

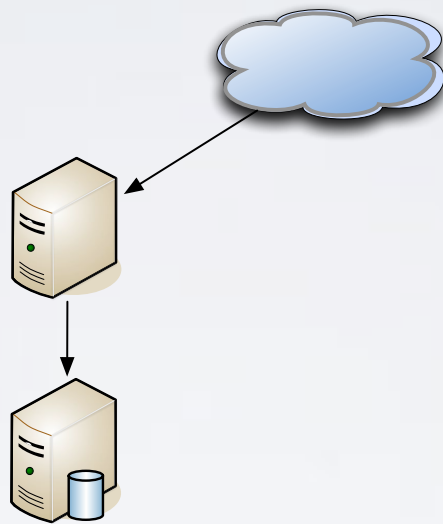
SCALING DRUPAL IN THE CLOUD

Eric Johnson - Case Foundation
Frank Febbraro - Phase2 Technology

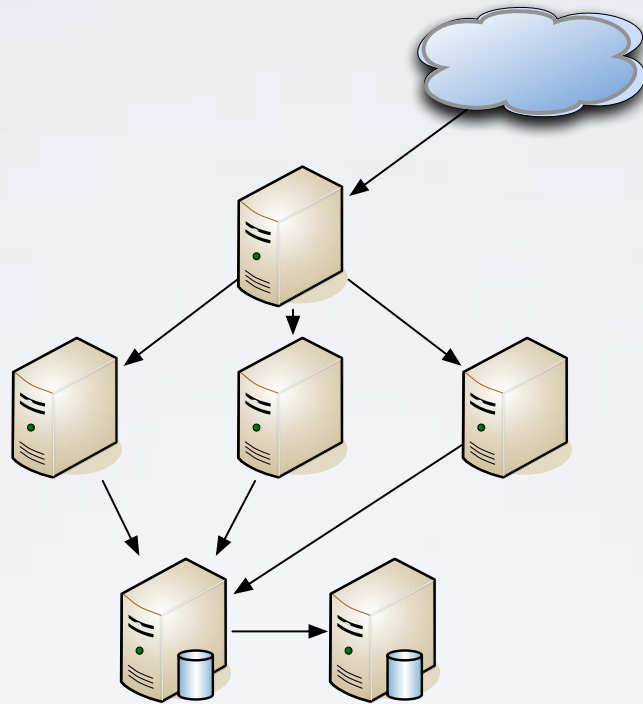
THE CHALLENGE

Super high peak traffic for just a few hours
Without going broke

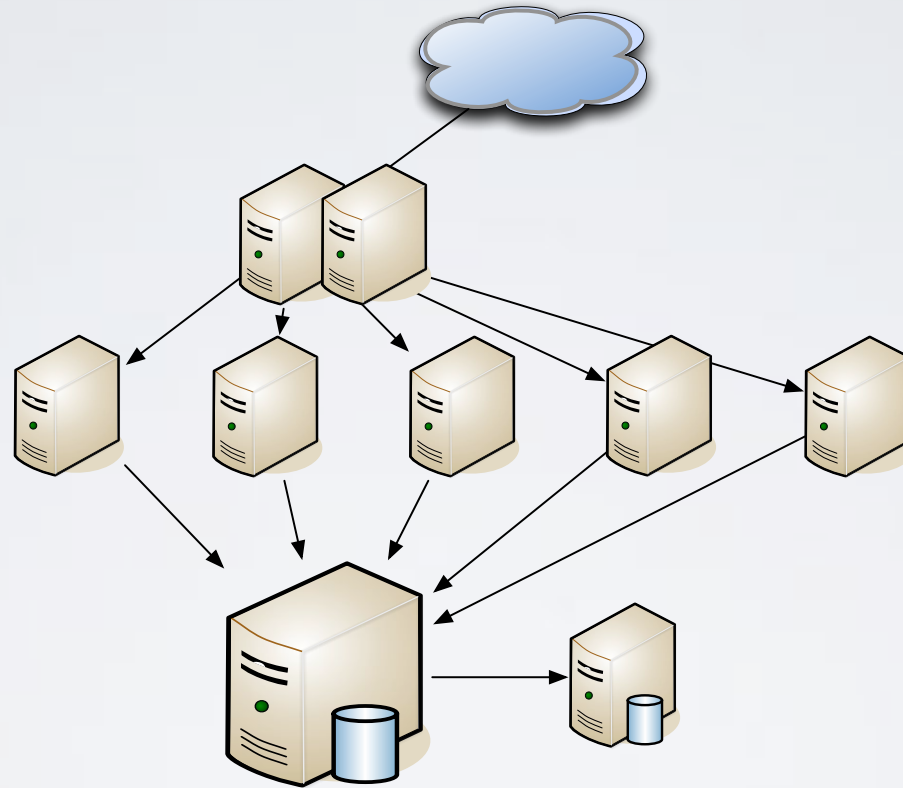
FROM THIS



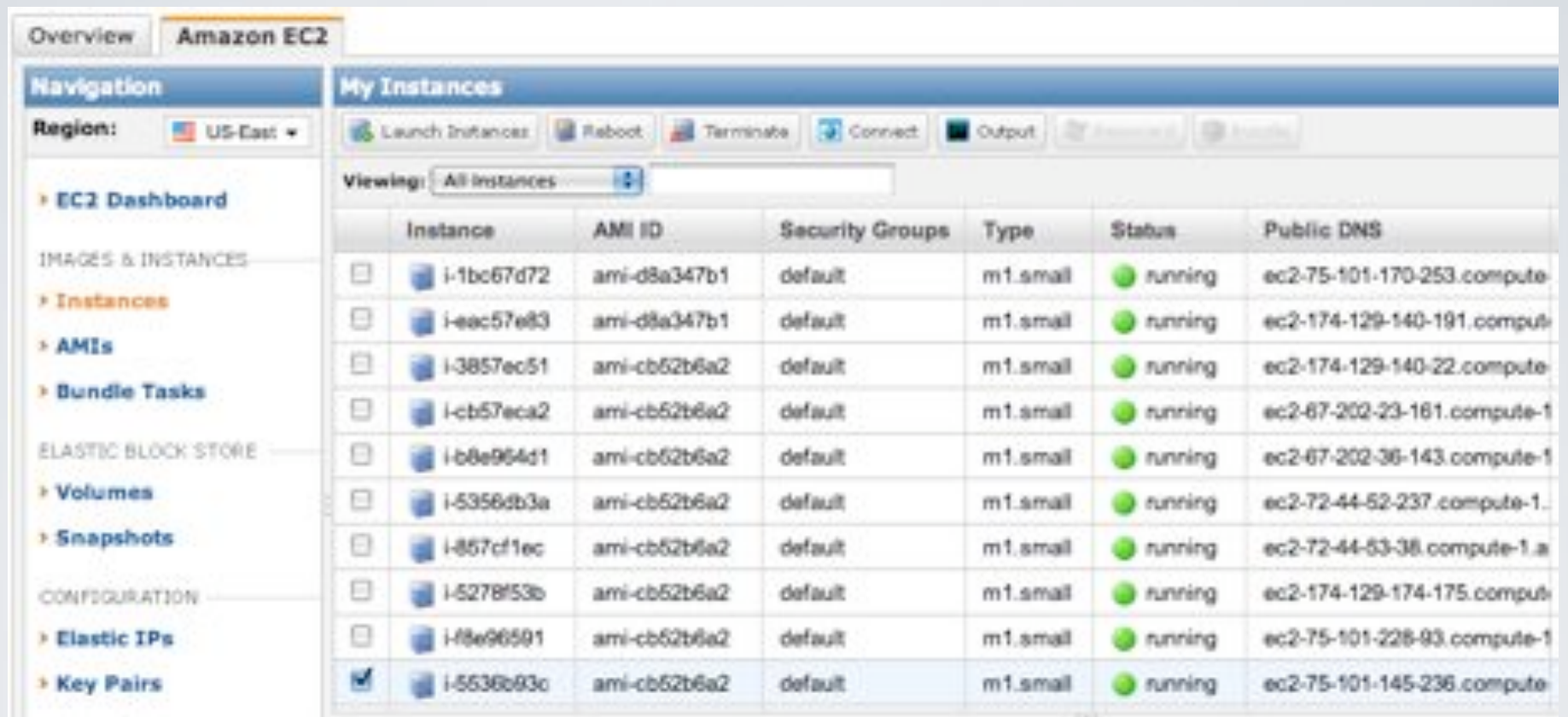
TO THIS



TO THIS



WITH JUST A FEW CLICKS



The screenshot displays the Amazon EC2 console interface. On the left is a navigation pane with sections for EC2 Dashboard, IMAGES & INSTANCES, ELASTIC BLOCK STORE, and CONFIGURATION. The 'Instances' link is highlighted. The main area is titled 'My Instances' and shows a table of running EC2 instances. Above the table are buttons for 'Launch Instances', 'Reboot', 'Terminate', 'Connect', 'Output', 'Refresh', and 'Filter'. A 'Viewing:' dropdown is set to 'All Instances'.

	Instance	AMI ID	Security Groups	Type	Status	Public DNS
<input type="checkbox"/>	i-1bc67d72	ami-d8a347b1	default	m1.small	running	ec2-75-101-170-253.compute-
<input type="checkbox"/>	i-eac57e83	ami-d8a347b1	default	m1.small	running	ec2-174-129-140-191.comput-
<input type="checkbox"/>	i-3857ec51	ami-cb52b6a2	default	m1.small	running	ec2-174-129-140-22.compute-
<input type="checkbox"/>	i-cb57eca2	ami-cb52b6a2	default	m1.small	running	ec2-67-202-23-161.compute-1
<input type="checkbox"/>	i-b8e964d1	ami-cb52b6a2	default	m1.small	running	ec2-67-202-36-143.compute-1
<input type="checkbox"/>	i-5356db3a	ami-cb52b6a2	default	m1.small	running	ec2-72-44-52-237.compute-1..
<input type="checkbox"/>	i-857cf1ec	ami-cb52b6a2	default	m1.small	running	ec2-72-44-53-38.compute-1.a
<input type="checkbox"/>	i-5278f53b	ami-cb52b6a2	default	m1.small	running	ec2-174-129-174-175.comput-
<input type="checkbox"/>	i-f8e96591	ami-cb52b6a2	default	m1.small	running	ec2-75-101-228-93.compute-1
<input checked="" type="checkbox"/>	i-5536b93c	ami-cb52b6a2	default	m1.small	running	ec2-75-101-145-236.compute-

THE PEOPLE

Eric at The Case Foundation

- Was spending for boxes not always needed
- Runs periodic campaigns (48,000 people donating for 6 month grant competition)
- Likes to send press releases
- Moved Drupal to AWS in December 2007

THE PEOPLE

Frank at Phase2 Technology

- Architect
- First significant AWS deployments
- Kickoff to deployment in 5 weeks
- Team developed code & deployment scaling concurrently

IN THE CLOUD

The Promise	The Challenge
Servers when you need	Configuration , please
Multiple datacenters	Filesystem sync
Pay for what you need	\$70/month/cpu + bandwidth

WHAT IS AWS?

Amazon Web Services

S3

super simple storage

EC2

elastic compute cloud

EBS

elastic block storage

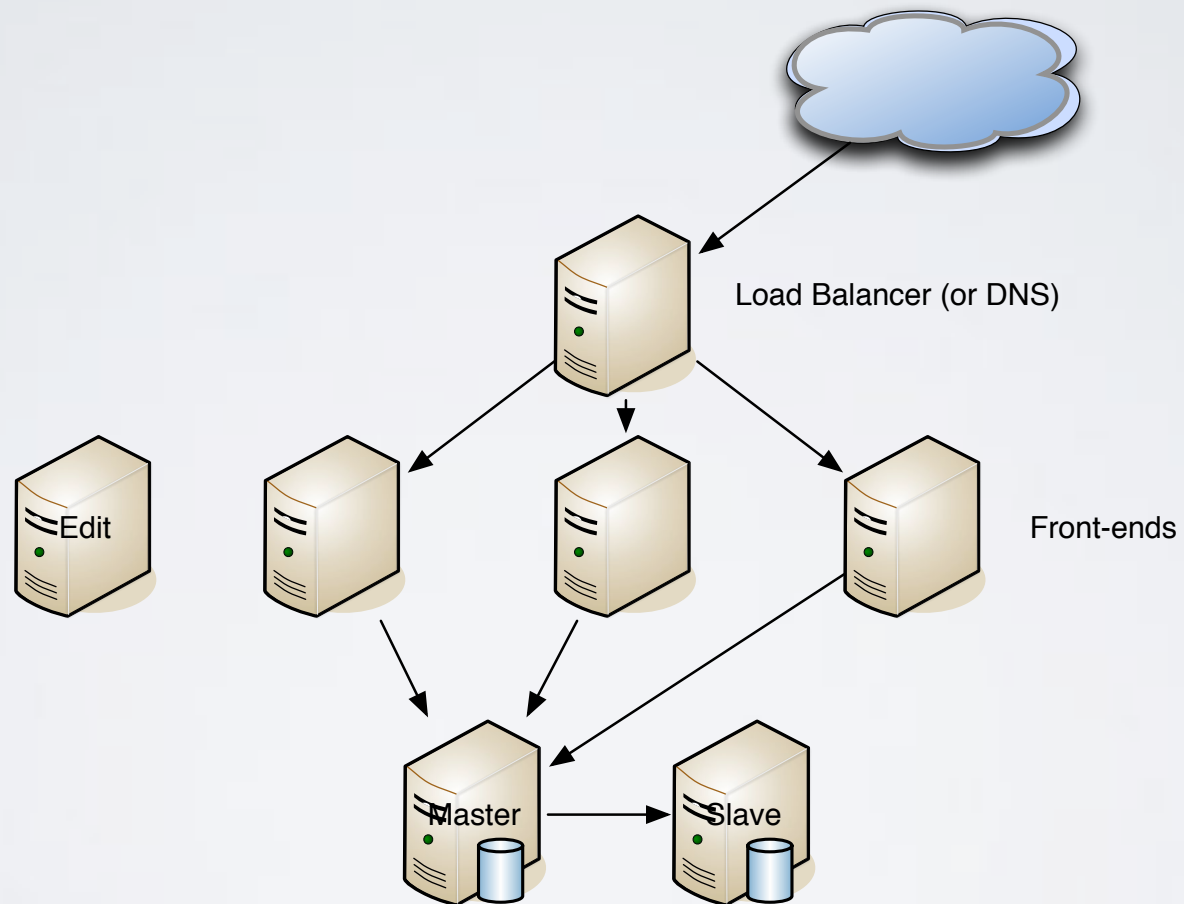
SHUT UP ALREADY!

how do I actually deploy & scale my site

OUR SOLUTION

- multiple front ends
- master/slave database
- dedicated edit server
- ebs mounted filesystems (files & db)
- sync files to front ends every minute
- not ideal for large number of editors

SOLUTION



now it is time to **develop** your deployment

```
export EC2_HOME=$HOME/ec2-api-tools-1.3-30349
export PATH=$PATH:$EC2_HOME/bin
export EC2_PRIVATE_KEY=$HOME/<where your private key is>/pk-
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX.pem
export EC2_CERT=$HOME/<where your certificate is>/cert-
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX.pem
export JAVA_HOME=/usr/lib/jvm/java-1.5.0-sun/
```

1. Start the images you want using one of the following commands: 32 bits:

```
ec2-run-instances ami-xxxxx -k ec2-keypair
```

64 bits:

```
ec2-run-instances ami-xxxxx -k ec2-keypair -t c1.xlarge
```

where ami-xxxxx is the AMI ID found in the above table.

2. To see the status of your instance, you can run the following command:

```
ec2-describe-instances
```

3. Authorize network access to the ssh port by running the following commands:

```
ec2-authorize default -p 22
```

4. To login to your instance you have to run the following command:

```
ssh -i /path/to/ec2-keypair.pem ubuntu@<external-host-name>
```

directly on on aws

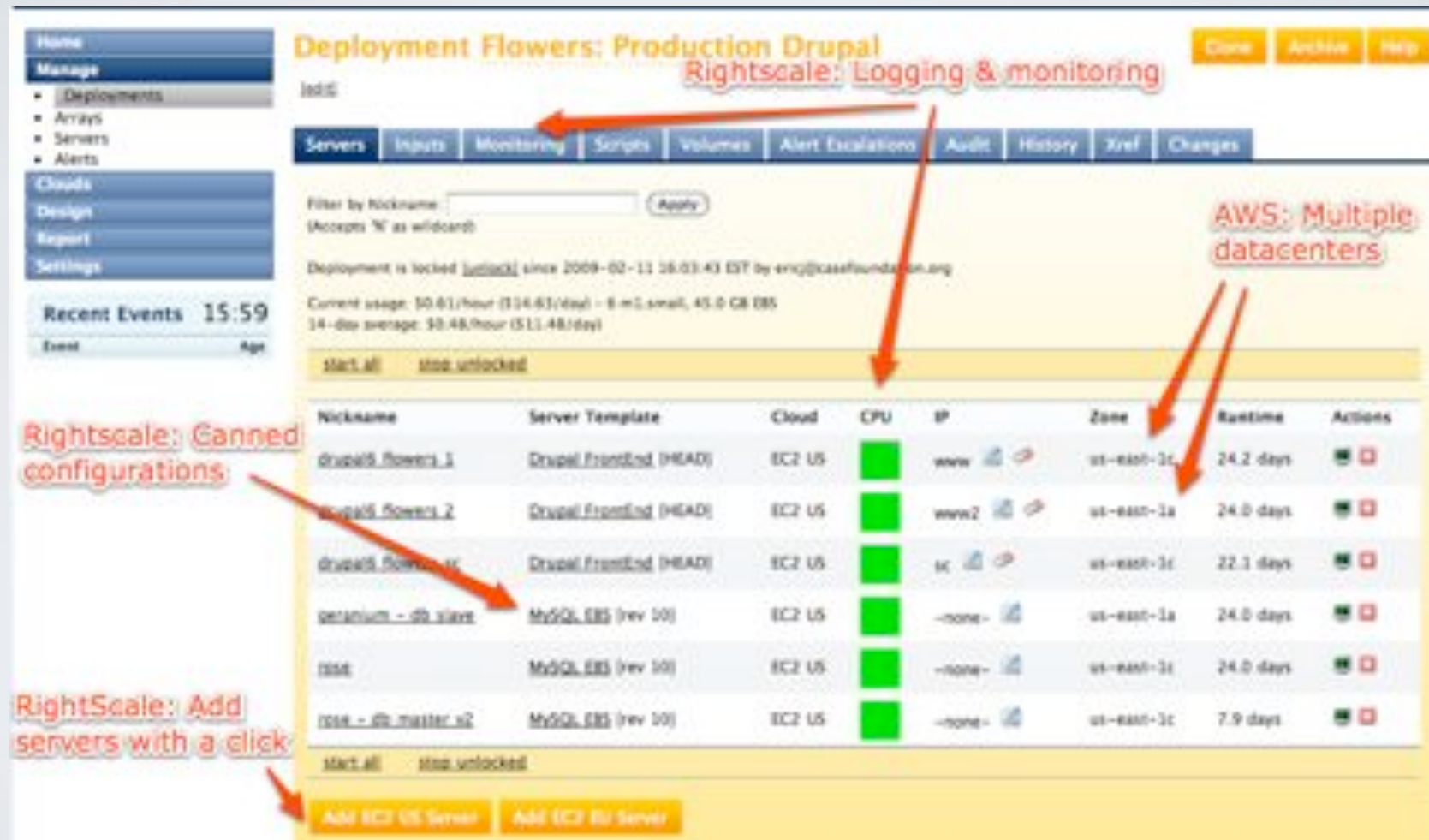
DO YOU NEED HELP?

CLOUD MANAGEMENT

RightScale, Scalr, etc.

we chose RightScale

WHY RIGHTSCALE?



Deployment Flowers: Production Drupal

RightScale: Logging & monitoring

RightScale: Ganned configurations:

RightScale: Add servers with a click

AWS: Multiple datacenters

Nickname	Server Template	Cloud	CPU	IP	Zone	Runtime	Actions
drupal01.flowers.1	Drupal frontEnd (HEAD)	EC2 US	<div></div>	www	us-east-1c	24.2 days	
drupal01.flowers.2	Drupal frontEnd (HEAD)	EC2 US	<div></div>	www2	us-east-1a	24.0 days	
drupal01.flowers.3	Drupal frontEnd (HEAD)	EC2 US	<div></div>	sc	us-east-1c	22.1 days	
petanum - db slave	MySQL_EBS (rev 10)	EC2 US	<div></div>	-none-	us-east-1a	24.0 days	
rose	MySQL_EBS (rev 10)	EC2 US	<div></div>	-none-	us-east-1c	24.0 days	
rose - db master v2	MySQL_EBS (rev 10)	EC2 US	<div></div>	-none-	us-east-1c	7.9 days	

Buttons: Add EC2 US Server, Add EC2 EU Server

LETS GET TO IT

EC2 Instance

Boot Scripts

register with load balancer

deploy site, restore db

vhost install, customize config

mount EBS, DNS

php, httpd, apc, memcached

AMI - O/S

EC2 Instance

Operational Scripts

failover

site deployment

backup snapshot

Boot Scripts

register with load balancer

deploy site, restore db

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mount EBS, DNS

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AMI - O/S

EC2 Instance

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site deployment

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Boot Scripts

register with load balancer

deploy site, restore db

vhost install, customize config

mount EBS, DNS

php, httpd, apc, memcached

AMI - O/S

**M
o
n
i
t
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n
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&
A
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t
s**

template everything

```
#!/bin/bash -e
```

```
host_names=$HOST_NAMES  
app_name=$APP_NAME  
content_dir="/home/lamp/$app_name/current"  
log_dir="/var/log/httpd"
```

Rightsale fills
in at boot-time

```
mkdir -p /home/lamp/$app_name/releases  
mkdir -p $log_dir  
cat <<EOF> /etc/httpd/conf.d/$app_name.conf
```

```
NameVirtualHost *:80
```

```
<VirtualHost *:80>
```

```
ServerName $SEC2_PUBLIC_HOSTNAME  
ServerAlias $host_names  
UseCanonicalName Off
```

```
RewriteEngine On  
RewriteCond %{REMOTE_ADDR} "(127.0.0.1)"  
RewriteRule ^(/server-status) \%1 [H=server-status,L]
```

```
# Turn on GZIP Compression by type
```

```
AddOutputFilterByType DEFLATE text/html text/plain text/xml
```

```
ServerAdmin $ADMIN_EMAIL
```

```
DocumentRoot $content_dir
```

```
<Directory "$content_dir">
```

```
Options FollowSymLinks MultiViews
```

```
AllowOverride All
```

```
Order allow,deny
```

```
Allow from all
```

```
</Directory>
```

```
CustomLog $log_dir/$app_name.log combined
```

```
</VirtualHost>
```

```
EOF
```

Deployment Flowers: Production Drupal

[ledal](#)

[Copies this set of server configs](#)

[Clone](#)

[Archive](#)

[Help](#)

[Servers](#)

[Inputs](#)

[Monitoring](#)

[Scripts](#)

[Volumes](#)

[Alert Escalations](#)

[Audit](#)

[History](#)

[Xref](#)

[Changes](#)

Filter by Nickname:

[Apply](#)

(Accepts '*' as wildcard)




















Deployment is locked [\[unlock\]](#) since 2009-02-11 16:03:43 EST by ericj@casefoundation.org

Current usage: \$0.61/hour (\$14.63/day) - 6 m1.small, 45.0 GB EBS

14-day average: \$0.18/hour (\$4.34/day)

[start all](#)

[stop unlocked](#)

Nickname	Server Template	Cloud	CPU	IP	Zone	Runtime	Actions
drupal6 flowers_1	Drupal FrontEnd (HEAD)	EC2 US		www  	us-east-1c	31.0 days	 
drupal6 flowers_2	Drupal FrontEnd (HEAD)	EC2 US		www2  	us-east-1a	30.8 days	 
drupal6 flowers_sc	Drupal FrontEnd (HEAD)	EC2 US		sc  	us-east-1c	28.9 days	 
geranium - db_slave	MySQL EBS (rev 10)	EC2 US		-none- 	us-east-1a	30.8 days	 

what about test, stage & production



failover

is the cloud right for you?

QUESTIONS?

OR DROP US A NOTE

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<http://el-studio.com/tag/cloud/>

- Frank Febbraro
CTO
Phase2 Technology
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<http://agileapproach.com>