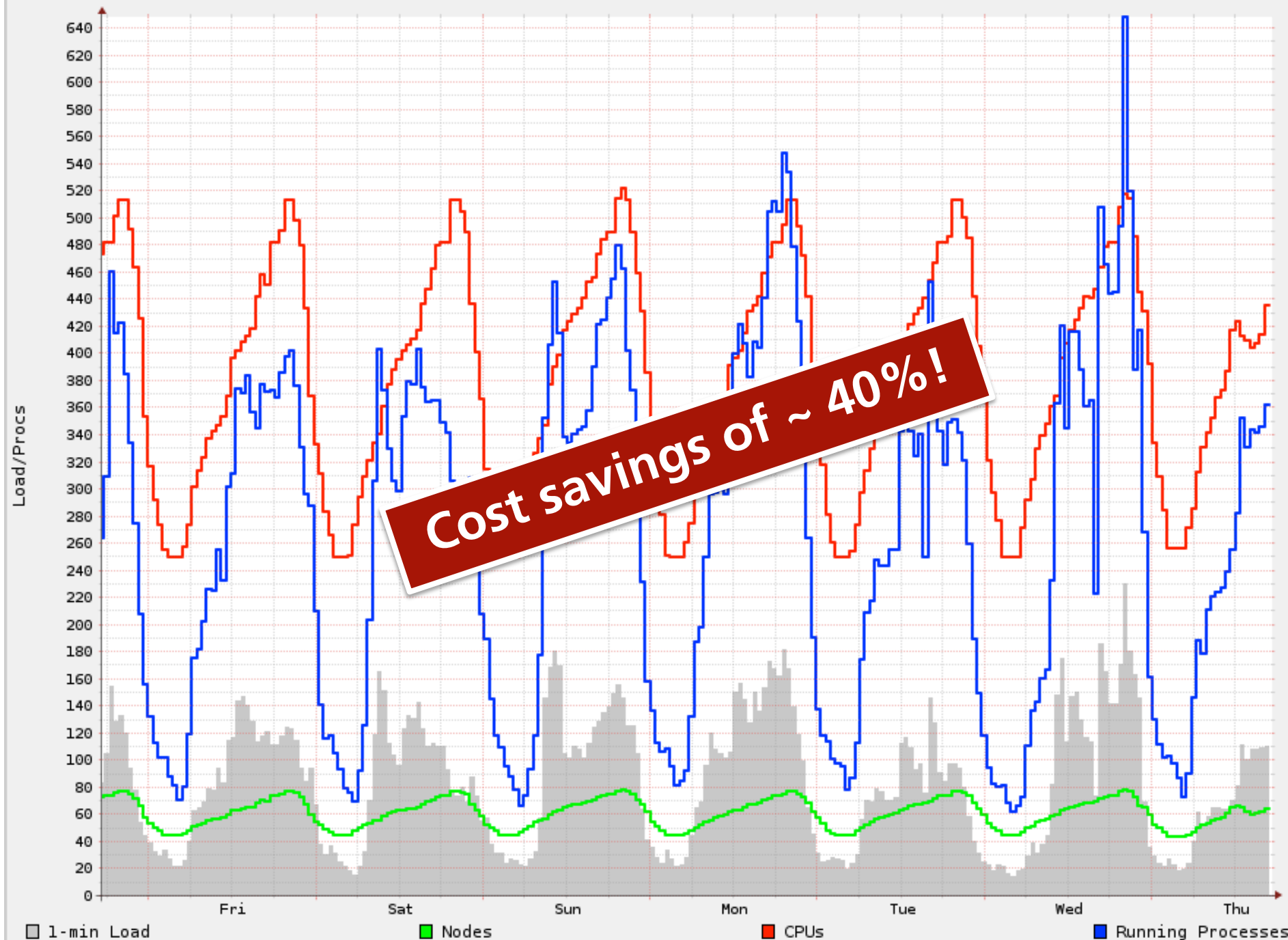


All configuration, management and deployment through Scalarium. No other tools needed.

Cluster Apache Report last week



Cluster Load last week



# DEMO



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