

redgate
ingeniously simple



Zero Downtime Deployment Golden Rules

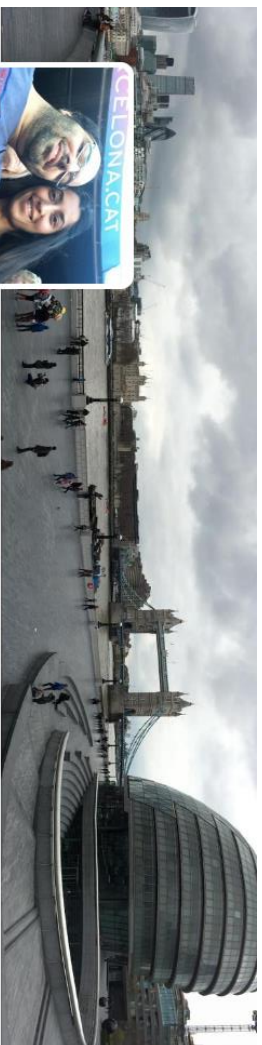
Tugberk Ugurlu

Redgate Software

@tourismgeek

<http://tugberkugurlu.com>

#itakeunconf



Tugberk Ugurlu

@tourismgeek

Web Guy, Coder at @redgate, Microsoft MVP & HTTP maniac.

Cambridge, UK

tugberkugurlu.com

Joined September 2010

1,000 Photos and videos

TWEETS 24.1K
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LIKES 7,076
LISTS 1

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Tugberk Ugurlu @tourismgeek · Feb 26
What I have been spending my nights on for a while is coming together nicely, it's still early but have a look: zleek.com

[@tourismgeek](https://twitter.com/tourismgeek)

tugberkugurlu.com

github.com/tugberkugurlu

stackoverflow.com/users/463785/tugberk

Having a Look at dotnet CLI Tool and .NET Native Compilation in Linux

dotnet CLI tool can be used for building .NET Core apps and for building libraries through your development flow (compiling, NuGet package management, running, testing, etc.) on various operating systems. Today, I will be looking at this tool in Linux, specifically its native compilation feature.

2016-01-03 18:20
Tugberk Ugurlu

ASP.NET 5 ASP.NET 5 LINK

I have been following ASP.NET 5 development from the very start and it has been an amazing experience so far. This new platform has seen so many changes both on libraries and concepts throughout but the Digest of all is about to come. The new command line tools that ASP.NET 5

Tugberk Ugurlu

Developer Program Member
Cambridge, UK
Joined on 10 Jul 2010

306 Followers 821 Following 205 Repositories

Contributions 3 Public activity

Popular repositories

- GenerelRepository 85 stars
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- red-gate/SQLAutomationPack 0 stars
- red-gate/cadence 0 stars
- red-gate/lightningworks 0 stars

Contributions heatmap showing activity from 2010 to 2016.

Tugberk Ugurlu

24,933 Reputation

2013 2014 2015 2016

14.4k Reputation

25,000 Rep

28 Badges

153 Questions

30/50 Votes

108 Posts Edited

16 1/2 Badges

1,515 Votes Cast

Answers (4/6)

- 0 ASP.NET 5 (Web) and Config for dev(s) dependencies
- 1 How to make Kestrel update on fly with Visual Studio?
- 0 Which web server should be used in production for asp.net 5.0...
- 0 Unable to find and add an ASP.NET 5 Class Library project...
- 0 No suitable "Program" type for an entry point

Reputation (24,933)

10 -10

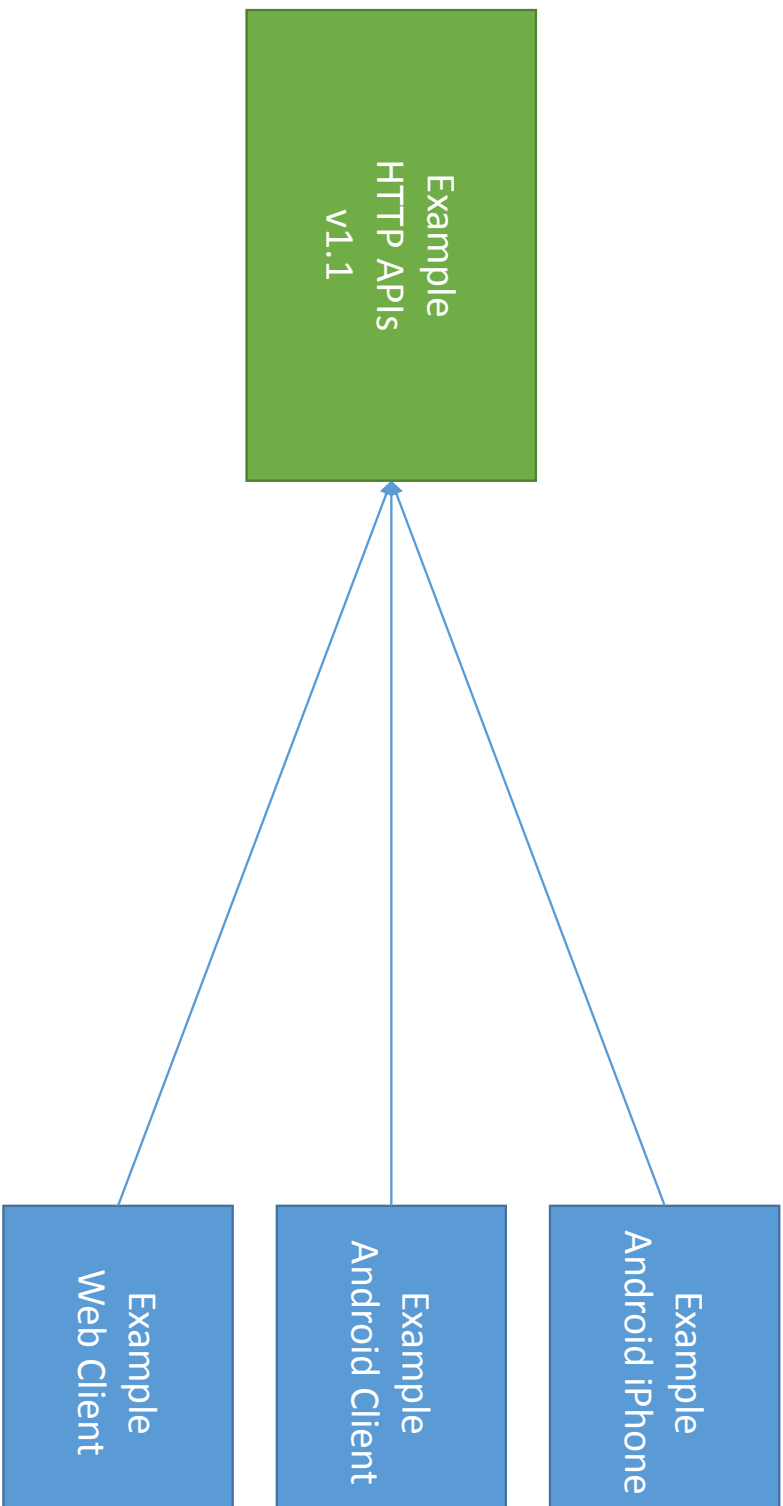
10 -10

10 -10

10 -10



[@redgate](https://www.instagram.com/redgate)



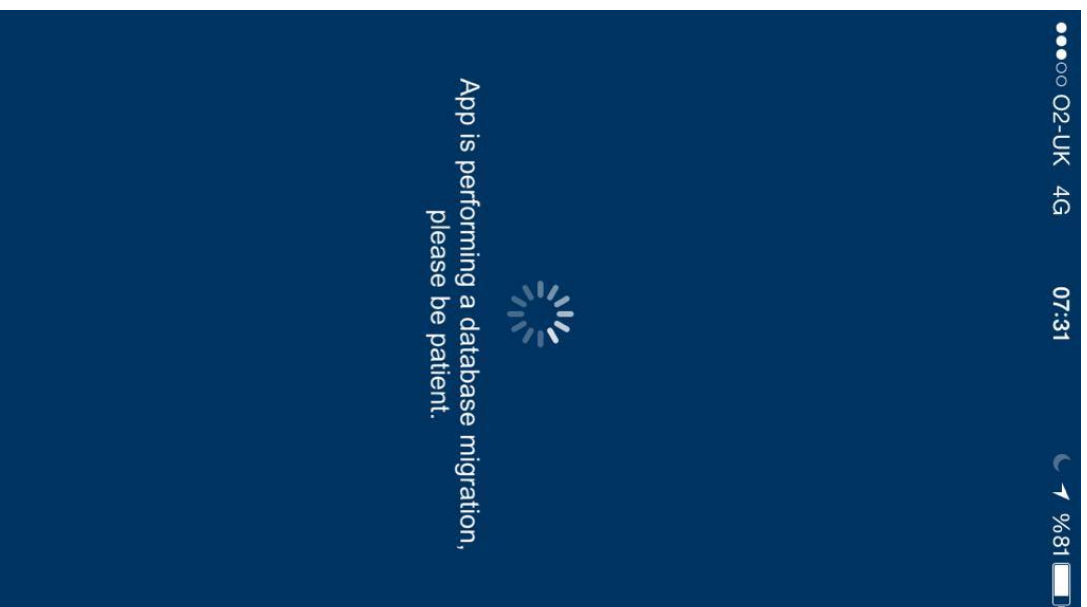
Why Should I Care?

#itakeunconf



#itakeunconf

<http://customers.agriya.com/products/private-shop/features/maintenance-course>



#itakeunconf

<https://twitter.com/tourismgeek/status/580270772402393088>

Continuous Delivery

#itakeunconf



#itakeunconf

Type of Products

#itakeunconf

Type of Applications

- HTTP Services
- Web Sites

その結果、
→ 2. 3.



Write Down the Deployment Strategy

#itakeunconf

Why

In a modular distributed system, coming up with a good deployment strategy is vital to be able to release frequently, automatically and with no downtime. This will involve a few moving parts to get it right and cover the cases. As it has somewhat complex nature, the first step will be to document the strategy before scripting it.

Scope

- The initial documentation will not cover corner cases. These can be added along the way.
- We will assume we will only have production environment, not QA, test, etc.
- We will assume deploying directly to production, not staging. In other words, blue-green deployments are out of scope here.
- Hot-fixes on previous releases. Hot-fixes can be applied on `release-<SEWER>` branches but deployments here are out of scope for now.

Draft

Parameters

Script out the Deployment Strategy

#itakeunconf

 tugberkugurlu push to ECR on TAG builds

c7a87f9 on Feb 25

1 contributor

54 lines (46 sloc) | 1.86 KB

Raw

Blame

History



```
1 #!/bin/bash
2
3 for i in "$@"
4 do
5     case $i in
6         -v=*|--version=*)
7             VERSION="${i#*=}"
8             shift # past argument=value
9             ;;
10            *)
11                # unknown option
12            ;;
13        esac
14    done
15
16    echo "VERSION = ${VERSION}"
17
18    if [ -z "$VERSION" ];
19    then
20        echo "'version' needs to be specified through '--version' parameter."
21        exit 1
22    fi
23
24    declare -A repositoryMapping=( ["docker-nginx.dockerfile"]="zleek-web-client-nginx" ["docker-landing.dockerfile"]="zleek-landing" ["docker-
25    scriptsDin=$( cd "$( dirname "${BASH_SOURCE[0]}" )" && pwd )
26    rootDir=$(dirname $scriptsDin)
27    dockerFiles=${rootDir%/*}/*.dockerfile
```

#itakeunconf

Release Management Software

<https://octopus.com/>

#itakeunconf

Dashboard - Octopus D x

Projects — TeamCity x

Home - OctoFX x

Home - OctoFX x

Home - OctoFX x

Home - OctoFX x

Home - OctoFX x

Guest

Dashboard

Environments

Projects

Library

Tasks









admin

Configuration

Dashboard

Configure dashboard

All Projects

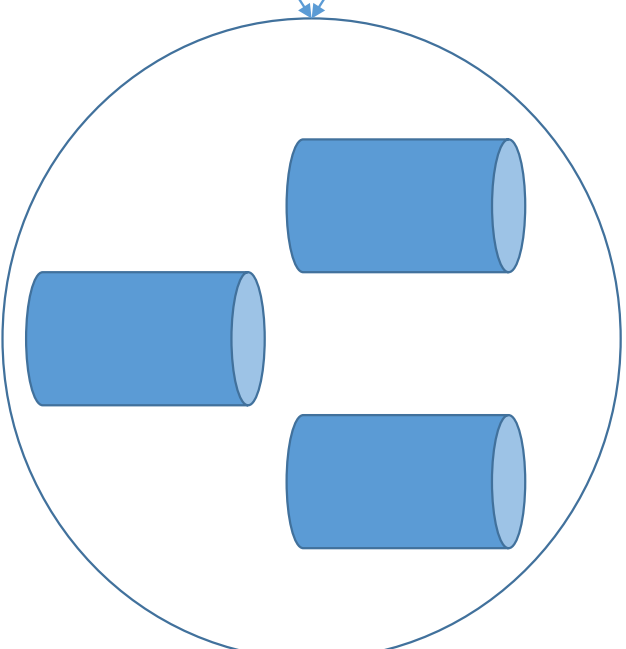
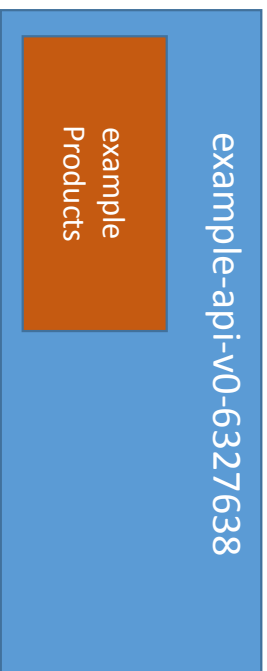
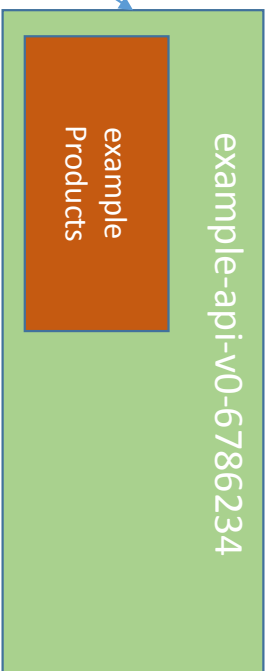
	Development	UAT	Staging	Production
OctoFX	 1.5 August 11th 2015	 1.5 August 11th 2015	 1.5 August 11th 2015	 1.5 August 11th 2015
OctoHR	 2.3 August 5th 2015	 2.2 August 5th 2015	 2.2 August 5th 2015	 2.1 August 5th 2015

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True Staging Environment

#itakeunconf

v0.example.com



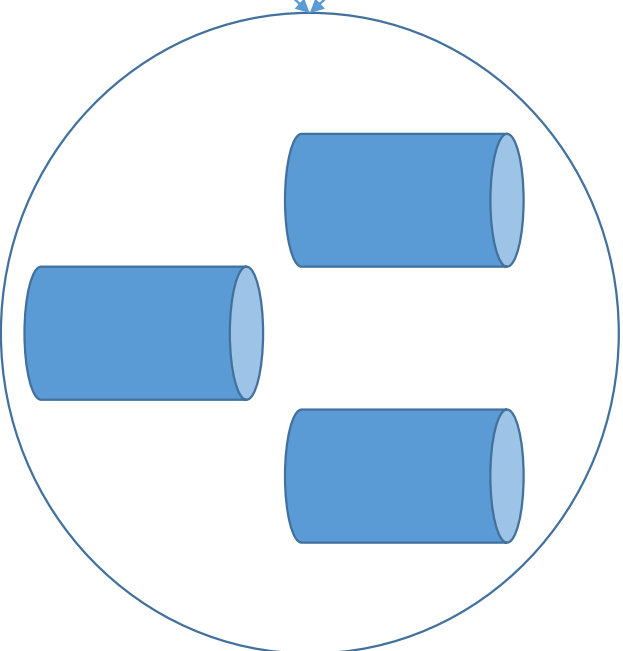
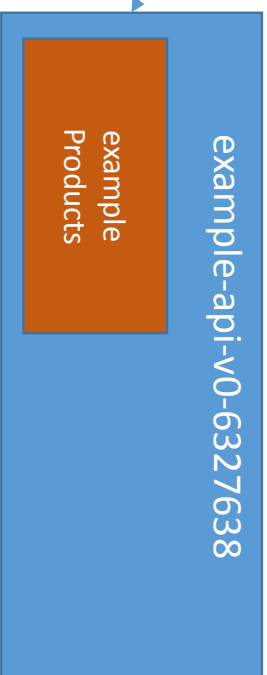
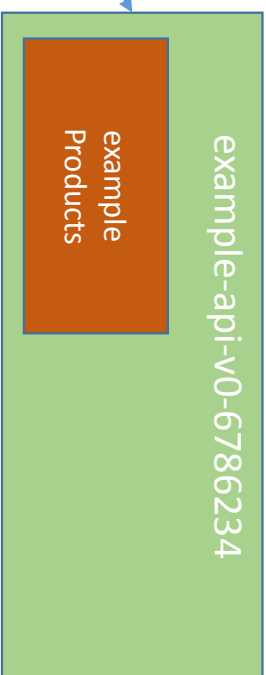
Blue-green Deployment

<http://martinfowler.com/bliki/BlueGreenDeployment.html>

#itakeunconf

v0.example.com

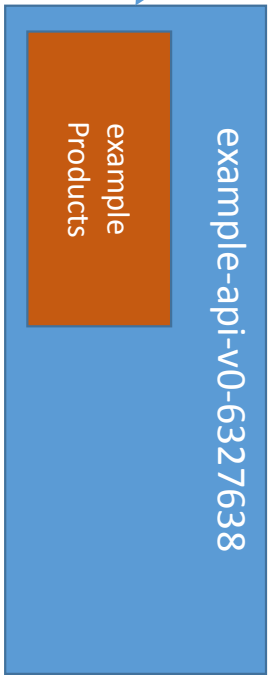
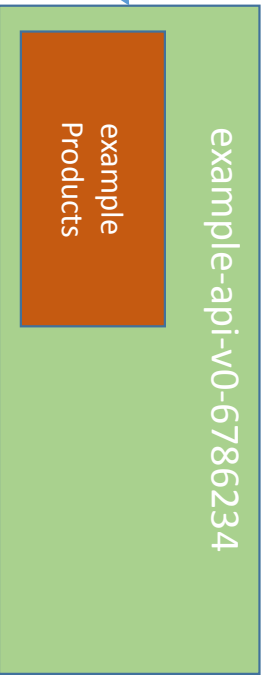
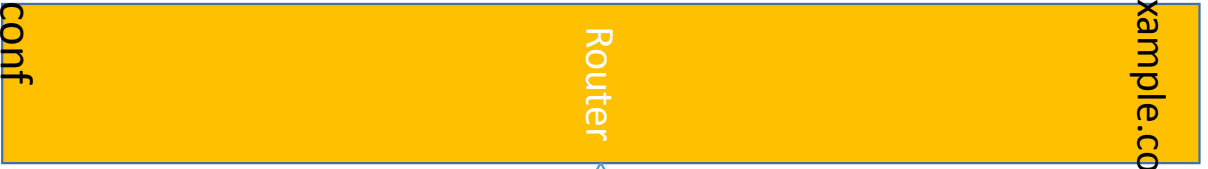
#itakeunconf



Drain Requests

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v0.example.com

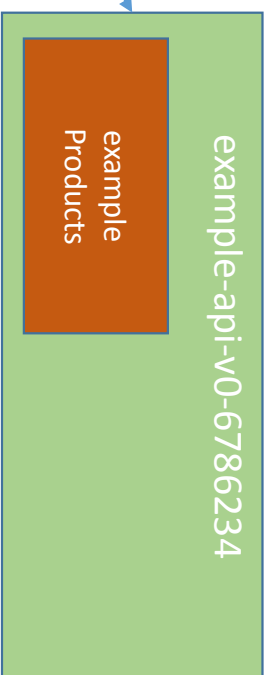


#itakeunconf

v0.example.com

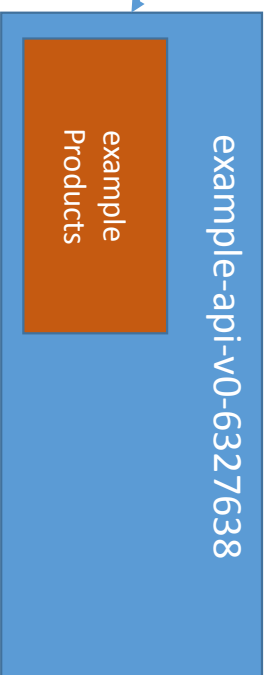


Router



example-api-v0-6786234

example Products



example-api-v0-6327638

example Products

#itakeunconf

SemVer Your Software

<http://www.tugberkugurlu.com/archive/versioning-software-builds-based-on-git-tags-and-semantic-versioning-semver>

#itakeunconf

SemVer Your Software

- See semver.org
- Support 2 Major versions of the HTTP Service, not 1, not 3.
- Define a support policy for support lifetime for versions

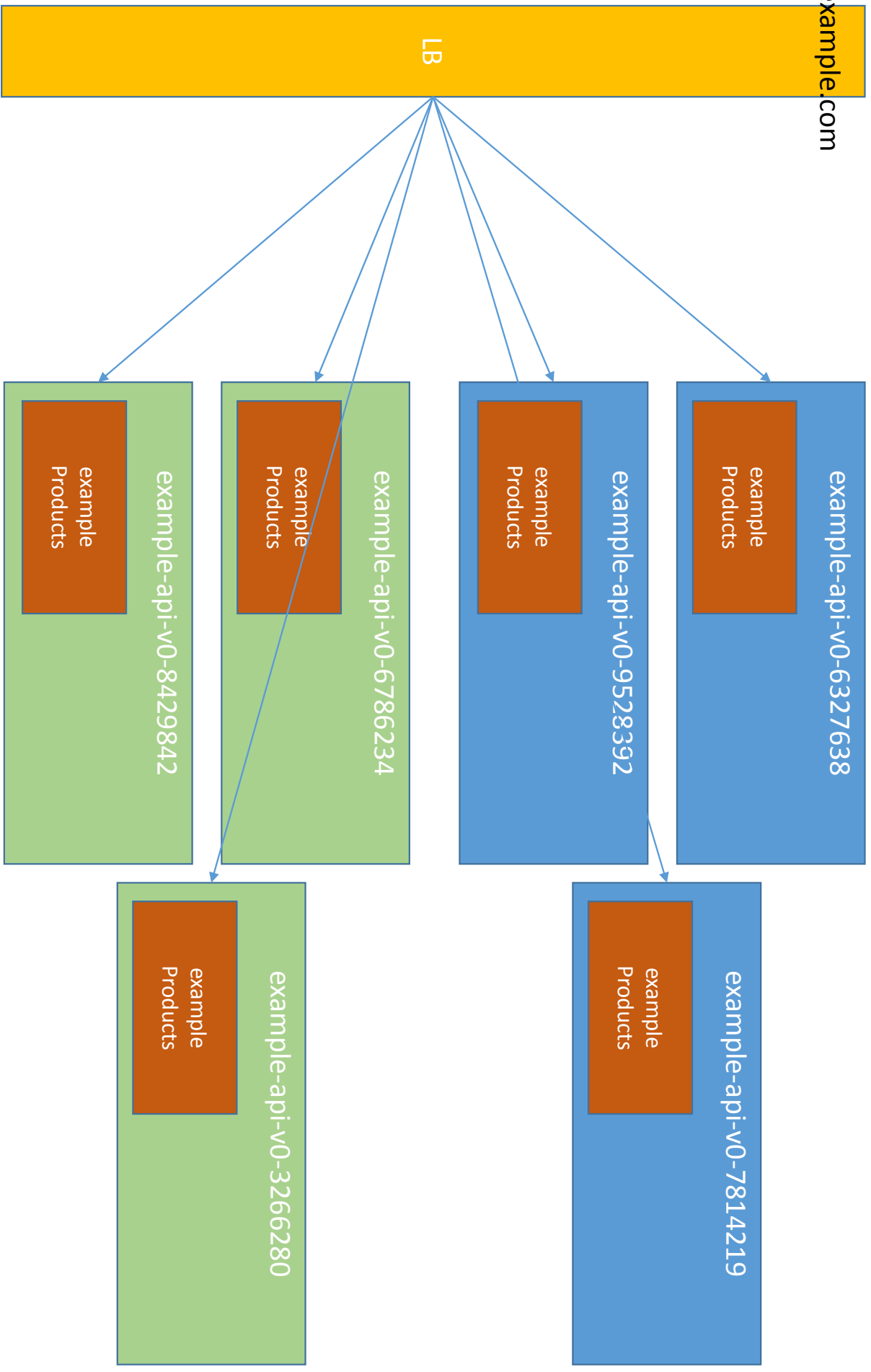
Type of Changes

- Patch: No user facing changes, all internal.
- Minor: Add functionality in a backwards-compatible manner
- Major: Introducing incompatible changes
- See semver.org for more information

Minor-Patch Releases

- No breaking changes

v0.example.com



DEMO

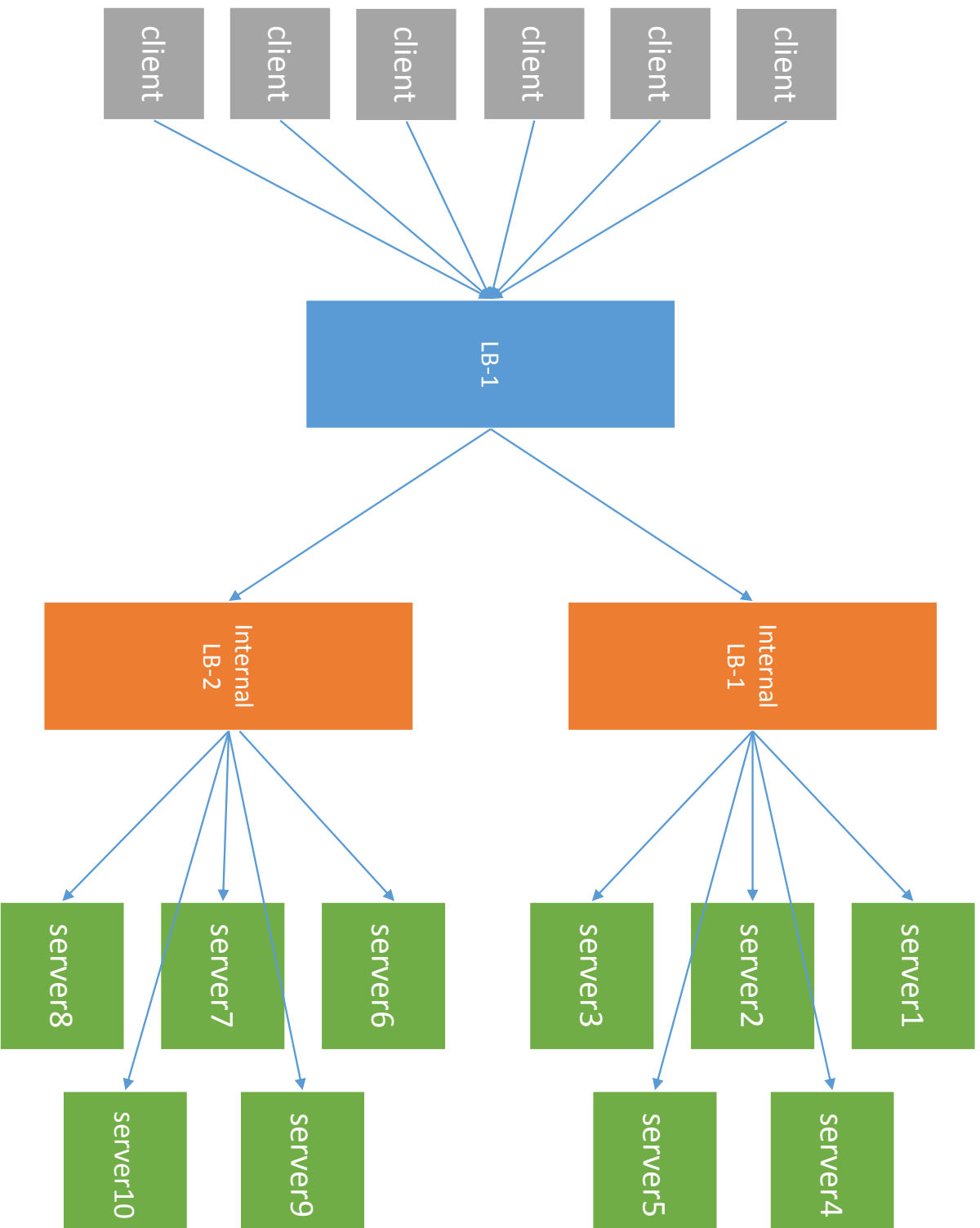
<https://github.com/tugberkugurlu/aspnetcoresamples/tree/itakeu16/haproxy-zero-downtime-sample>

#itakeunconf

HAProxy Config Reload

<http://engineeringblog.yelp.com/2015/04/true-zero-downtime-haproxy-reloads.html>

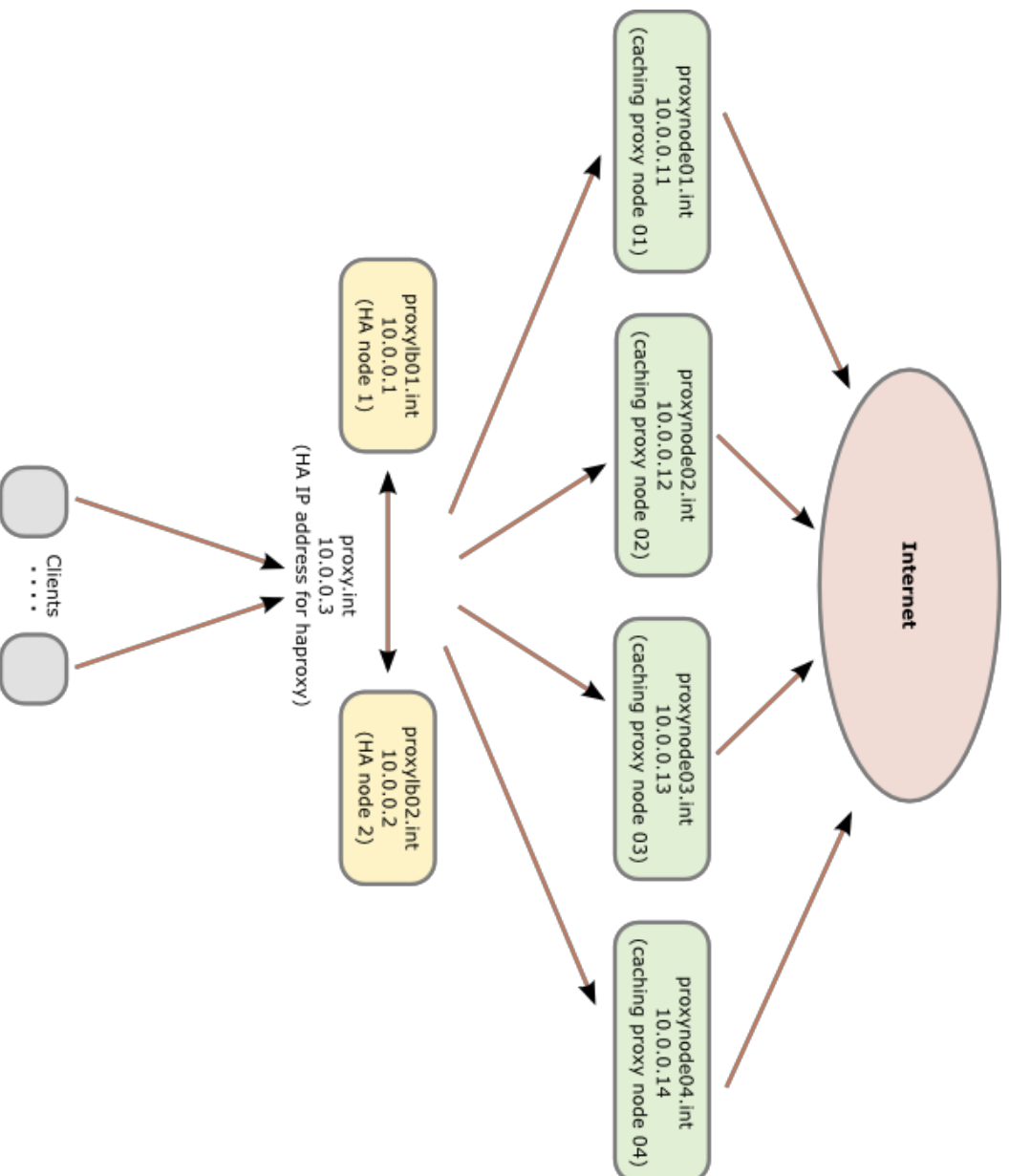
#itakeunconf



Multiple Load Balancer Nodes

<http://robert.penz.name/386/howto-setup-a-haproxy-as-fault-tolerant-high-available-load-balancer-for-multiple-caching-web-proxies-on-rhelcentos/>

#itakeunconf

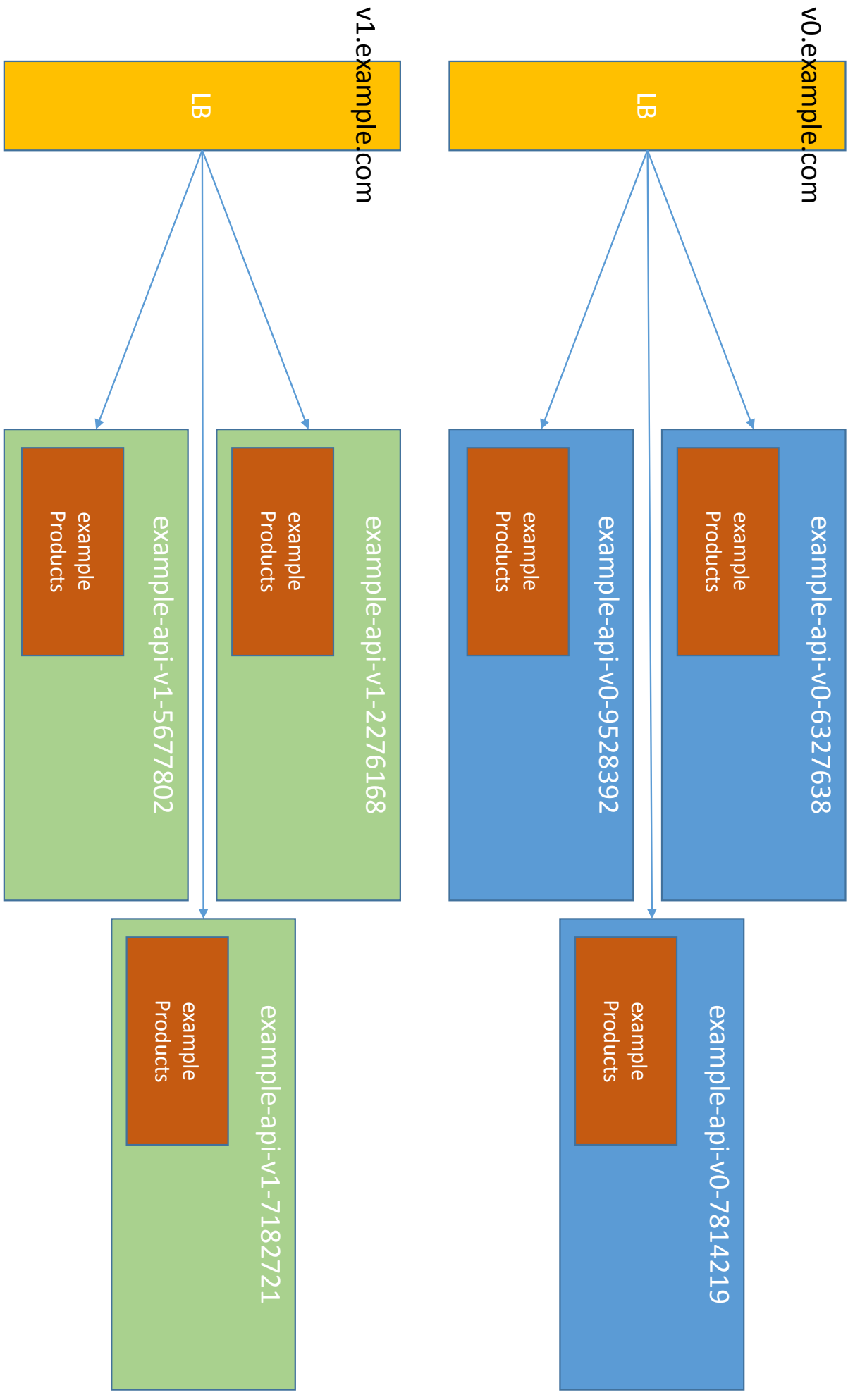


#itakeunconf

<http://robert.penz.name/386/howto-setup-a-haproxy-as-fault-tolerant-high-available-load-balancer-for-multiple-caching-web-proxies-on-rhelcentos/>

Major Releases

- Breaking Changes
- First Major Release
- Non-first Major Releases



Prefer Fast-forward Database Changes

#itakeunconf

Id	Make	Model	Colour
1	Renault	Clio	Red
2	Mercedes	GLA	Black
3	Volkswagen	Polo	White
4	Toyota	Yaris	Yellow

V1

```
private Car carBuilder(SqlDataReader reader)
{
    return new Car
    {
        Id = int.Parse(reader["Id"].ToString()),
        Make = reader["Make"] is DBNull ? null : reader["Make"].ToString(),
        Model = reader["Model"] is DBNull ? null : reader["Model"].ToString(),
        Colour = reader["Colour"] is DBNull ? null : reader["Colour"].ToString()
    };
}
```

Id	Make	Model	Colour
1	Renault	Clio	Red
2	Mercedes	GLA	Black
3	Volkswagen	Polo	White
4	Toyota	Yaris	Yellow

V2

```
private Car carBuilder(SqlDataReader reader)
{
    return new Car
    {
        Id = int.Parse(reader["Id"].ToString()),
        Make = reader["Make"] is DBNull ? null : reader["Make"].ToString(),
        Model = reader["Model"] is DBNull ? null : reader["Model"].ToString()
    };
}
```

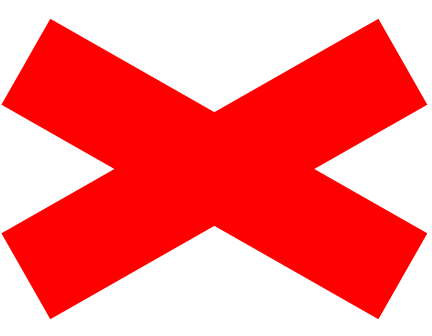
#itakeunconf

Do Not Override Client Side Assets

#itakeunconf


```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8" />
  <meta name="viewport" content="width=device-width" />
  <title>Example Page</title>
  <link href="//assets.example.com/main-page.css" rel="stylesheet" />
</head>
<body>
  <script src="//assets.example.com/main-page.js"></script>
</body>
</html>
```

V1



```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8" />
  <meta name="viewport" content="width=device-width" />
  <title>Example Page</title>
  <link href="//assets.example.com/main-page.css" rel="stylesheet" />
</head>
<body>
  <script src="//assets.example.com/main-page.js"></script>
</body>
</html>
```

V1.1

#itakeunconf

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width" />
    <title>Example Page</title>
    <link href="//assets.example.com/v1/main-page.css" rel="stylesheet"/>
  </head>
  <body>
    <script src="//assets.example.com/v1/main-page.js"></script>
  </body>
</html>
```

V1

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width" />
    <title>Example Page</title>
    <link href="//assets.example.com/v1.1/main-page.css" rel="stylesheet"/>
  </head>
  <body>
    <script src="//assets.example.com/v1.1/main-page.js"></script>
  </body>
</html>
```

V1.1

#itakeunconf

Be Aware of the Context

#itakeunconf

Be Aware of the Context

- Cookies
- Sessions
- Authentication Tokens

Sticky Sessions

<http://blog.haproxy.com/2012/03/29/load-balancing-affinity-persistence-sticky-sessions-what-you-need-to-know/>

Helpful Tools

- HAProxy
- Octopus Deploy
- node-semver CLI
- Docker
- Docker Cloud (a.k.a. Tutum)
- DLM Automation Tools from Redgate