A Tale of Two Teams

Working together is hard, let's go ~~program~~ automate!

Eng

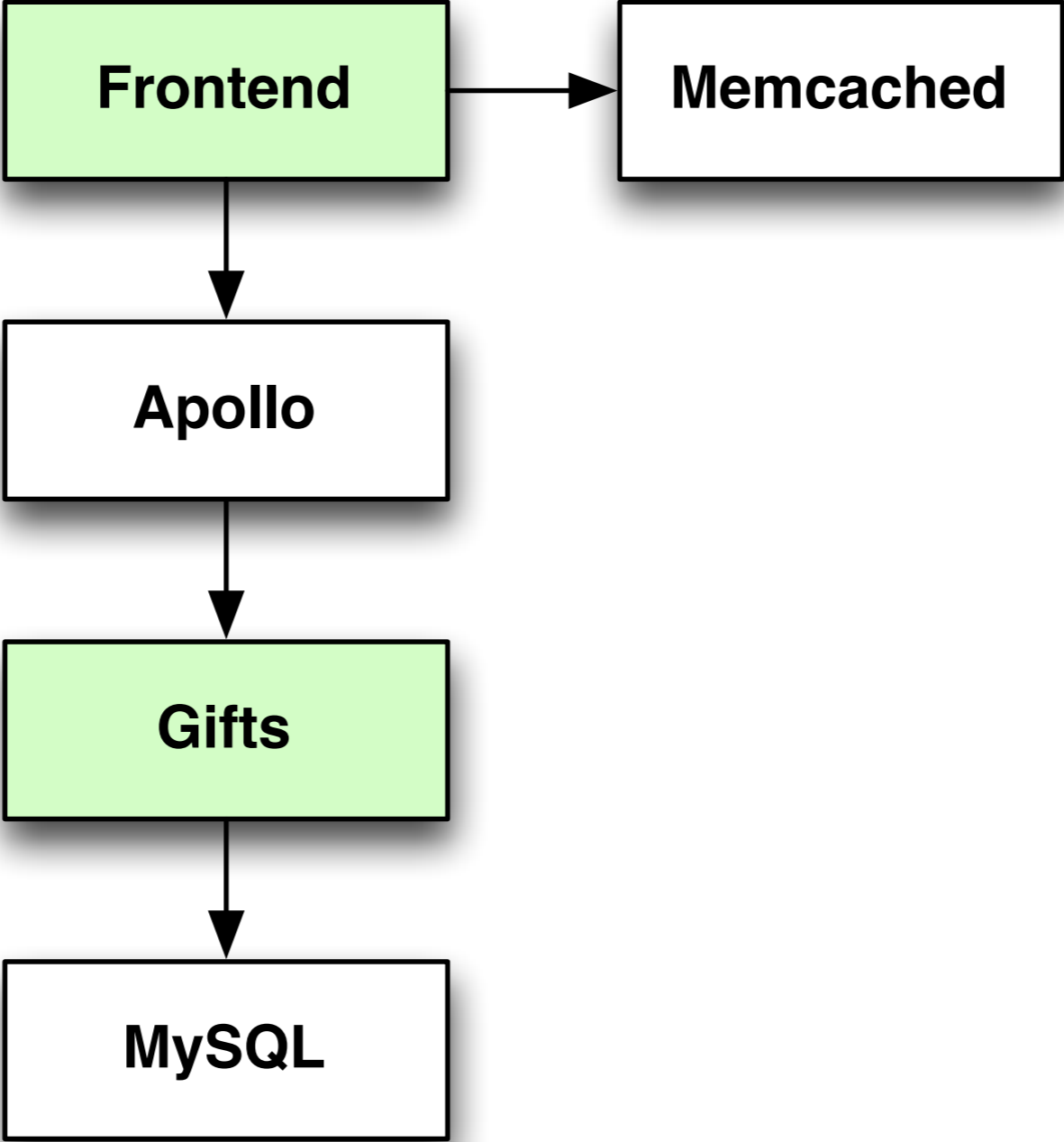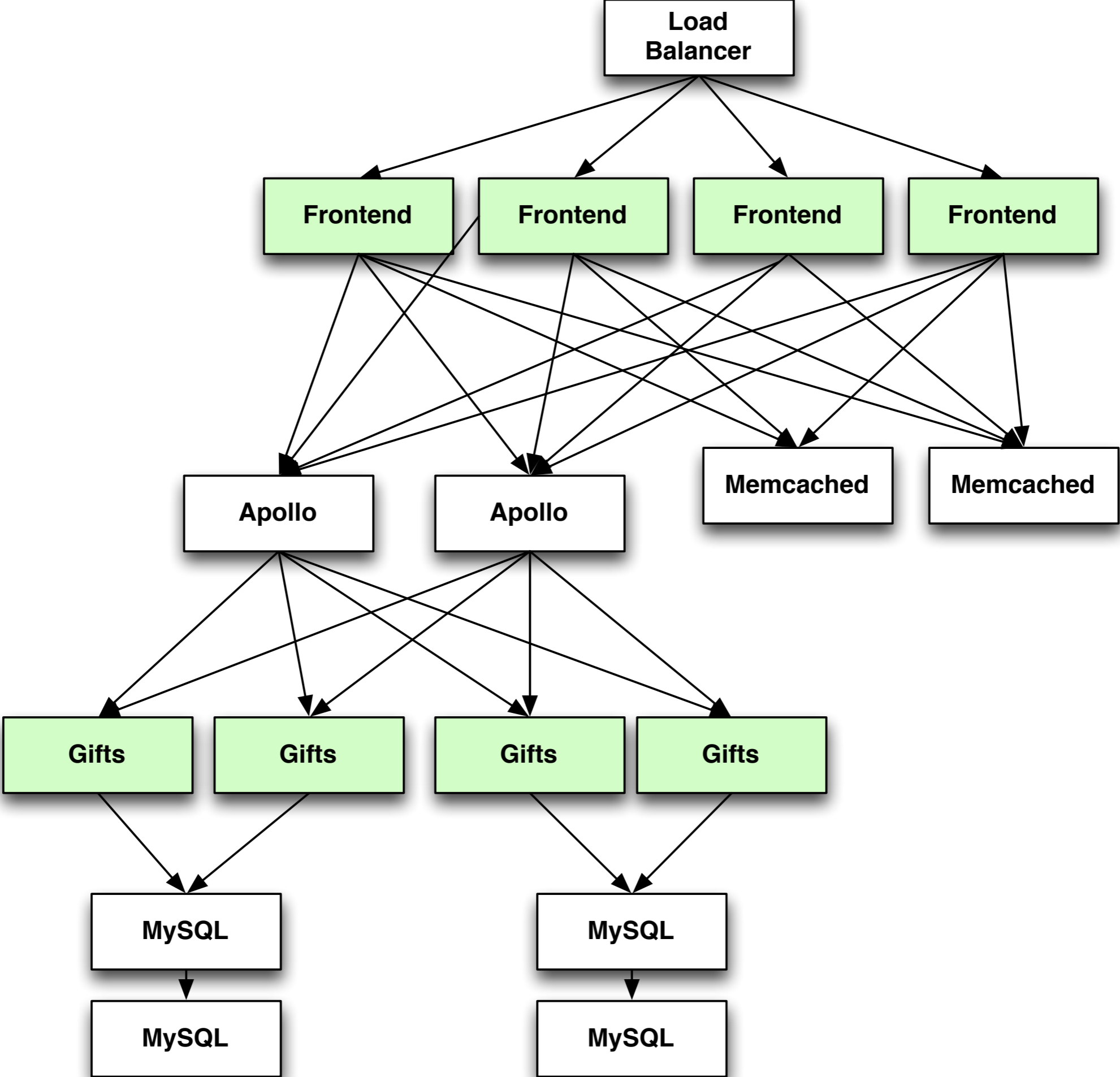|	
Load Balancer	
Frontend	Memcached
Apollo	
Gifts	
MySQL	

```
Frontend ──────────────▶ Memcached
   │
   ▼
Apollo
   │
   ▼
Gifts
   │
   ▼
MySQL
```

Load
Balancer

Frontend

API

Memcached

Apollo

Gifts

Discuss

MySQL

Zookeeper

Frontend

Load Balancer	
Frontend	**API**
Memcached	**Apollo**

Backend

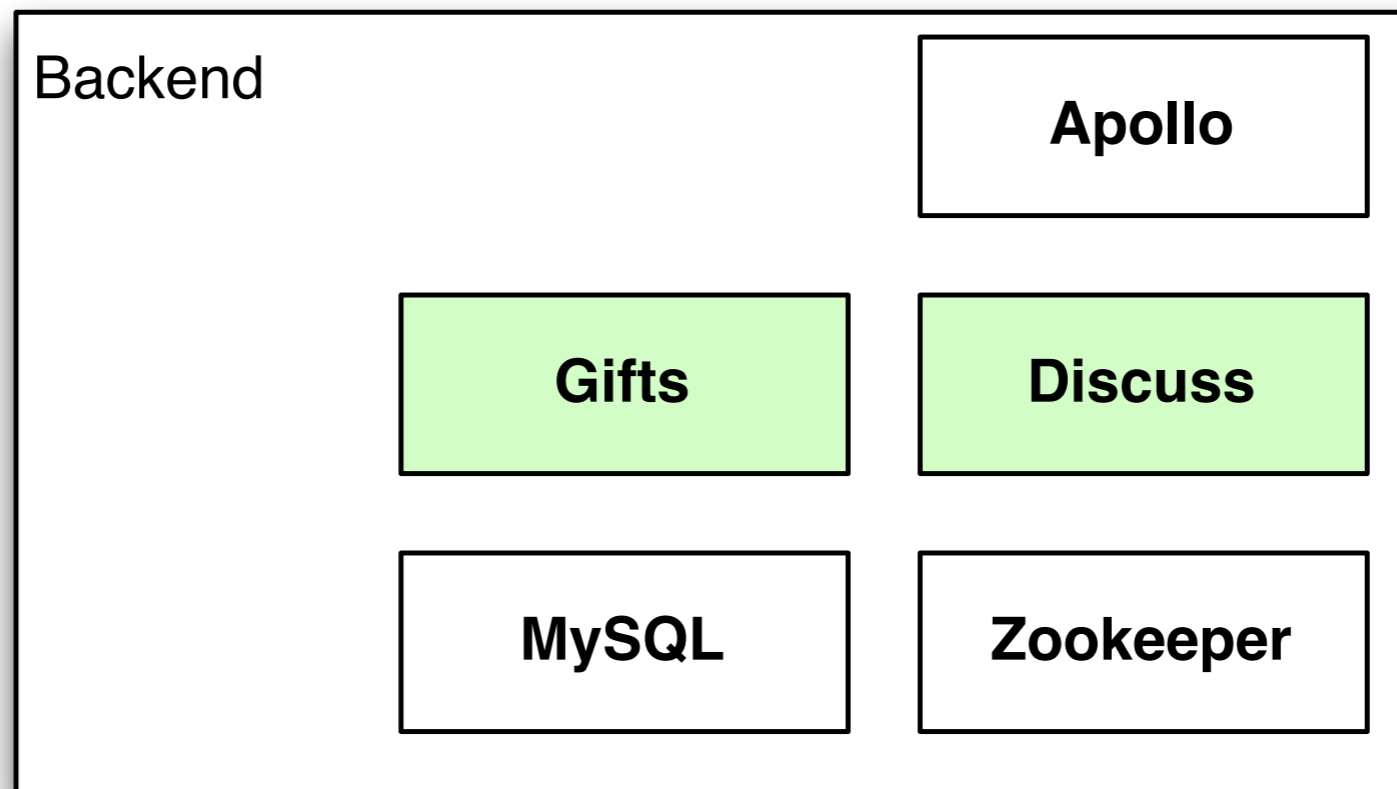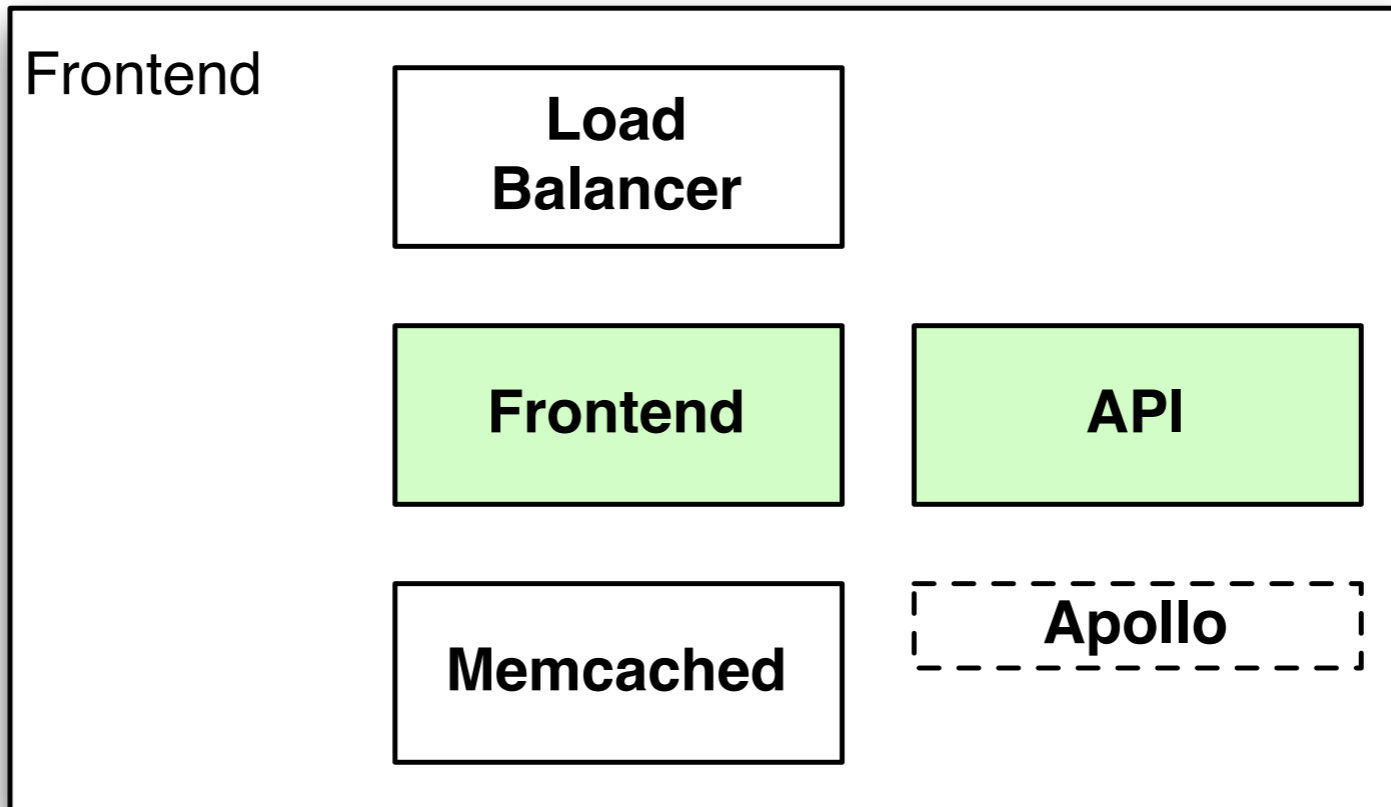|	
	Apollo
Gifts	**Discuss**
MySQL	**Zookeeper**

Now It's More Complicated

~Arbitrary Language, Platform, Libraries

Fast Deployment, Fast Rollback

Complete Packages

Uniform Deployment Mechanism

Low Touch/No Touch

Deployment

<type>-<version>-<arch>.tar.gz

/bin/control start
/bin/control stop
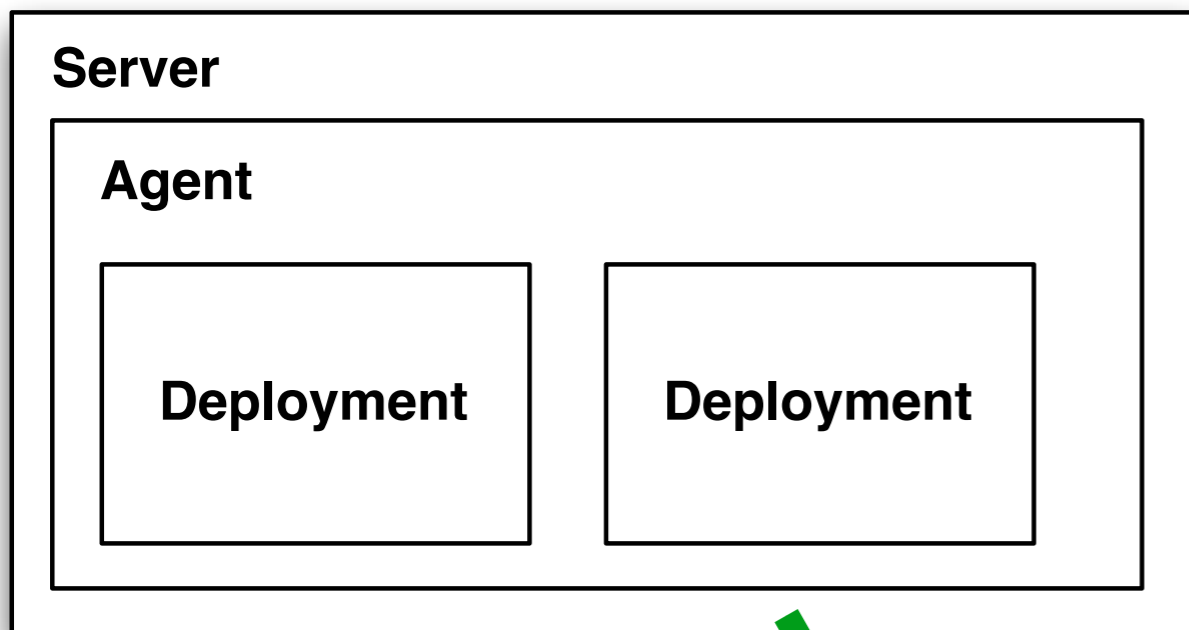/bin/control status

Example Bundles:
  Mac: http://bit.ly/osx-bundle
  Linux-x86_64: http://bit.ly/linux-bundle

Agent

Deployment

Deployment
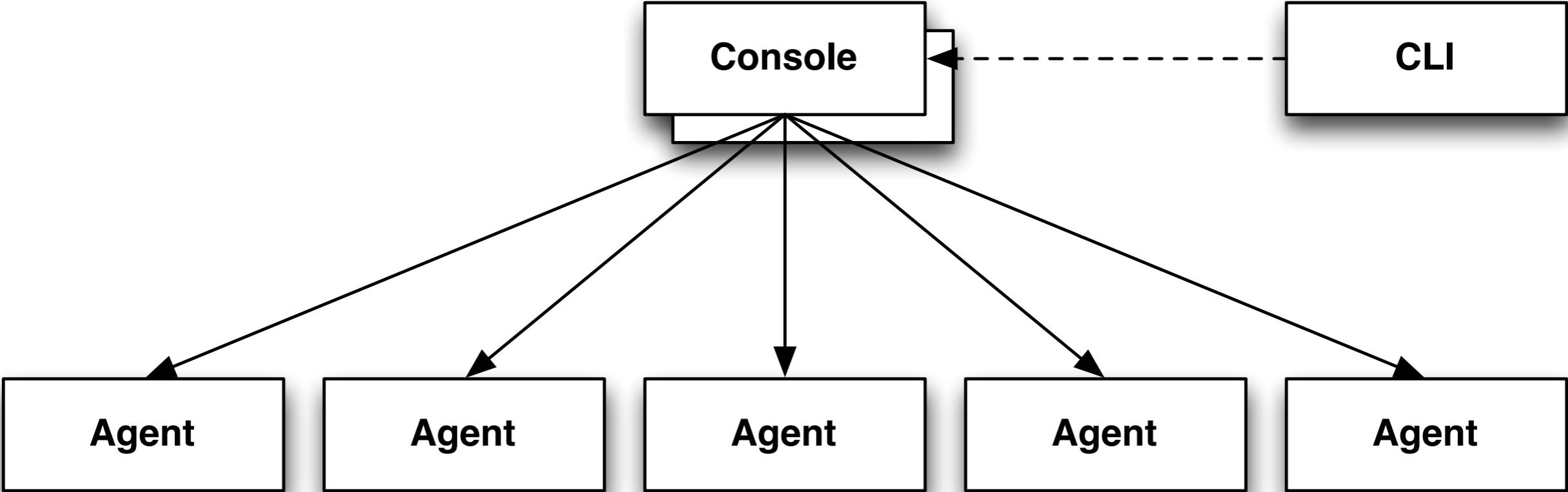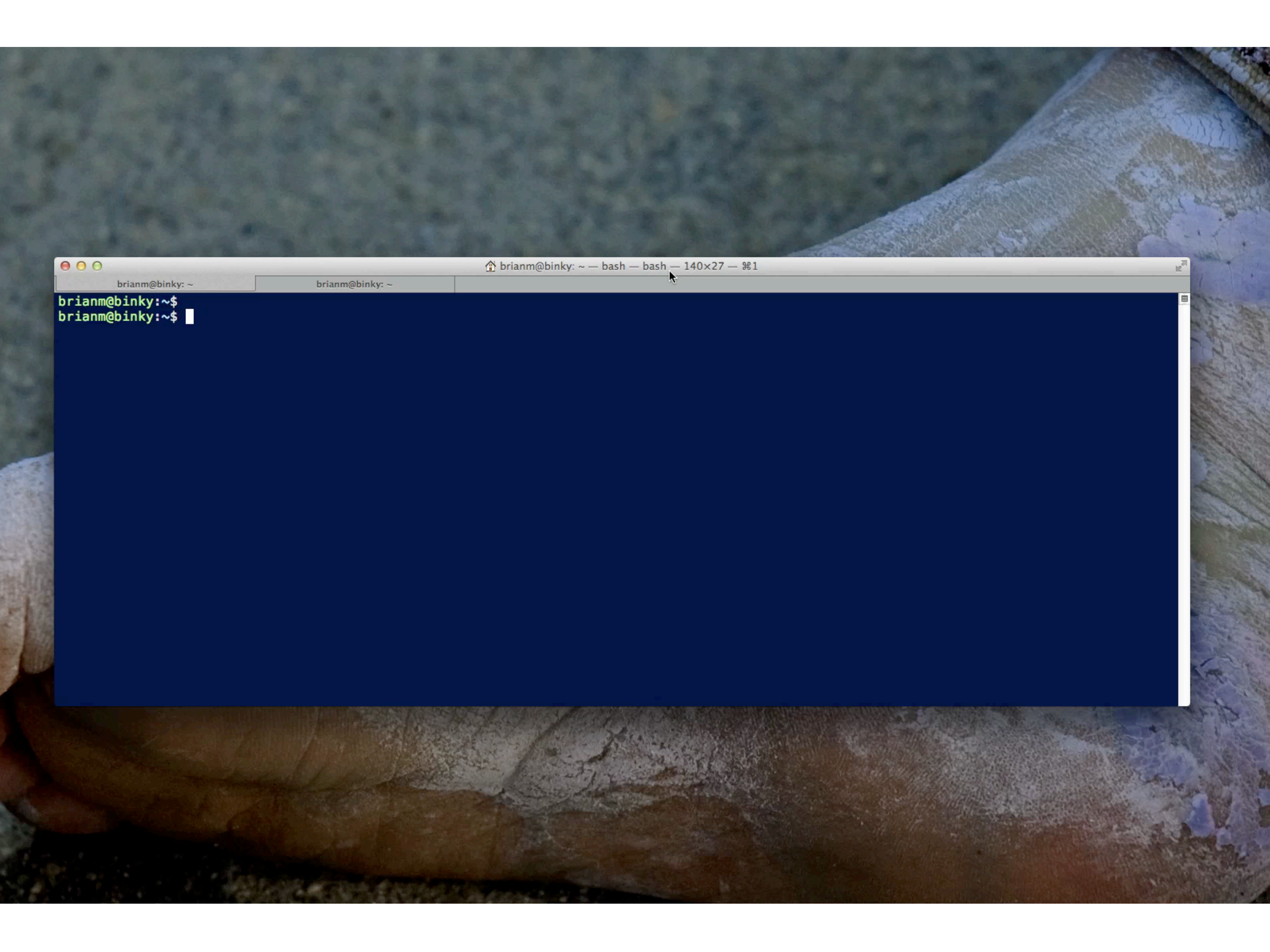
deployment root
management api
basic reporting

Server

Agent

| Deployment | Deployment |

Agent managed as OS service, by
operational automation (chef, puppet, etc)

Provide Application Deployment through a Friendly Interface

```
brianm@binky:~$
brianm@binky:~$
```

```
$ sculptor agent deploy -a http://agent:25365/ \
    -n thinglet http://repo/frontend-0.0.3-x86_64.tar.gz

$ sculptor agent list -a http://agent:25365/
0b75  thinglethttp://agent:25365/slot/0b75  stopped

$ sculptor slot start -a http://agent:25365/ 0b75

$ sculptor agent list -a http://agent:25365/
0b75  thinglethttp://agent:25365/slot/0b75  running

$
```

Ops

Back to Giftudi's Problems

Frontend

| Load Balancer |
| Frontend | API |
| Memcached | Apollo |

Backend

	Apollo
Gifts	Discuss
MySQL	Zookeeper
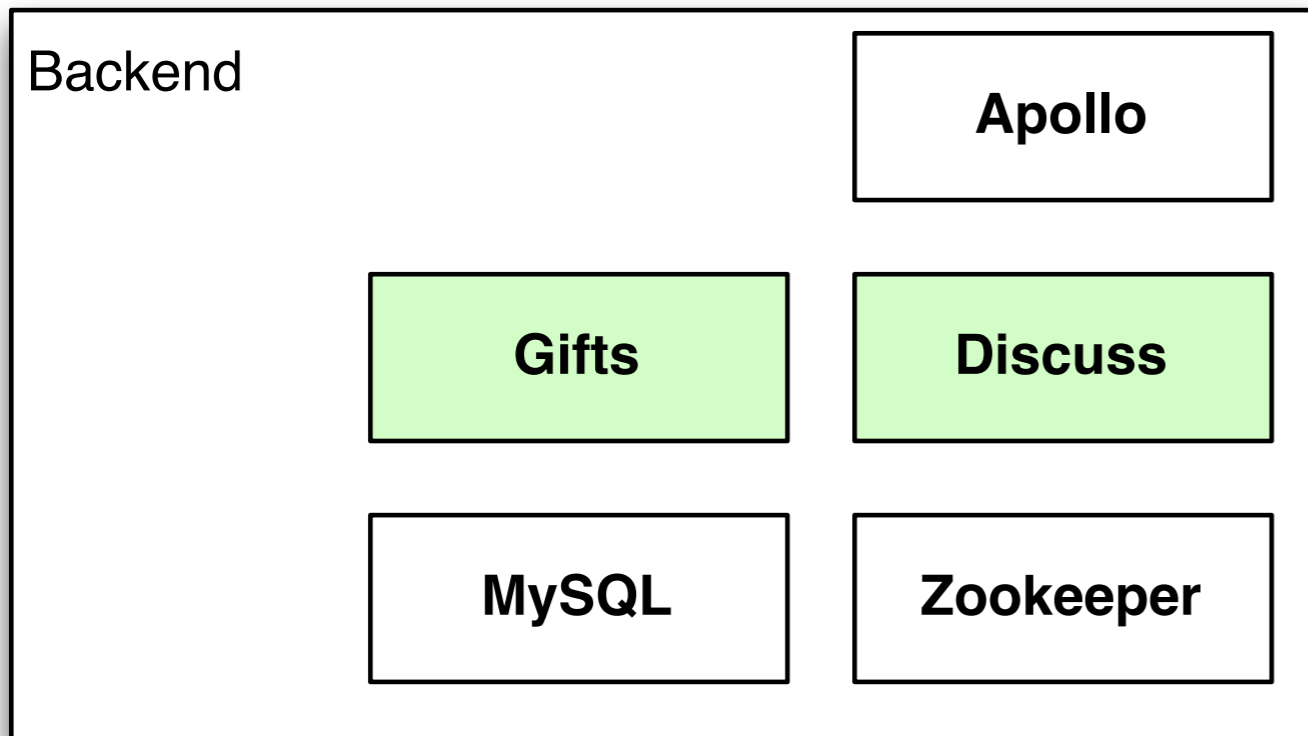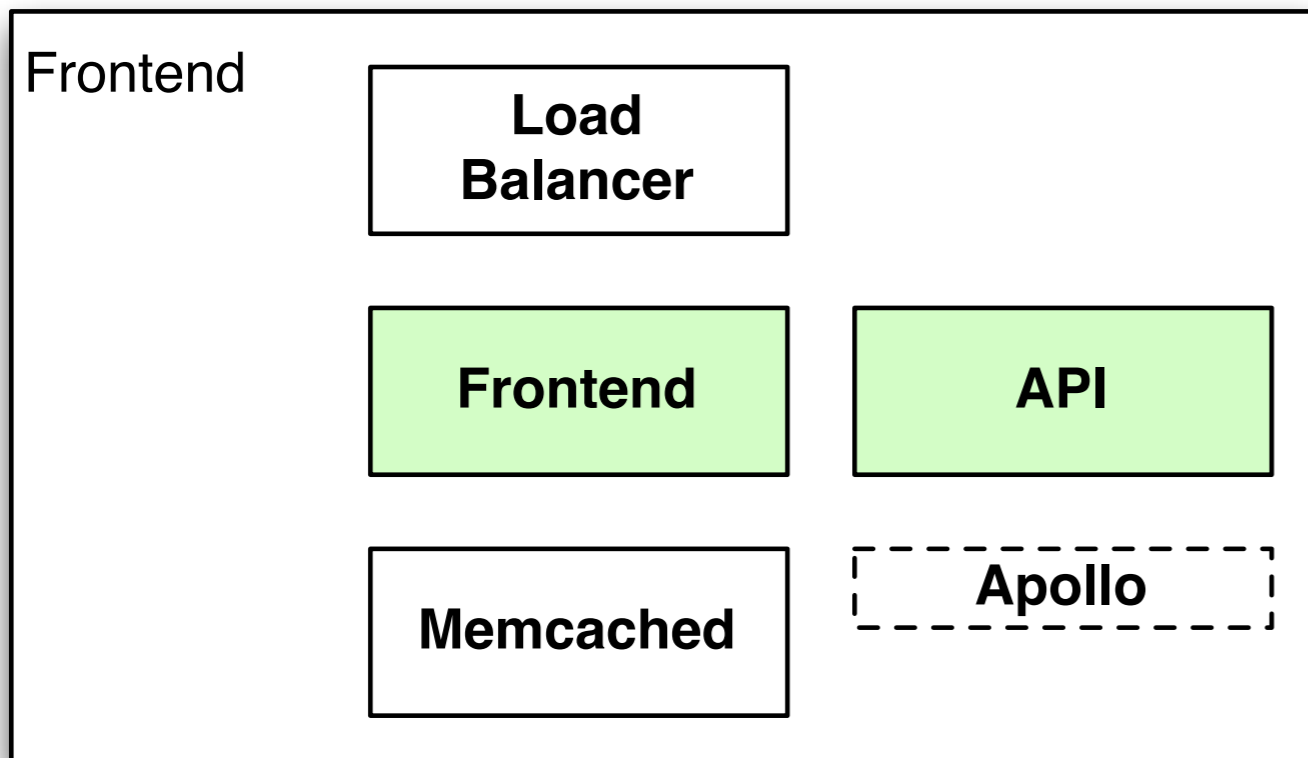
- API needs new behavior on Gifts.

- Frontend needs new Discuss.

- Gifts needs new sharding scheme

- Frontend needs new APIs on Gifts.

- API needs new behavior on Gifts.

  Dev on API
  Dev on Gifts

- Frontend needs new Discuss.

  Dev on Frontend
  Dev on Discuss

- Gifts needs new sharding scheme

  Dev on Gifts
  Dev on API
  Dev on Frontend
  Dev on Apollo

- Frontend needs new behavior on Gifts.

  Dev on Frontend
  Dev on Gifts

```
system "frontend" do

  server "front-lb"
  server "api-lb"

  server "frontend"




  server "api"




  server "memcached"


end
```

```
system "frontend" do

  server "front-lb", base: "load-balancer:front?from=80&to=8000"
  server "api-lb",   base: "load-balancer:api?from=80&to=8000"

  server "frontend", base: "appserver",




  server "api", base: "appserver",




  server "memcached", base: "memcached",


end
```

```
system "frontend" do

  server "front-lb", base: "load-balancer:front?from=80&to=8000"
  server "api-lb",   base: "load-balancer:api?from=80&to=8000"

  server "frontend", base: "appserver",
                     cardinality: 4,



  server "api", base: "appserver",
              cardinality: 4,
              install:



  server "memcached", base: "memcached",
                      cardinality: 2,



end
```

```ruby
system "frontend" do

  server "front-lb", base: "load-balancer:front?from=80&to=8000"
  server "api-lb",   base: "load-balancer:api?from=80&to=8000"

  server "frontend", base: "appserver",
                     cardinality: 4,
                     install: ["galaxy:frontend-0.0.2",
                               "lb-add:front"]


  server "api", base: "appserver",
                cardinality: 4,
                install: ["galaxy:api-0.0.1",
                          "lb-add:api"]


  server "memcached", base: "memcached",
                      cardinality: 2,
                      install: ["announce:/frontend/memcached"]

end
```

```
system "backend" do

  server "apollo", base: "apollo",
                   cardinality: 2
                   install: ["announce:/apollo/"]


  server "zookeeper", base: "zookeeper",
                      cardinality: 5
                      install: ["scratch:zk=@"]


  system "gift-cluster", cardinality: 2 do
    server "gifts", base: "appserver",
                    cardinality: 2,
                    install: ["galaxy:gifts-0.0.2"]


    server "mysql", base: "mysql",
                    install: ["announce:/gclu/{parent.id}/"]
  end

  server "discuss", base: "appserver",
                    cardinality: 2,
                    install: ["galaxy:discuss-0.0.1"]
end
```
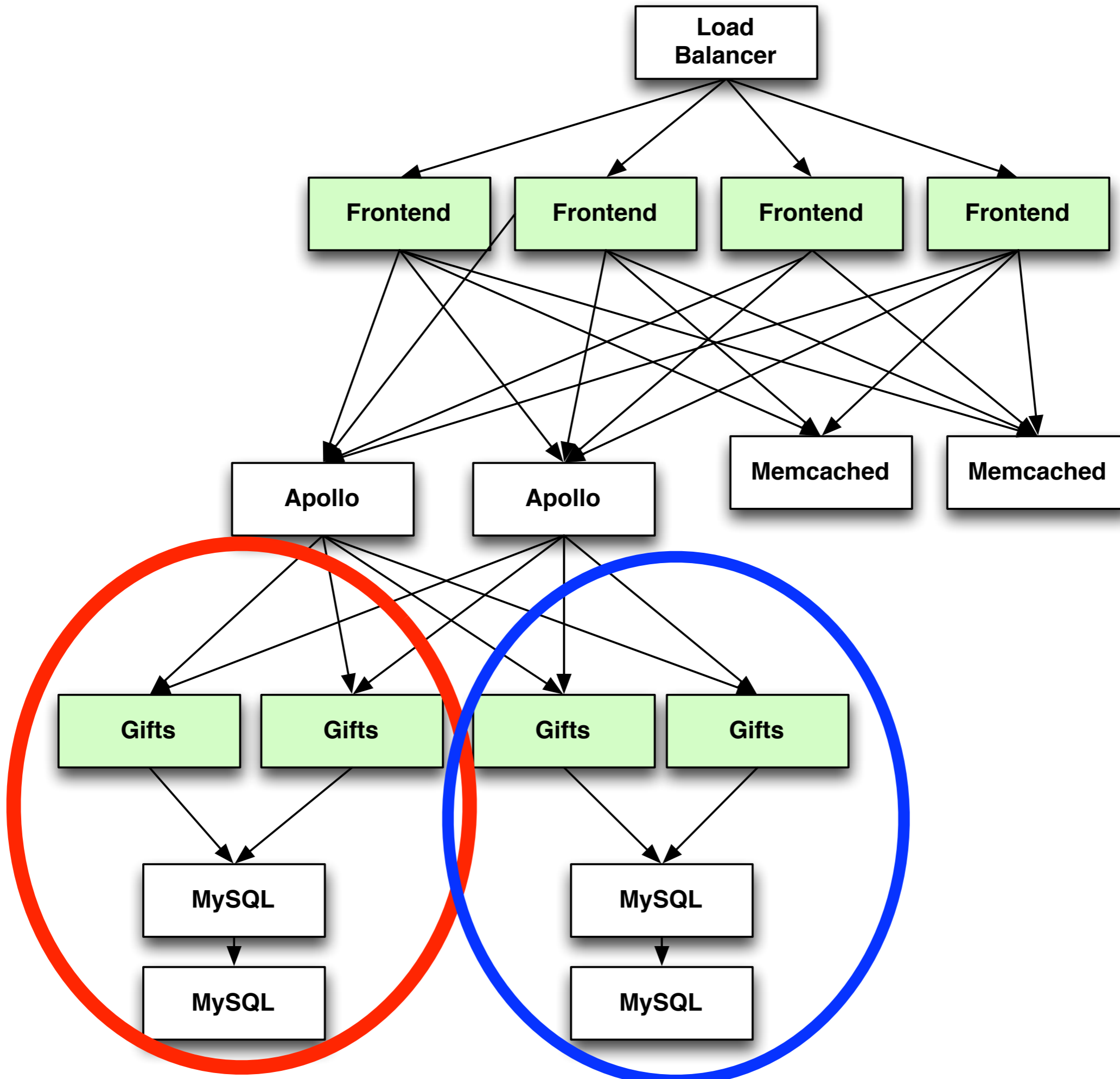
```
system "backend" do

  server "apollo", base: "apollo",
                   cardinality: 2
                   install: ["announce:/apollo/"]

  server "zookeeper", base: "zookeeper",
                      cardinality: 5
                      install: ["scratch:zk=@"]

  system "gift-cluster", cardinality: 2 do
    server "gifts", base: "appserver",
                    cardinality: 2,
                    install: ["galaxy:gifts-0.0.2"]

    server "mysql", base: "mysql",
                    install: ["announce:/gclu/{parent.id}/"]
  end

  server "discuss", base: "appserver",
                    cardinality: 2,
                    install: ["galaxy:discuss-0.0.1"]
end
```

```
system "frontend" do

  server "front-lb", base: "load-balancer:front?from=80&to=8000"
  server "api-lb",   base: "load-balancer:api?from=80&to=8000"

  server "frontend", base: "appserver",
                     cardinality: 4,
                     install: ["galaxy:frontend-0.0.2",
                               "lb-add:front"]


  server "api", base: "appserver",
                cardinality: 4,
                install: ["galaxy:api-0.0.1",
                          "lb-add:api"]


  server "memcached", base: "memcached",
                      cardinality: 2,
                      install: ["announce:/frontend/memcached"]

end
```

```
environment "dev" do

  cardinality "/frontend.0/frontend"  => 1,
            "/frontend.0/api"        => 1,
            "/frontend.0/memcached" => 1

  listener "ssh-keypairs", atlas: "default"

  provisioner "vmware", {
    vmrun: "/usr/local/bin/vmrun",
    ubuntu: "http://repo/ubuntu-12.04-atlas.tgz?user=atlas&pass=atlas"
  }

  base "ubuntu", provisioner: "vmware:ubuntu",
                init: ["apt:emacs23-nox"]

  base "appserver", inherit: "ubuntu",
                init: ["galaxy-agent"]

  ...
end
```

```
server "api", base: "appserver",
                cardinality: 4,
                install: ["galaxy:api-0.0.1",
                          "lb-add:api"]
```

System

```
provisioner "vmware", {                    Env
  vmrun: "/usr/local/bin/vmrun",
  ubuntu: "http://..."
}

base "ubuntu", provisioner: "vmware:ubuntu",
               init: ["apt:emacs23-nox"]

base "appserver", inherit: "ubuntu",
               init: ["sculptor-agent"]
```

```
server "api", base: "appserver",
                cardinality: 4,
                install: ["galaxy:api-0.0.1",
                          "lb-add:api"]
```

System

```
provisioner "vmware", {
  vmrun: "/usr/local/bin/vmrun",
  ubuntu: "http://..."
}
```

Env

```
base "ubuntu", provisioner: "vmware:ubuntu",
                init: ["apt:emacs23-nox"]


base "appserver", inherit: "ubuntu",
                  init: ["sculptor-agent"]
```

```
server "api", base: "appserver",
                cardinality: 4,
                install: ["galaxy:api-0.0.1",
                          "lb-add:api"]
```
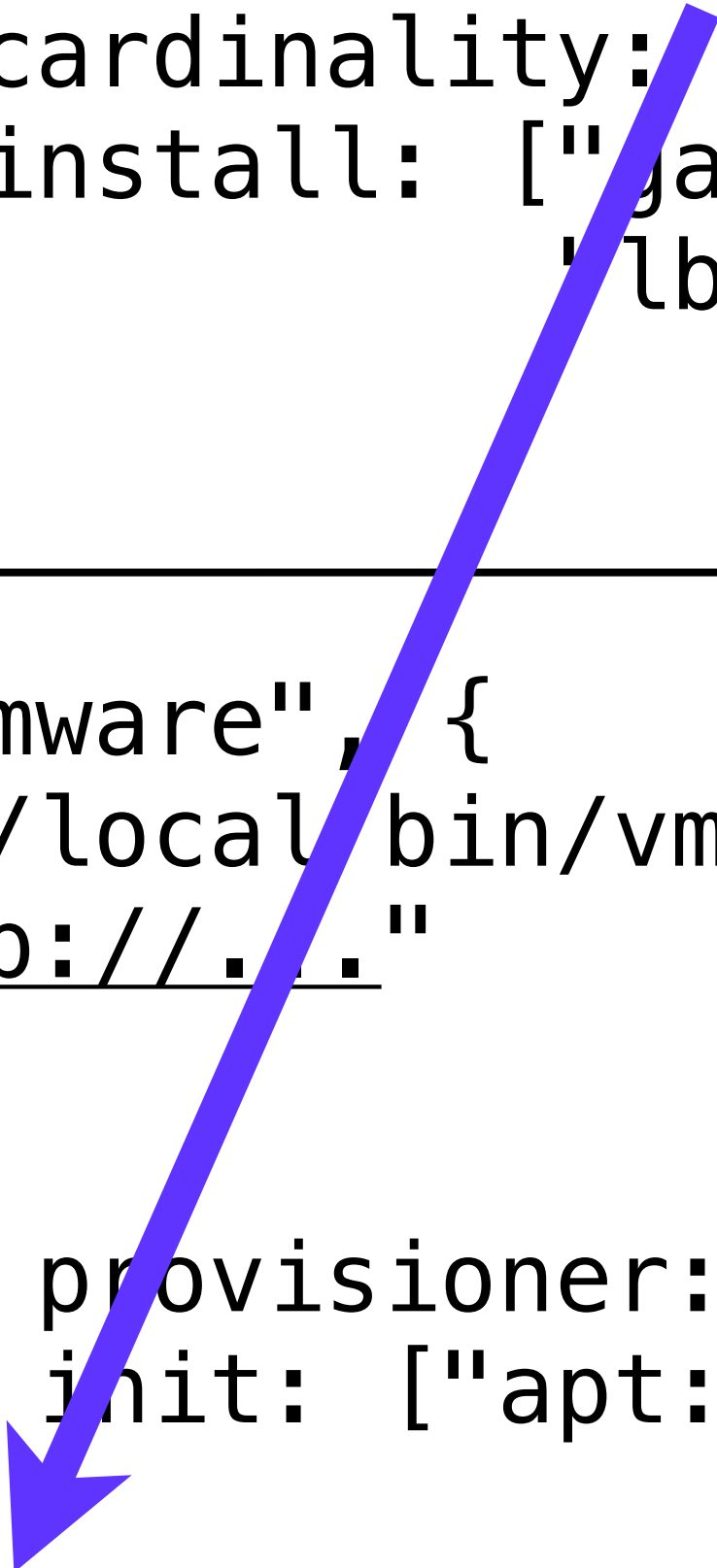
System

```
provisioner "vmware", {                    Env
  vmrun: "/usr/local/bin/vmrun",
  ubuntu: "http://..."
}

base "ubuntu", provisioner: "vmware:ubuntu",
                init: ["apt:emacs23-nox"]

base "appserver", inherit: "ubuntu",
                init: ["sculptor-agent"]
```

```
base "java-server", {
  provisioner: "ec2:#{useast_small_32bit}",
  init:        ['chef:role[java_server]']
}

base "ruby-server", {
  provisioner: "ec2:#{useast_small_32bit}",
  init:        ['chef:role[ruby_server]']
}

base "oracle", {
  provisioner: ["rds", {
                storage_size: 10,
                instance_class: "db.m1.small",
                engine: "oracle-se1",
                username: "core",
                password: "core"
              }]

}
```

```
$ git clone git@repo/frontend-atlas.git
$ cd frontend-atlas
$ atlas converge
```

So we have a way to spin up **an** environment!

```
system "frontend",
    external: "http://repo/frontend/prod/front.rb"
```

```
system "frontend",
    external: "http://repo/frontend/prod/front.rb"

system "api",
    external: "http://repo/api/prod/api.rb"

system "backend",
    external: "http://repo/backend/prod/gifts.rb"

system "data",
    external: "http://repo/data/prod/rcmd.rb"
```

```
system "giftudi"
  system "frontend",
        external: "http://repo/frontend/prod/front.rb"

  system "api",
        external: "http://repo/api/prod/api.rb"

  system "backend",
        external: "http://repo/backend/prod/gifts.rb"

  system "data",
        external: "http://repo/data/prod/rcmd.rb"
end
```

http://git/activity.git/blob_plain/prod:/model/activity.rb

http://git/activity.git/blob_plain/reshard:/model/activity.rb

```
$ atlas -e ec2 converge
```

http://github.com/ning/atlas

http://github.com/ning/galaxy

http://github.com/pierre/galaxy

http://github.com/brianm/sculptor

http://github.com/NessComputing/galaxy

http://github.com/dain/galaxy-server

http://github.com/giftuddi