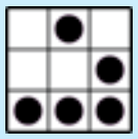
100%
Buzzword
compliant!

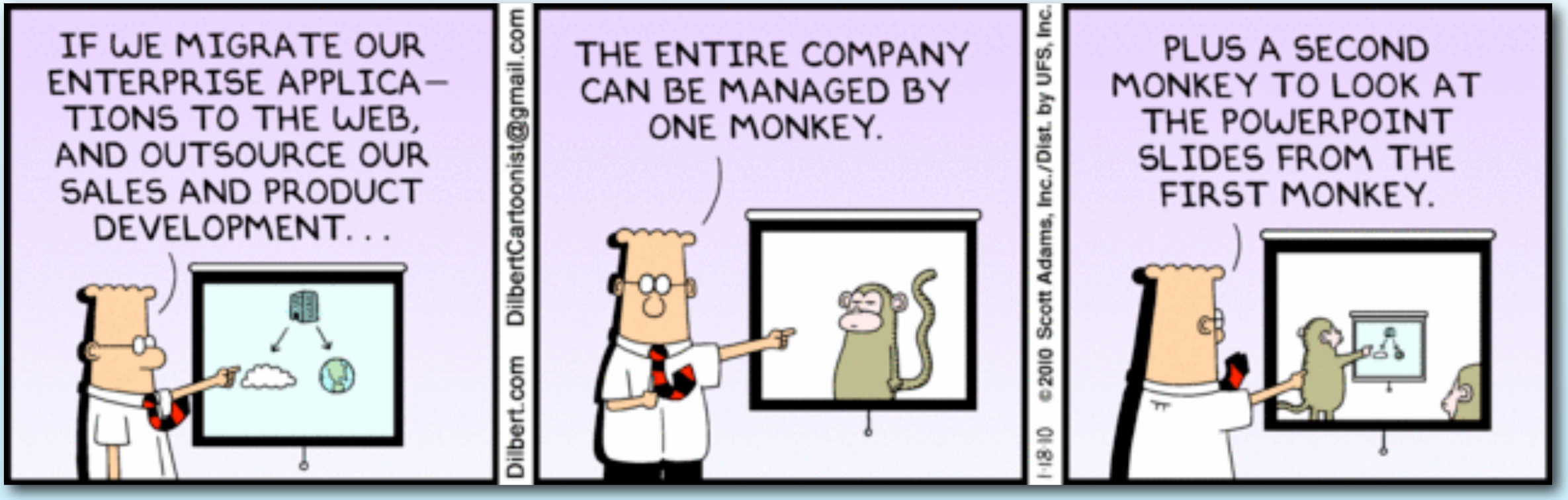
Drupal in the Cloud

High Performance & High Availability



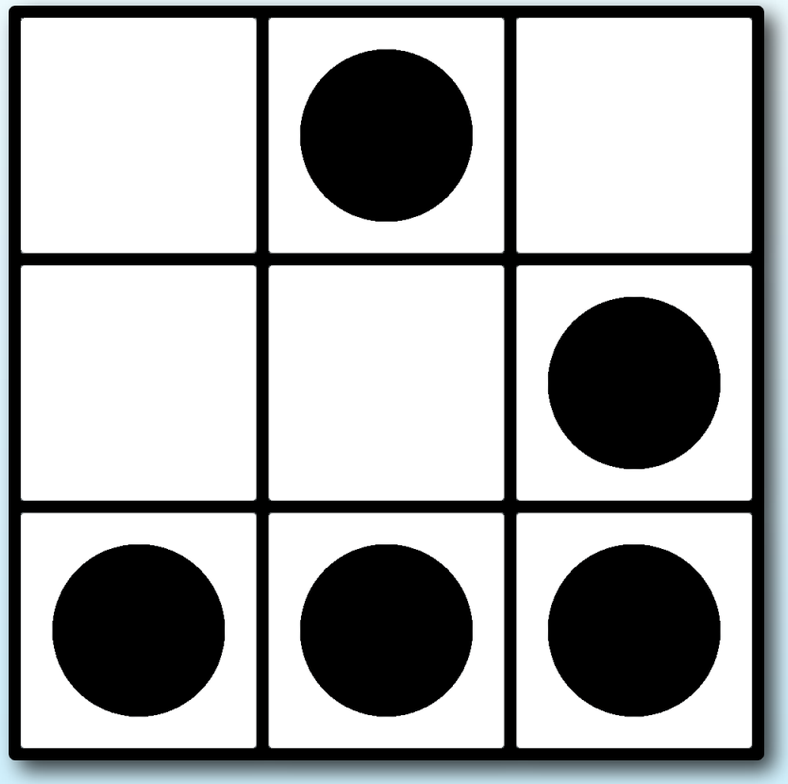
http://www.freistil-consulting.de

Why move to the Cloud?



Jochen Lillich

@geewiz



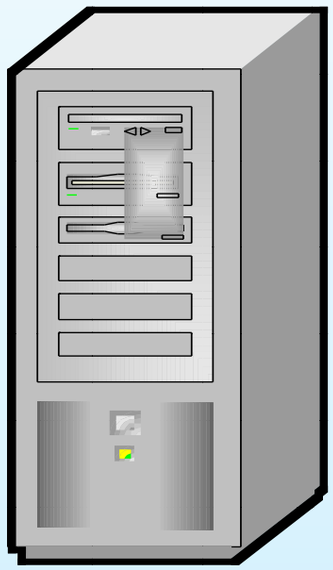
@freistil

Topics of this talk

- High Performance Drupal
- Cloud Computing
- Drupal on Amazon EC2

High Performance Drupal

Standard Installation

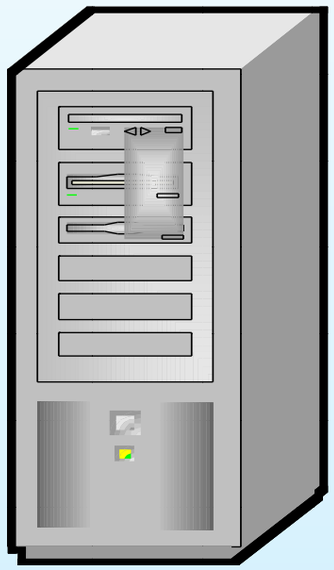


LAMP

Vertical Scaling

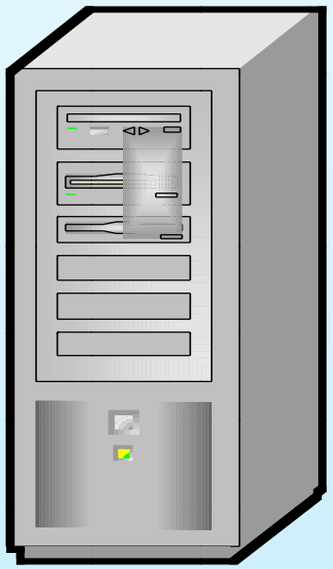
LAMP

Horizontal Scaling

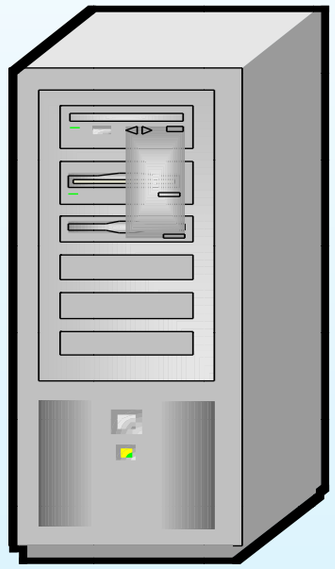


LAMP

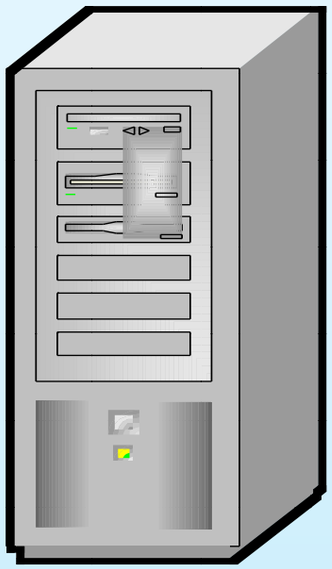
Separation of Concerns



Database

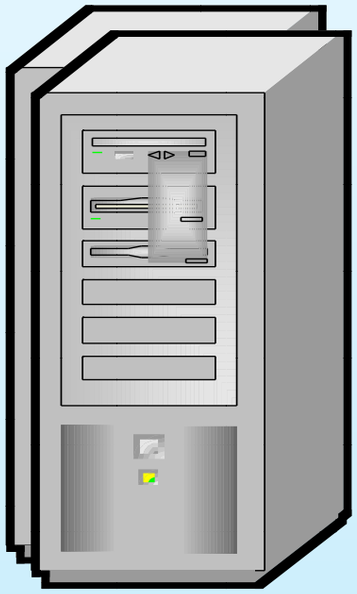


Web Frontend



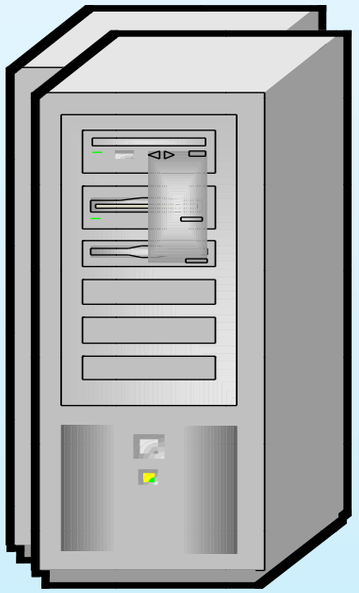
File Storage

Redundancy



Database

Web Frontend



File Storage

Frontend Scaling

- Load Balancing
- Caching
  - Static files
  - Anonymous requests
  - Logged in users
  - PHP code
  - Database requests
- CDN
- Solr Search

Database Scaling

- Replication
- MySQL Proxy
- MySQL Cluster

Storage Scaling

- Proprietary Storage Systems
- Central File Systems
- File System Cloning
  - Tool-based
  - Kernel-based
  - Cluster FS

Summary

- Horizontal Scaling gives you
  - high performance and
  - high availability
- at the cost of
  - more infrastructure

Cloud Computing

Cloud Computing

- Virtual computing resources
  - highly abstracted
  - broadly shared
  - rapidly provisioned

Providers

- Infrastructure Platforms
  - Amazon Web Services
  - Rackspace Cloud
  - GoGrid
- Application Platforms
  - Google App Engine
  - EngineYard

Amazon Web Services

Compute

Amazon Elastic Compute Cloud (EC2)

Amazon Elastic MapReduce

Auto Scaling

Content Delivery

Amazon CloudFront

Database

Amazon SimpleDB

Amazon Relational Database Service (RDS)

E-Commerce

Amazon Fulfillment Web Service (FWS)

Messaging

Amazon Simple Queue Service (SQS)

Monitoring

Amazon CloudWatch

Networking

Amazon Virtual Private Cloud (VPC)

Elastic Load Balancing

Payments & Billing

Amazon Flexible Payments Service (FPS)

Amazon DevPay

Storage

Amazon Simple Storage Service (S3)

Amazon Elastic Block Storage (EBS)

AWS Import/Export

Support

AWS Premium Support

Web Traffic

Alexa Web Information Service

Alexa Top Sites

Workforce

Amazon Mechanical Turk

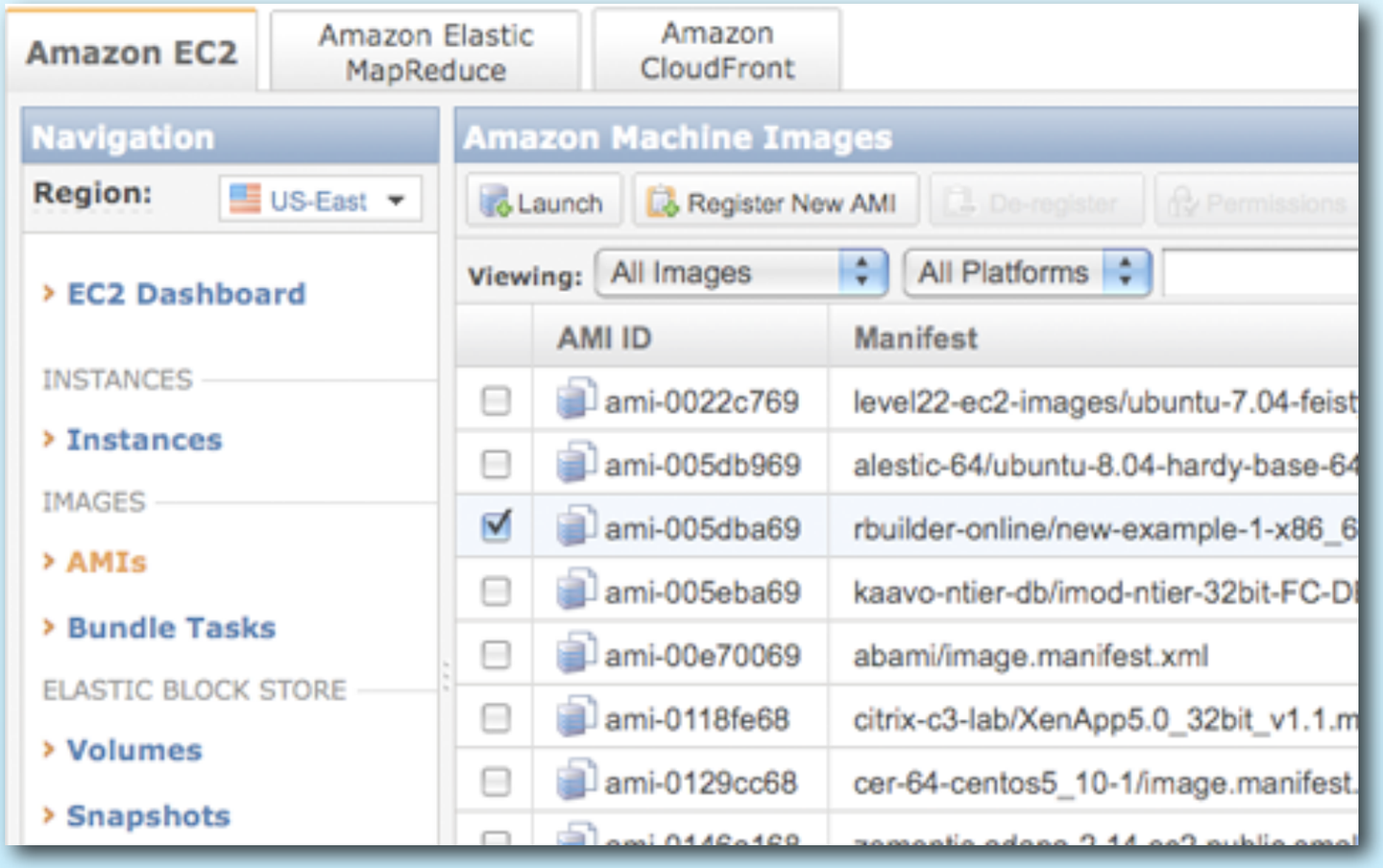
Pros & Cons

- Advantages
  - Minimal CapEx
  - Easy resource management
- Challenges
  - Automation
  - Legal issues

Drupal on EC2

Instance Creation

- User Interface
  - AWS Console
  - EC2 CLI
- AMI
  - Ubuntu
  - Mercury



Deployment

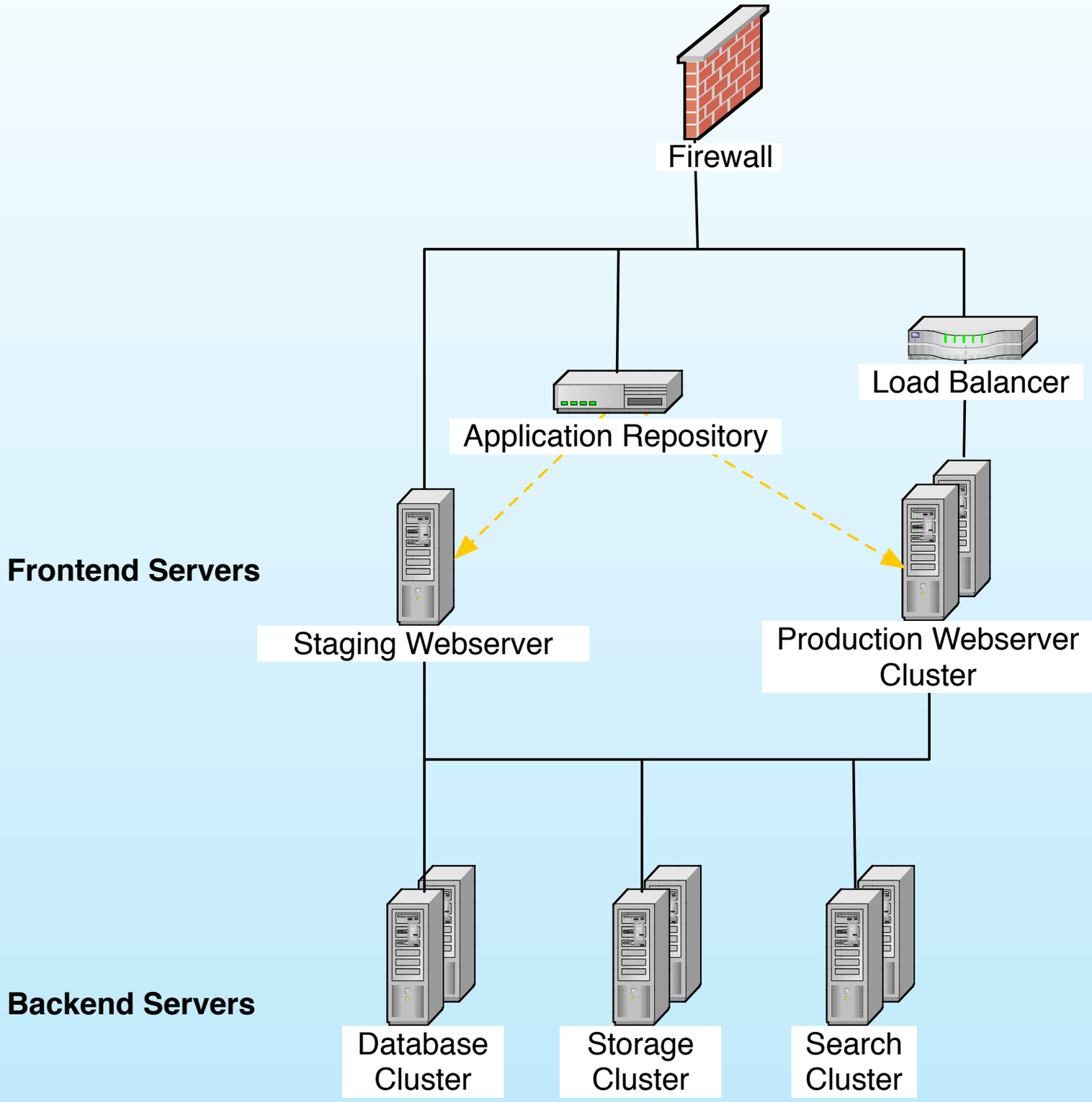
- Manual
  - SFTP
  - SSH + Drush
  - VCS
- Automatic
  - Puppet / Chef / BCFG2

```
class drupal::drush {
  exec { "download-drush":
    cwd => "/root",
    command => "/usr/bin/wget http://ftp.drupal.org/files/proje
    creates => "/root/drush-All-Versions-2.1.tar.gz",
  }

  exec { "install-drush":
    cwd => "/var/www/drupal/sites/all/modules",
    command => "/bin/tar xvzf /root/drush-All-Versions-2.1.tar.
    creates => "/var/www/drupal/sites/all/modules/drush",
    require => [ Exec["download-drush"], File["/var/www/drupal/
  }

  exec { "symlink-drush":
    command => "/bin/ln -s /var/www/drupal/sites/all/modules/dr
    creates => "/usr/local/bin/drush",
  }
}
```

System Management

- Monitoring
  - Nagios / ICINGA
  - Amazon CloudWatch
- Failover / Scaling
  - DIY
  - Clustering software
  - Amazon Auto Scaling

Example infrastructure



Conclusion

Summary

- Flexible resource handling
- Minimal capital expenses
- Efficiency needs automation
- Effectiveness needs experience

Get the book!

What‘s the name of the Amazon Machine Image that provides you with a complete Drupal installation including APC, Varnish and Solr Search?

Your questions?

jochen@freistil-consulting.de

http://www.freistil-consulting.de

Thank you.