



SCALING THE GRAMMYS[®] WITH DRUPAL



- Nathan Haug
- "quicksketch" on d.o



- Nathan Haug
- "quicksketch" on d.o

original (view actual size)



600px

800px

thumbnail (view actual size)



75px

100px



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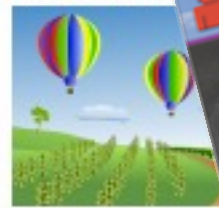
original (view actual size)



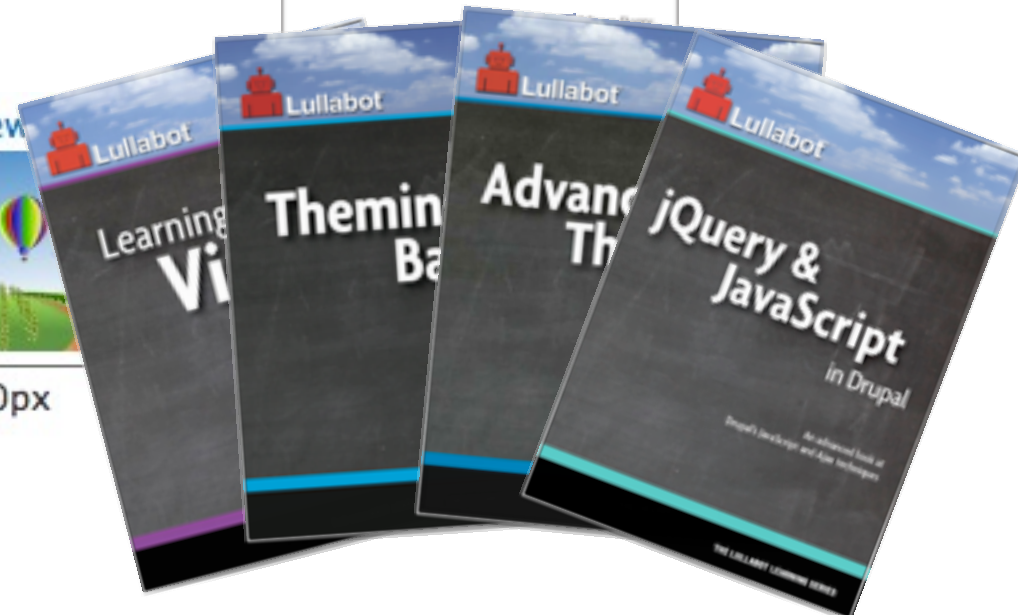
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- Easier maintenance of site and functionality.



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- Easier maintenance of site and functionality.
- Single place for Nominee and Winner history.



Some Numbers

The background of the slide is a dense, blue-tinted collage of numerous small, overlapping historical photographs. These images depict various scenes, including groups of people, individuals in period clothing, and possibly military or official gatherings. The collage is layered, with some images appearing more prominent than others, creating a textured, historical feel.

Accurate Some Numbers

The background of the slide is a dense, blue-tinted collage of numerous small, overlapping photographs from the Grammy Award show. These photos depict various scenes, including performers on stage, hosts, and audience members.

Accurate Some Numbers

- **214 million** page views on Grammy Award Show day, most over the 6 hour window of the broadcast.

The background of the slide is a dense, blue-tinted collage of numerous small, overlapping photographs from the Grammy Award show. These photos depict various scenes: performers on stage, hosts, audience members, and award presentations. The collage is layered, with some images appearing more prominent than others, creating a textured, mosaic-like effect.

Accurate Some Numbers

- **214 million** page views on Grammy Award Show day, most over the 6 hour window of the broadcast.
- **50,000** new registered users over the same period.

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- **50,000** new registered users over the same period.
- **5%** Database load during show.

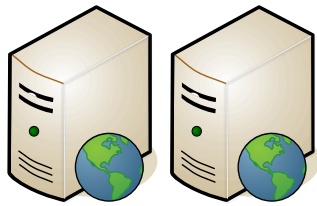
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- **214 million** page views on Grammy Award Show day, most over the 6 hour window of the broadcast.
- **50,000** new registered users over the same period.
- **5%** Database load during show.
- **1%** Web server load during show.

Hardware

Hardware

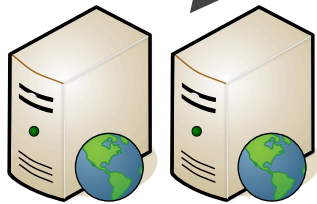
Web Servers



Hardware



Load Balancer

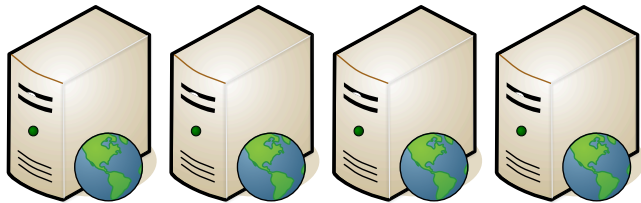
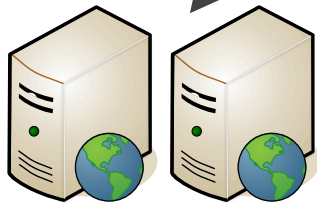


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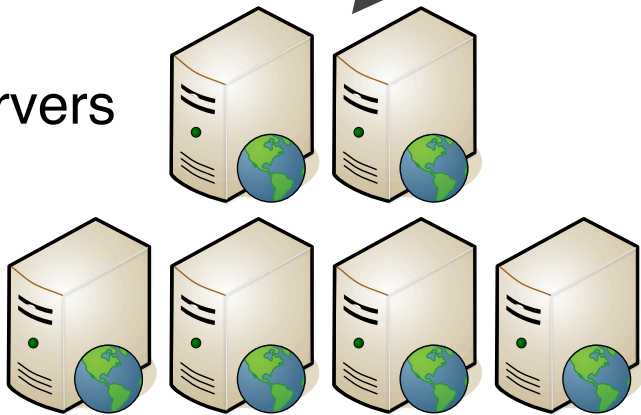
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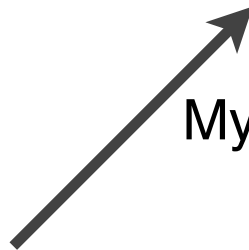
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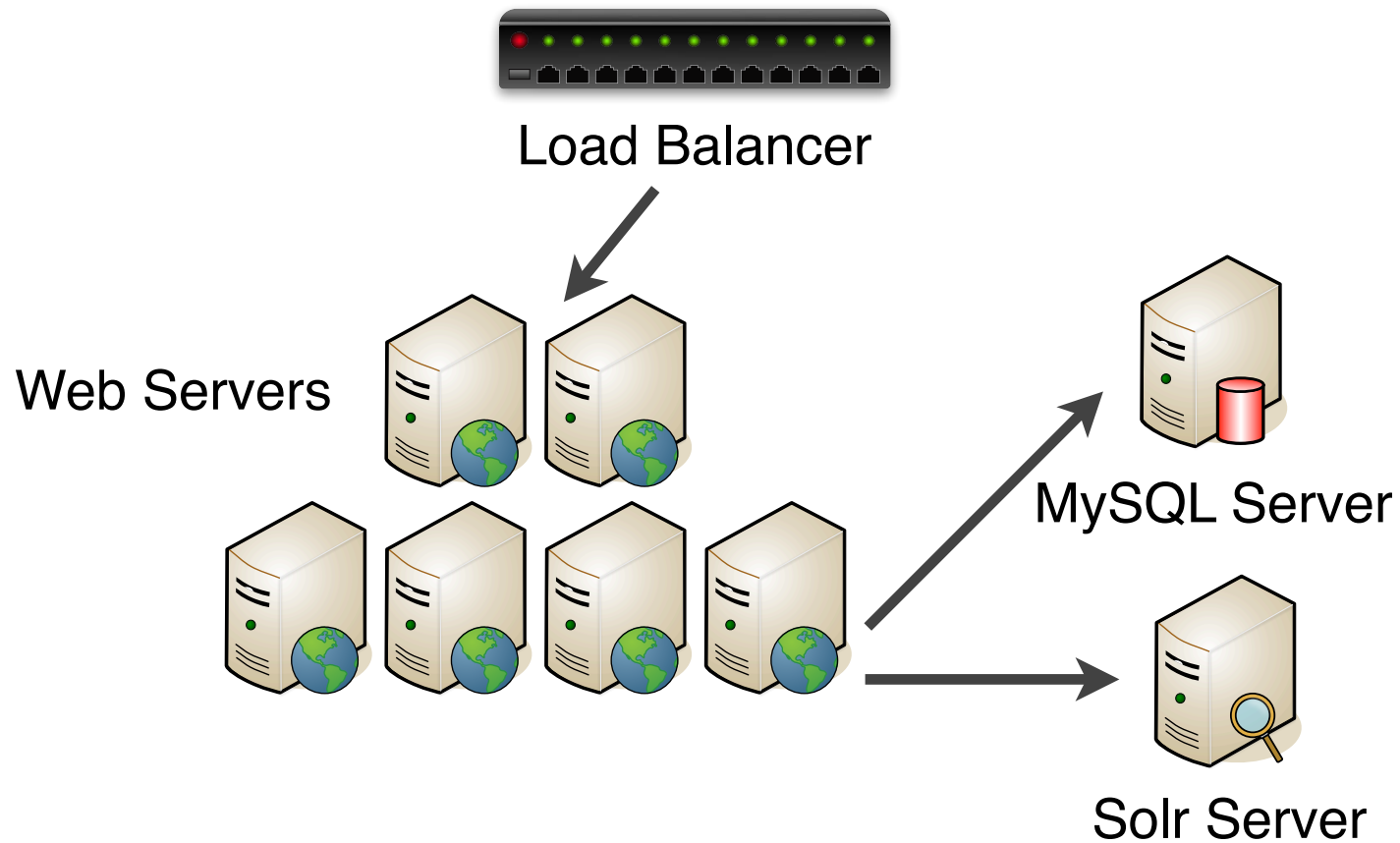
Web Servers



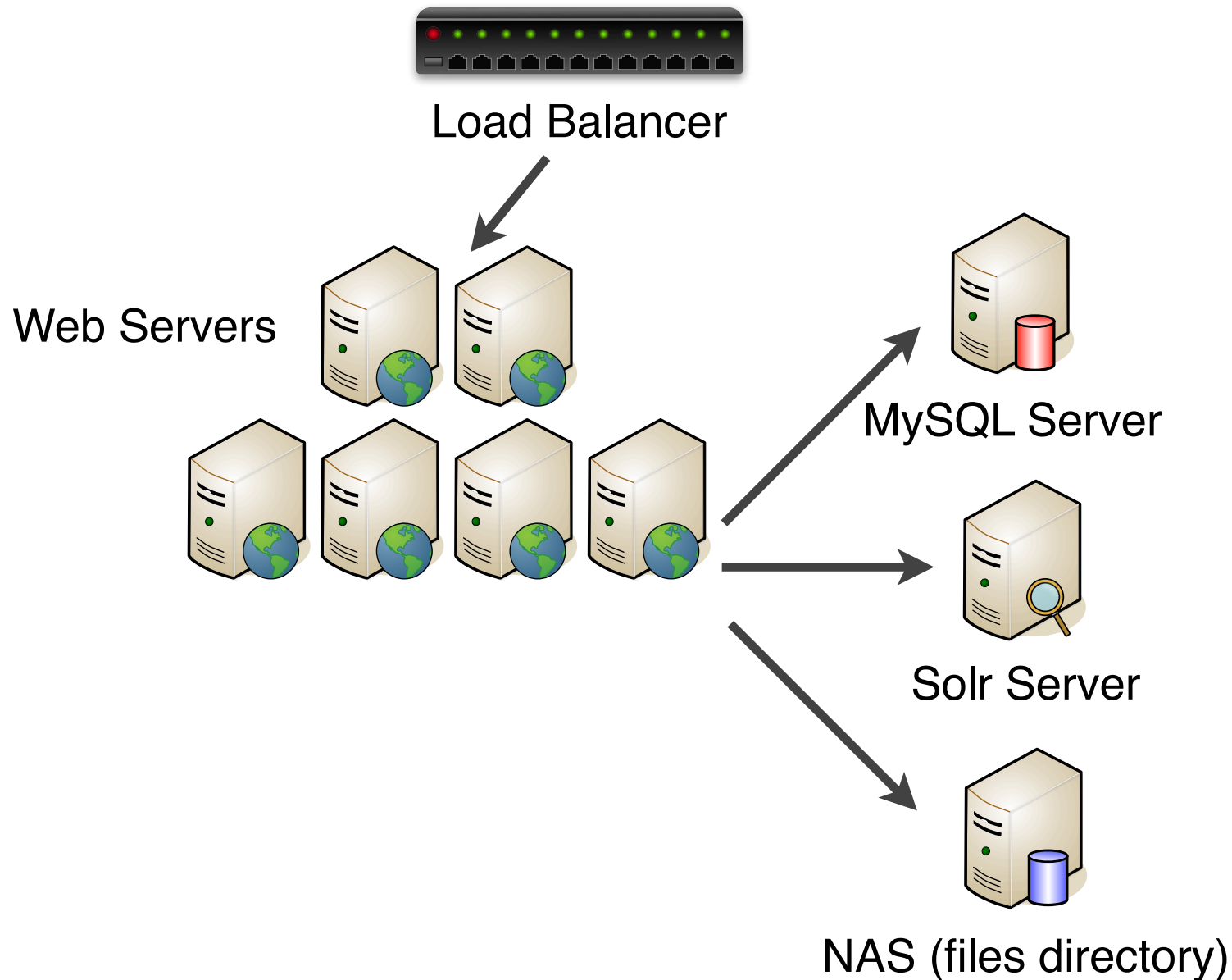
MySQL Server



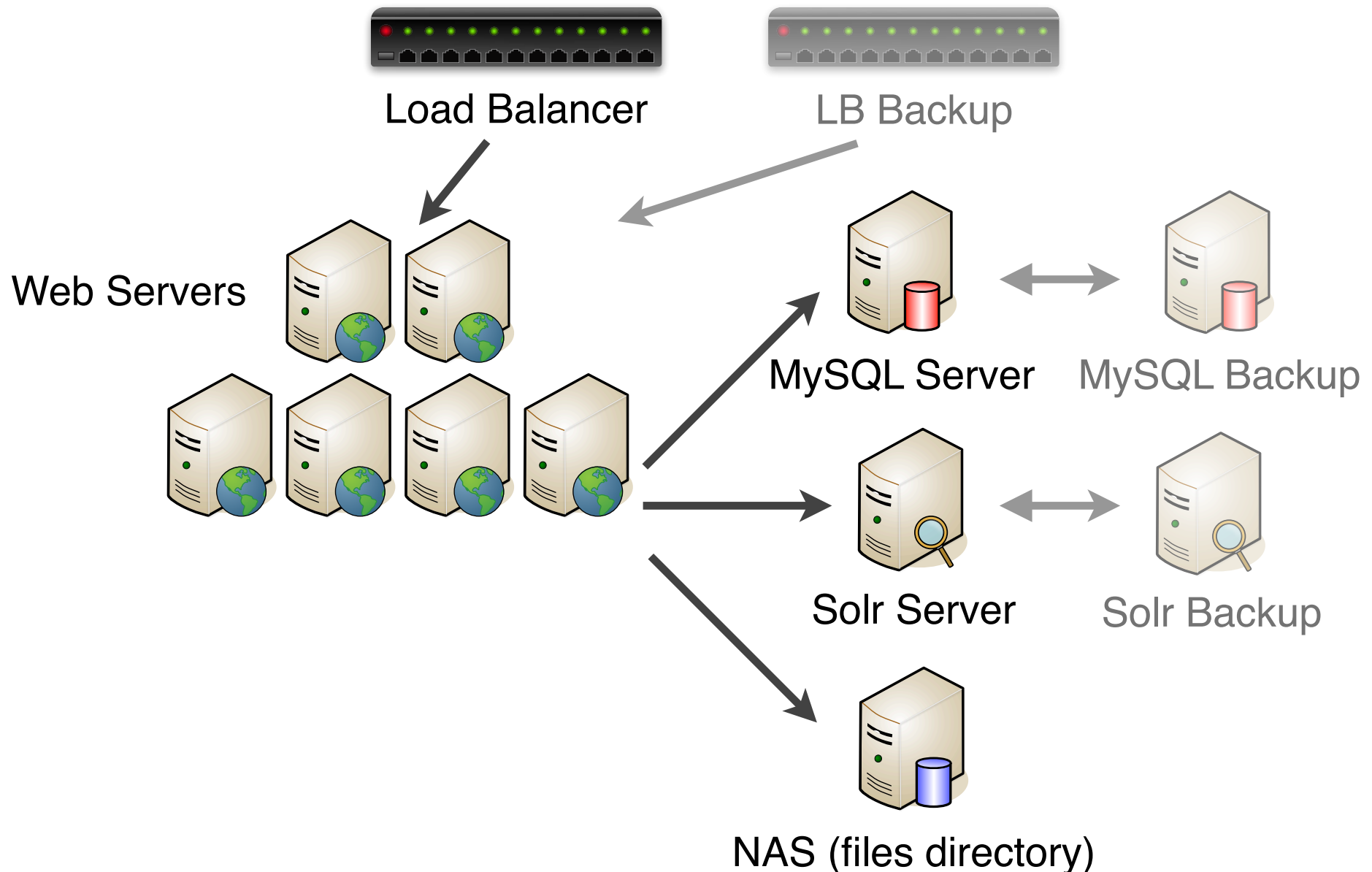
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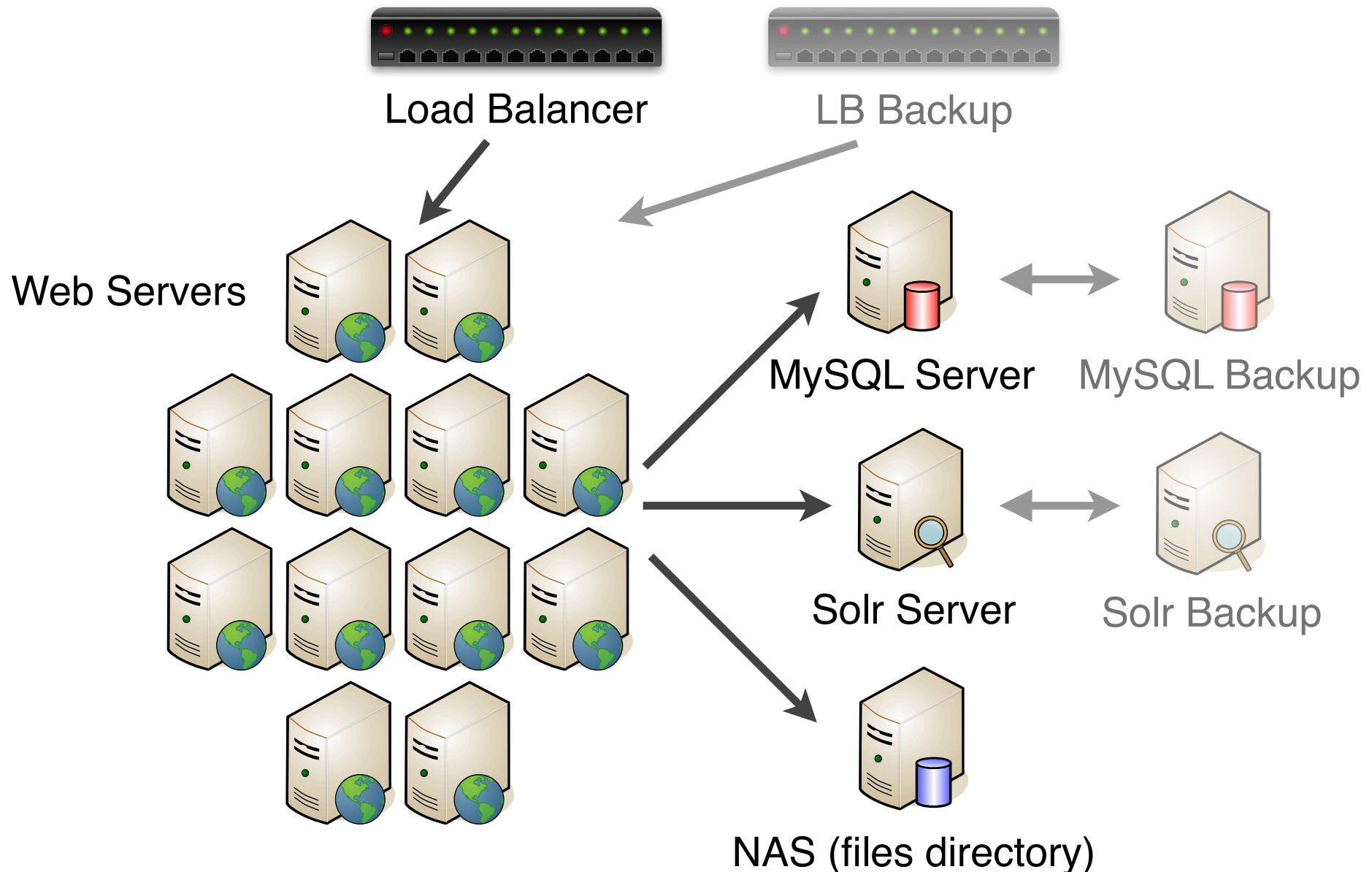
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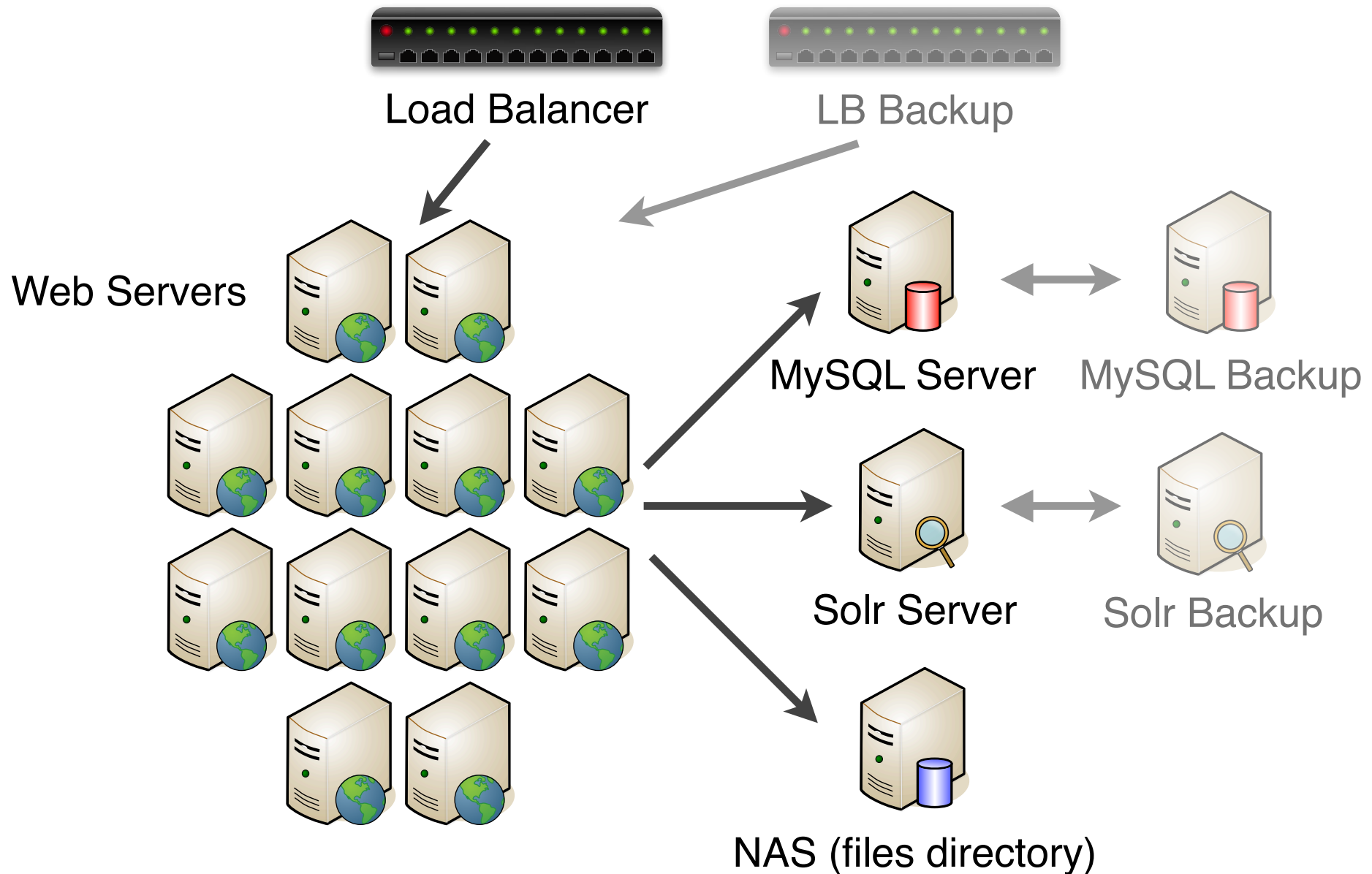
Hardware



Hardware



~~Hardware~~



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Software

Software

Software

- Use caching mechanisms and software

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- Configure Drupal to utilize this caching

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- Give servers multiple roles

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- Configure Drupal to utilize this caching
- Give servers multiple roles
- Dedicate servers for "expensive" operations (i.e. Search)



Web Server





Web Server

- PressFlow



Web Server

- PressFlow
- APC Op-Code Cache for PHP



Web Server

- PressFlow
- APC Op-Code Cache for PHP
- Database Slave



Web Server

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- Database Slave
- Varnish in front of Apache



Web Server





Web Server



- Distribution of Drupal (100% API Compatible with existing modules)



Web Server



- Distribution of Drupal (100% API Compatible with existing modules)
- Enables use of CDNs, Reverse Proxies, and Slave database servers



Web Server



- Distribution of Drupal (100% API Compatible with existing modules)
- Enables use of CDNs, Reverse Proxies, and Slave database servers
- Does not create sessions for Anonymous users



Web Server





Web Server



- APC (Another PHP Cache) reduces disk access when parsing PHP files.



Web Server



- APC (Another PHP Cache) reduces disk access when parsing PHP files.
- Keeps fully parsed PHP files in memory.



Web Server





Web Server



- SQL Slave



Web Server



- SQL Slave
- All "Paged" and Limit queries hit the slave server.



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GRAMMY LIVE

RADIO

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HISMuseum

MJ fans find a refuge in the GRAMMY Museum



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Blogs



Jackson Sales Soar In The UK

NewsWatch

Michael Jackson has sold more albums than any other act in the UK since his death on June 25, 2009, with a combined total of 4.31 million album and track sales, according to the Official Charts Company.

Photos

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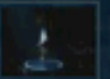
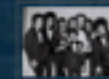


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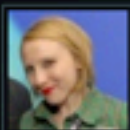
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Jun 25 2010 - 10:55am

★★★★★
0 Comments



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Katie Dunham

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Jun 24 2010 - 5:08pm

★★★★★
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Michael Jackson: A Record Setter

Paul Grein

Over the course of a four-decade career, Michael Jackson set a lot of records. In 1984 his landmark album *Thriller* became the first album to generate seven Top 10 hits on the Billboard Hot 100. In 1988 his follow-up *Bad* became the first album to yield five No. 1 hits. In 1995 "You Are Not Alone" became the first single to enter the chart at No. 1.

Jun 24 2010 - 3:00pm

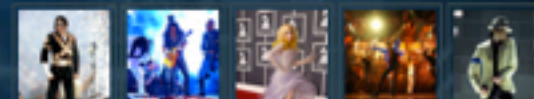
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Moore Named New IFPI CEO

NewsWatch

IFPI announced John Kennedy will resign his duties as chairman and CEO after a tenure of more than five years and that Frances Moore, currently IFPI's executive vice president and regional director, Europe, will succeed Kennedy as CEO.



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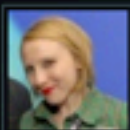
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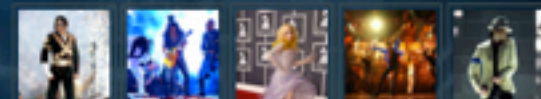
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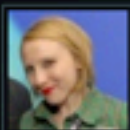
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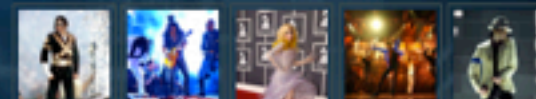
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A Piece Of Her Heart

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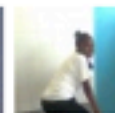
The GRAMMYs has 137,952 fans



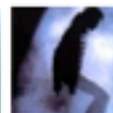
Monique



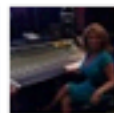
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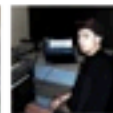
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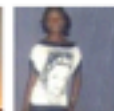
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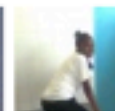
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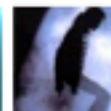
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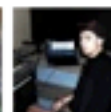
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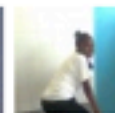
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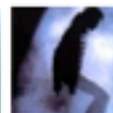
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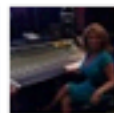
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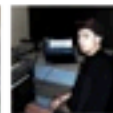
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- ☐ Purchase Jackson music
- ☐ See This Is It
- ☐ Purchase music + see This Is It
- ☐ Avoid Jackson media

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- Serves up images, static files, and anonymous pages from memory.



Web Server

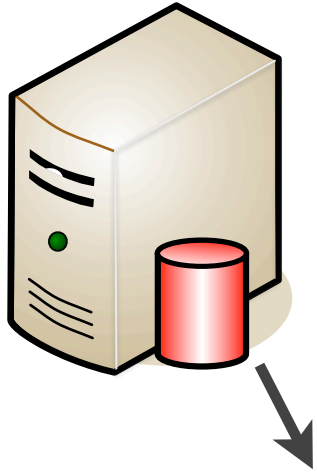


- The MOST important cache on our infrastructure.
- Serves up images, static files, and anonymous pages from memory.
- Cookie-based skipping of Varnish lets users fall through to Apache.



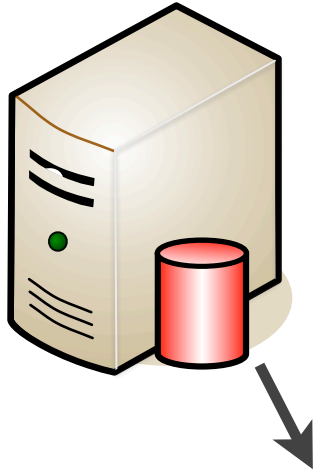
Master Database





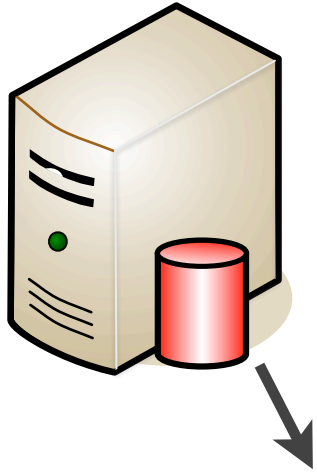
Master Database

- MySQL



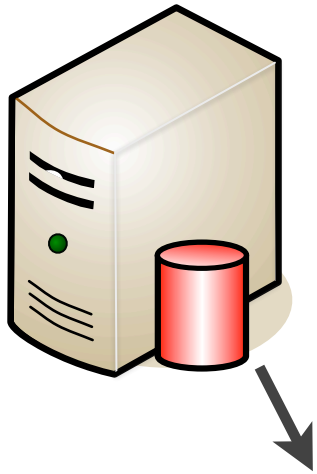
Master Database

- MySQL
- Doubles as Memcache server



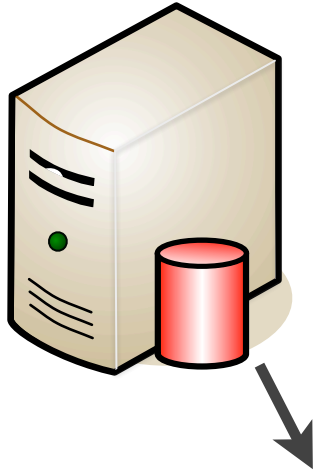
Master Database

- MySQL
- Doubles as Memcache server
- Mirrored as a backup, NOT a Master-Master configuration.



Master Database

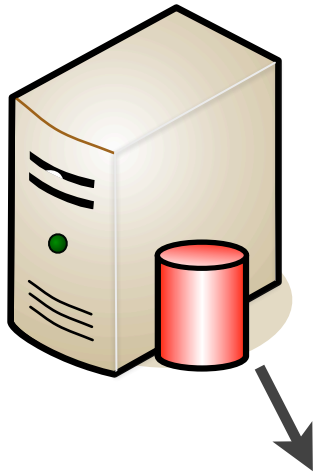




Master Database



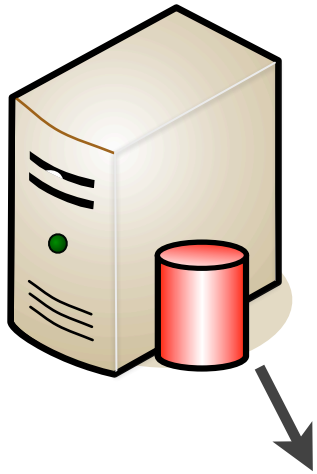
- MySQL 5.2



Master Database



- MySQL 5.2
- Turn on query caching in my.cnf:

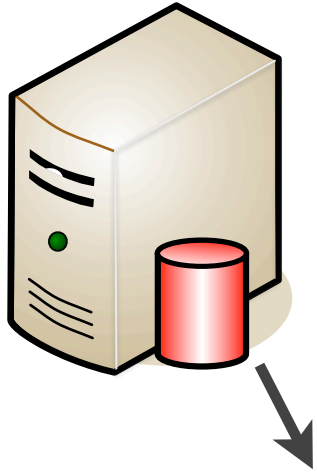


Master Database



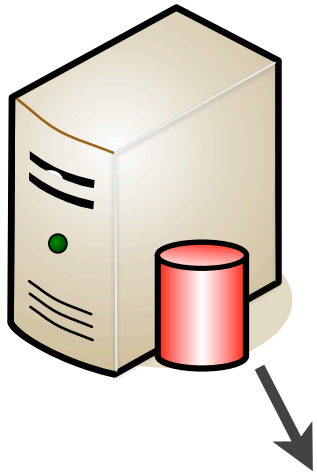
- MySQL 5.2
- Turn on query caching in my.cnf:

```
query_cache_limit = 1M  
query_cache_size = 16M
```



Master Database

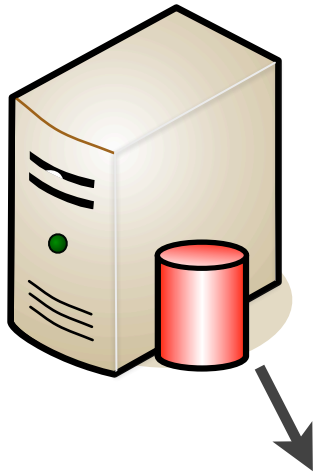
MEMCACHED



Master Database

MEMCACHED

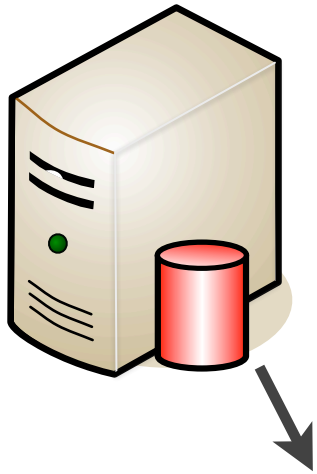
- All Cache tables and Sessions stored in memory.



Master Database

MEMCACHED

- All Cache tables and Sessions stored in memory.
- 16 Cache tables on Grammy.com



Master Database

MEMCACHED

- All Cache tables and Sessions stored in memory.
- 16 Cache tables on Grammy.com
- Anonymous pages served entirely from memory with page cache enabled.



Solr Server





Solr Server



- Outsources search to dedicated box.



Solr Server



- Outsources search to dedicated box.
- Java server. Not a PHP technology.



Solr Server



- Outsources search to dedicated box.
- Java server. Not a PHP technology.
- TomCat as host.

All Together Now

Pure
Anonymous

Anonymous
w/ NO_CACHE Authenticated



MEMCACHED



Slave



Master

All Together Now

Pure
Anonymous

Anonymous
w/ NO_CACHE Authenticated

Peak Traffic Times



MEMCACHED



Slave



Master

All Together Now

Pure
Anonymous

Anonymous
w/ NO_CACHE Authenticated

Peak Traffic Times

Off-Peak



MEMCACHED



Slave

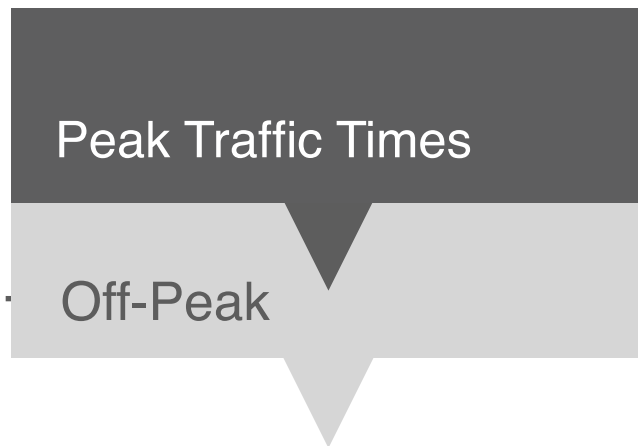


Master

All Together Now

Pure
Anonymous

Anonymous
w/ NO_CACHE Authenticated



MEMCACHED



Slave

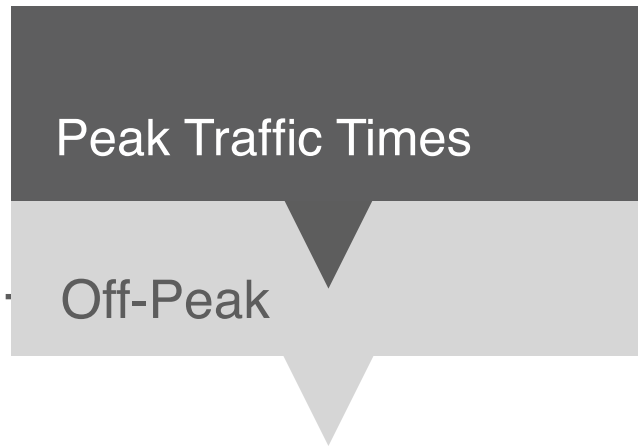


Master

All Together Now

Pure
Anonymous

Anonymous
w/ NO_CACHE Authenticated



MEMCACHED



Slave

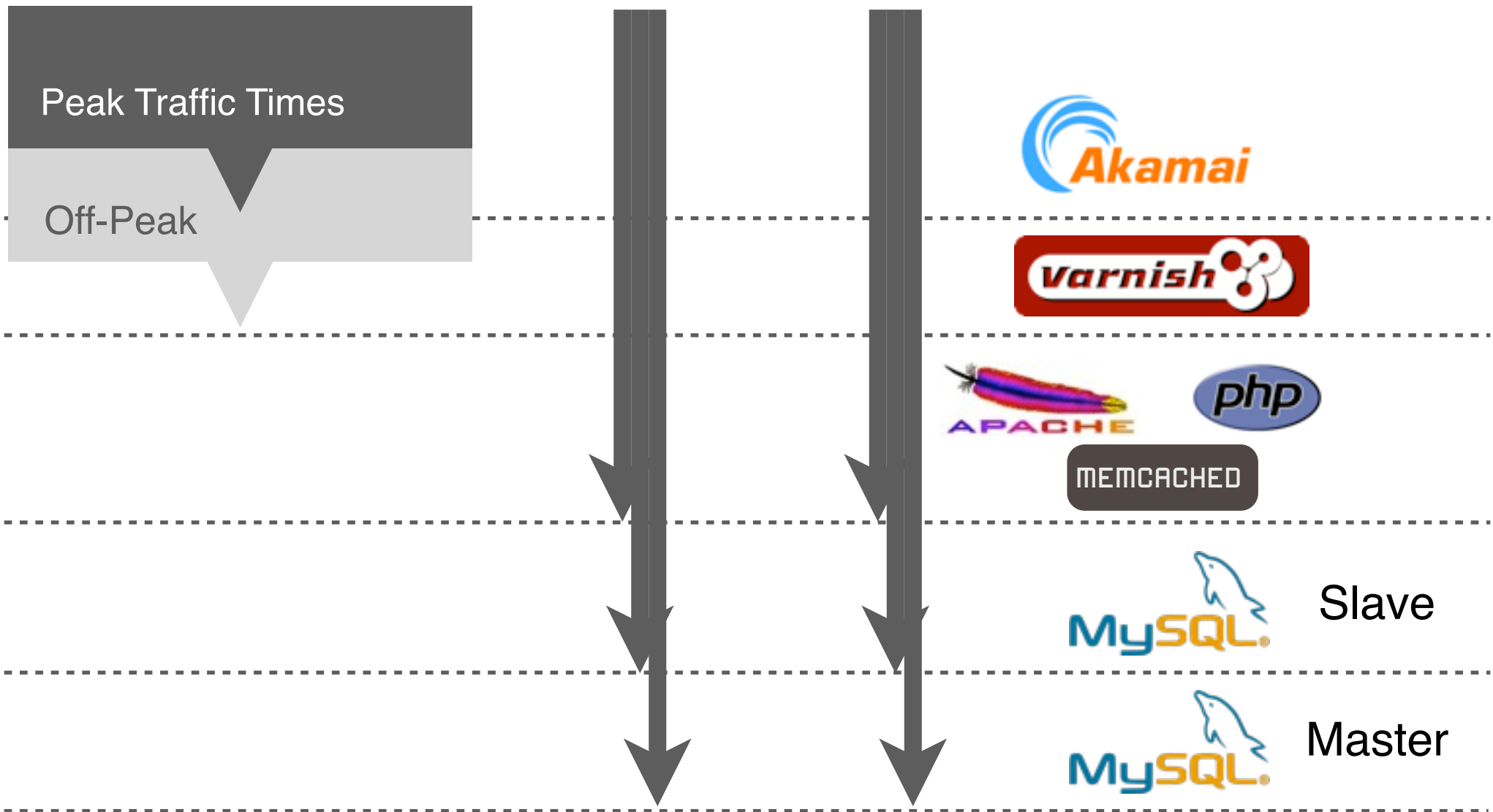
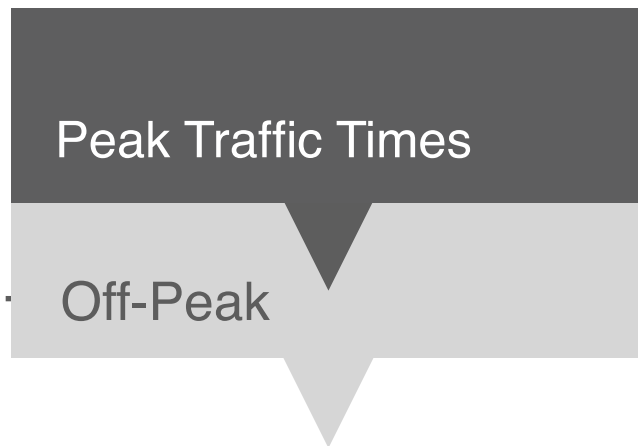


Master

All Together Now

Pure
Anonymous

Anonymous
w/ NO_CACHE Authenticated



Drupal Integration

Drupal Integration

- Most all configuration in settings.php

Drupal Integration

- Most all configuration in settings.php
 - Slave database setup

Drupal Integration

- Most all configuration in settings.php
 - Slave database setup
 - Memcache server setup

Drupal Integration

- Most all configuration in settings.php
 - Slave database setup
 - Memcache server setup
 - Varnish Reverse Proxy setup

Drupal Integration

- Most all configuration in settings.php
 - Slave database setup
 - Memcache server setup
 - Varnish Reverse Proxy setup
 - NO_CACHE cookie checking

Drupal Integration

- Most all configuration in settings.php
 - Slave database setup
 - Memcache server setup
 - Varnish Reverse Proxy setup
 - NO_CACHE cookie checking
- One Custom module to handle all cache edge-cases and set the NO_CACHE cookie.