



# AUTO SCALING DRUPAL

By Prajwala from **Azri Solutions**

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## ABOUT ME

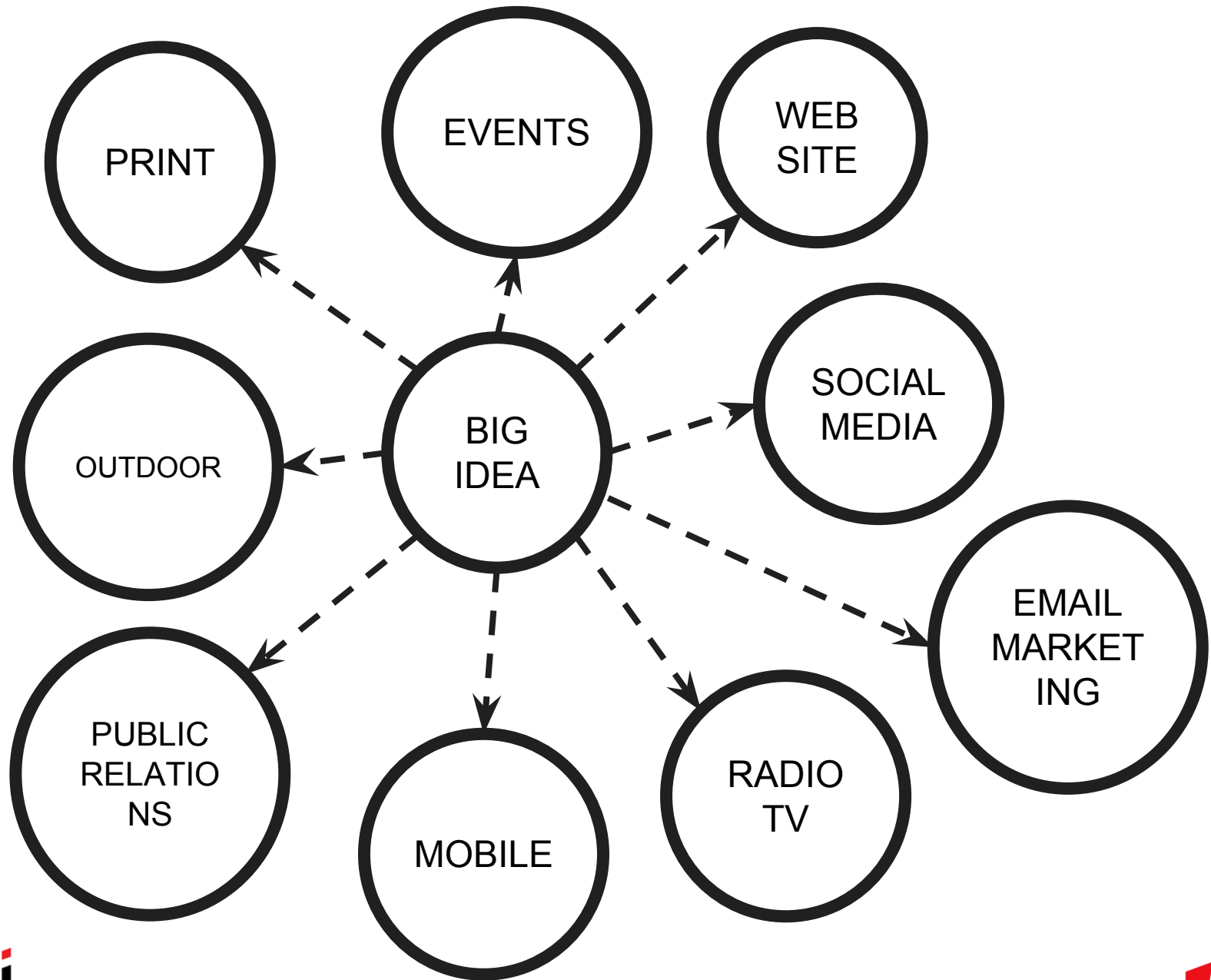
- Tech Lead @ Azri solutions
- Drupal since 2008
- Hands on with PHP, Python, Javascript, Nodejs
- Hands on with Object Oriented Javascript since 2007

# AGENDA

- Use Case
- Understand Auto Scaling
- Auto Scaling Terminology
- System Architecture
- How to make Drupal ready for Auto Scaling Environment



## **USE CASE – A CAMPAIGN**



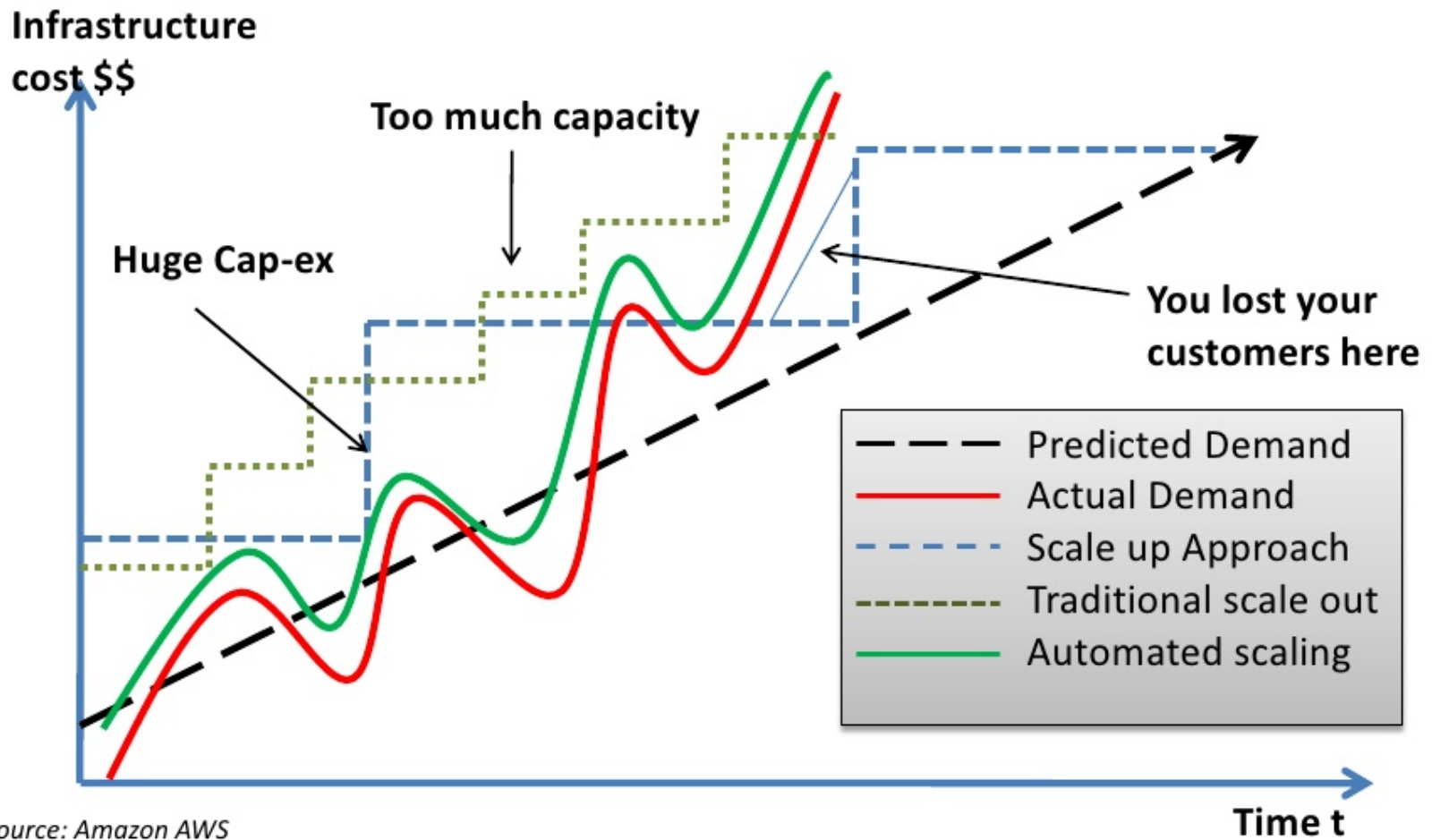
# CHALLENGES

- Fast Page Load Time
- Accessible across all Devices
- Available all the time
- Sustain high traffic Spikes
- Minimum Operations Cost
- Very short timelines

# AUTO SCALING – by need



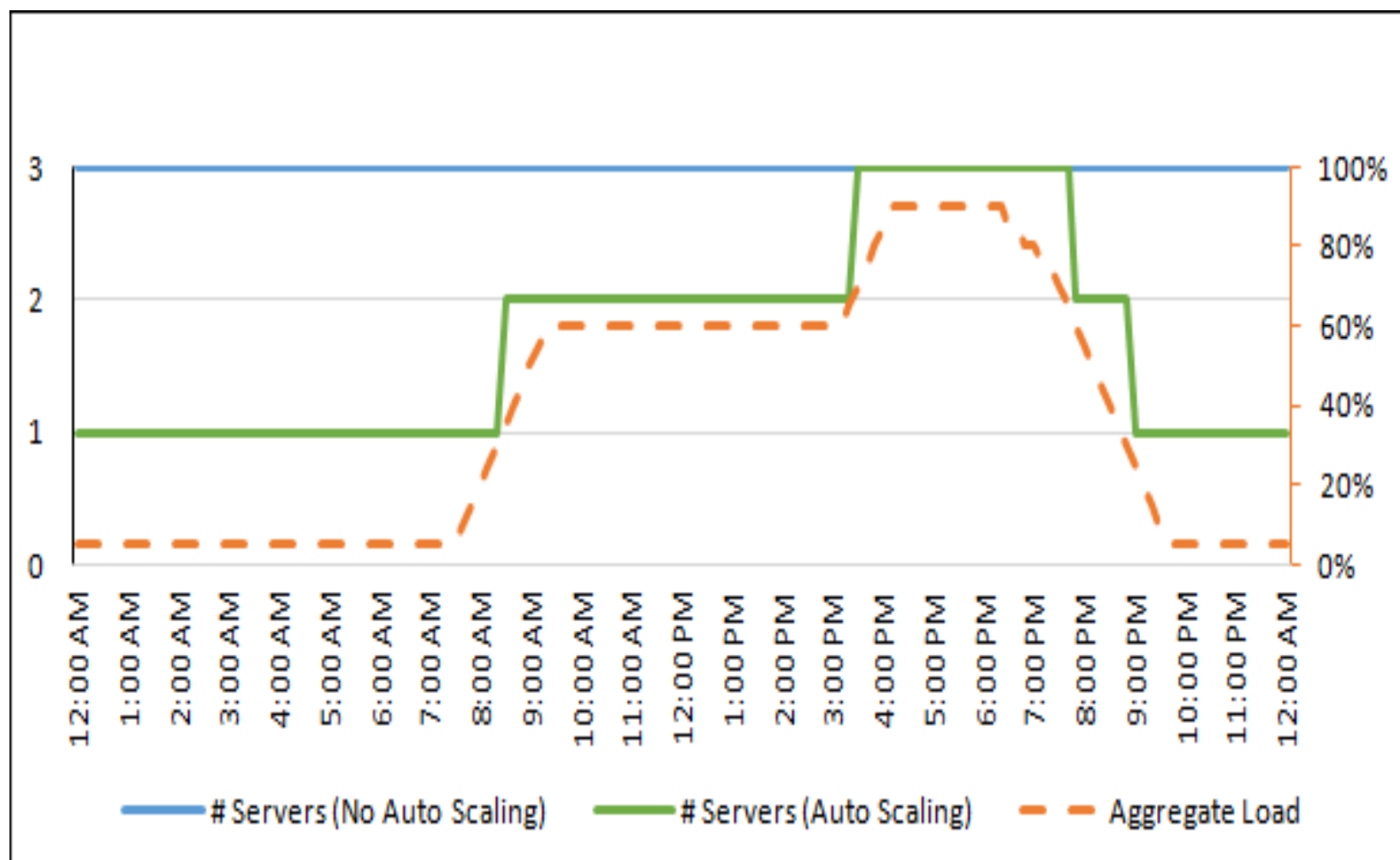
# UNDERSTANDING AUTO SCALE





# GOALS

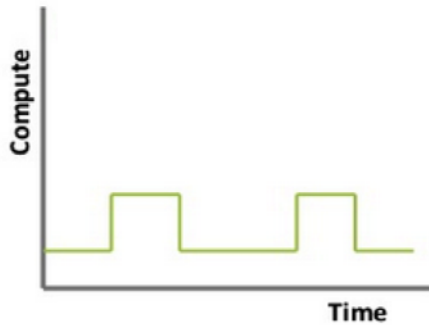
- Meet demand
- Control costs
- Maintain Capacity



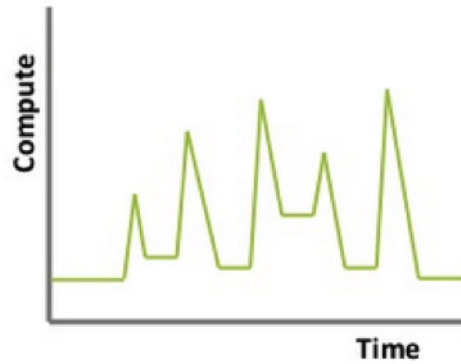
# TERMINOLOGY

- **Scale out:** Achieving Scalability by increasing number of EC2 instances
- **Scale up:** Achieving Scalability by resizing the capacity (like computing, memory) of existing instances
- **Scale down:** Decreasing the number of EC2 instances or capacity

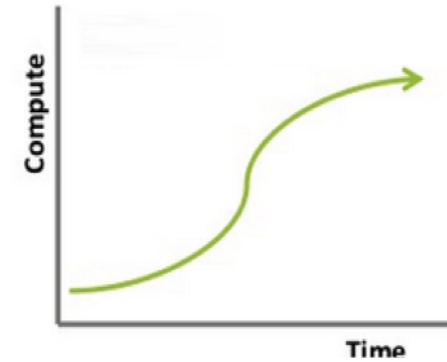
# LOAD VELOCITY SCENARIOS



Predictable

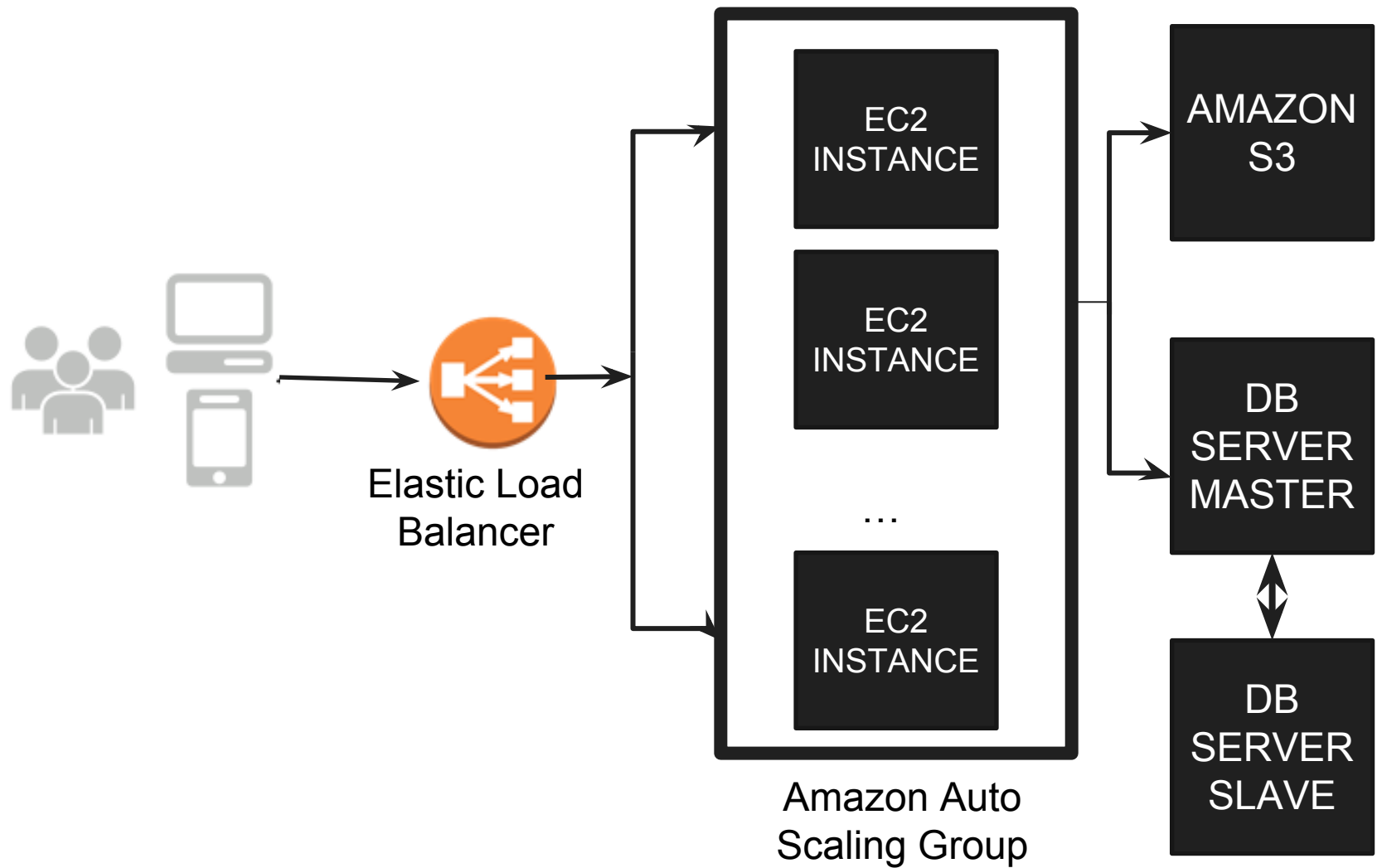


Unpredictable

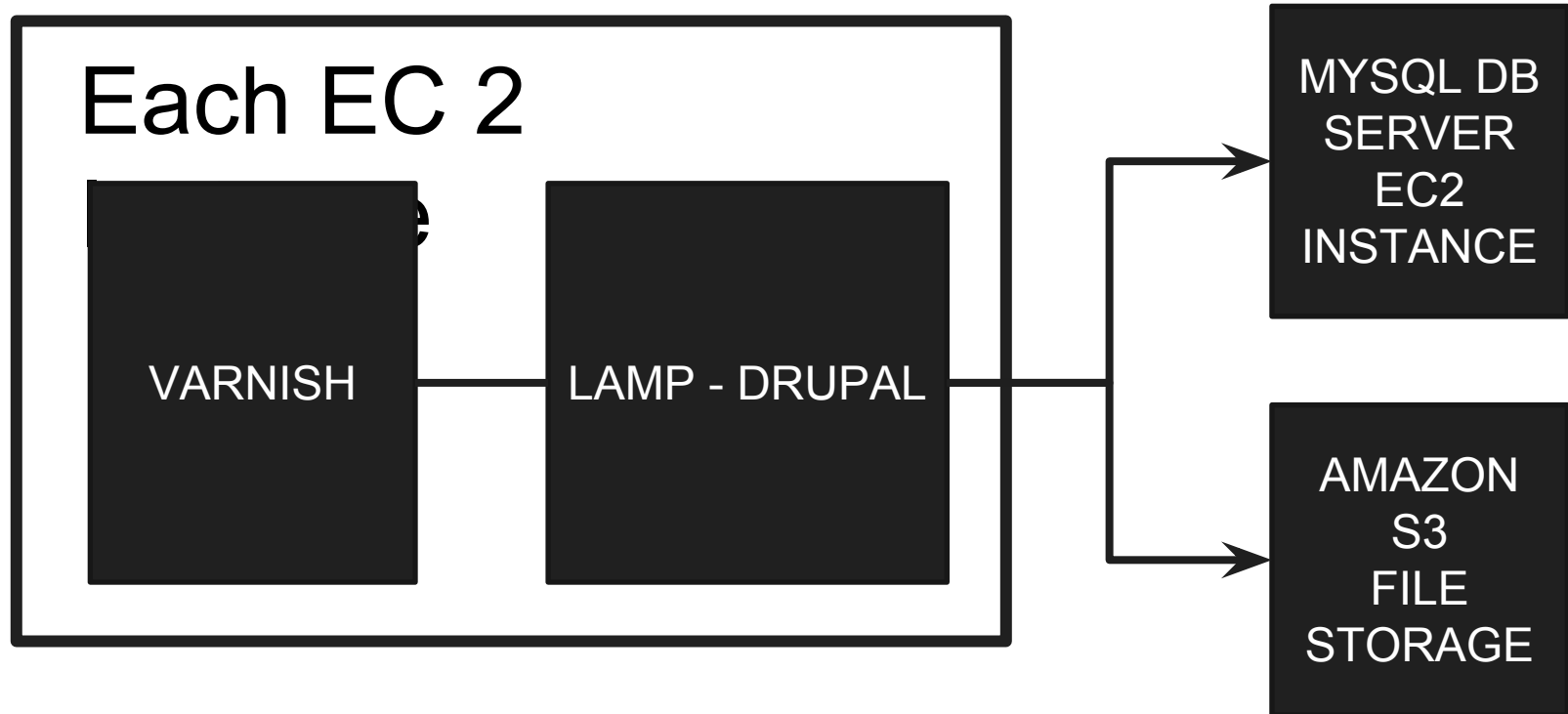


Constantly  
Growing

# ARCHITECTURE



## ARCHITECTURE CONT..



# AUTO SCALING IN AMAZON

- **Auto Scaling Group:** is a collection of EC2 instances for easy scaling and management
- **Cloud Watch Alarms:** is an object monitors a single metric over a specific period. The metric can be average CPU usage, incoming network traffic etc..
- **Triggers & Policy:** When alarm threshold is crossed, auto scaling will trigger scale out or scale down

# CHALLENGES AT DRUPAL

## Data synchronization :

- Used external DB server so that all Drupal applications have the same data.
- Used MySQL Master, Slave configuration so that, database will be available all the time



# CHALLENGES AT DRUPAL

## Files Synchronization

- The files need to be shared across multiple web servers
- Solution 1: Network Attached Storage System (NAS) and creating NFS mounts on each server. This is complicated in cloud.
- Solution2: External storage with S3. We used s2fs drupal module.

## Files Synchronization Cont...

- Dynamic css, js aggregated files. Drupal 7 dynamically require css/js for page and creates several aggregated files. Which will store in file system. All web servers need to have access to same files.
- We used Grunt and created custom minified css, js files.

# CHALLENGES AT DRUPAL

## Simple Survey form on Homepage

- Forms will not allow Varnish cache.
- So we loaded this form using ajax to support Varnish cache.

## DEPLOYING CODE

- Need to handle deployments for 2 scenarios, new VMs coming online and existing VMs already running
- Used Elastic Beanstalk
- Beanstalk “bake” the code and create a new image with updated code. It will be stored in a storage system like S3. This way newly created VMs use latest Image. When new code is deployed, all VMs running previous build will be terminated and AutoScaling is used to create new VMs.

## NOT DONE YET..

- Monitor Auto Scaling Instances with Health Checks
- Adjust the cloud watch alarms such that it maximizes the usage of capacity and minimizes costs

## OTHER CLOUD SERVICES

- Google AutoScale – Still in Beta
- Rackspace



**Questions?**



# THANK YOU!

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