

KAZOO

An Elegant Distributed Open-Source Stack for Telecom

Hello!

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- mc_ on Freenode (#2600hz and others)
- Erlang Enthusiast

2600hz

- Founded in 2009 in San Francisco, CA
- Open Source
- 2 main projects: blue.box and Kazoo
- 20+ employees now

Let's talk about telephony!

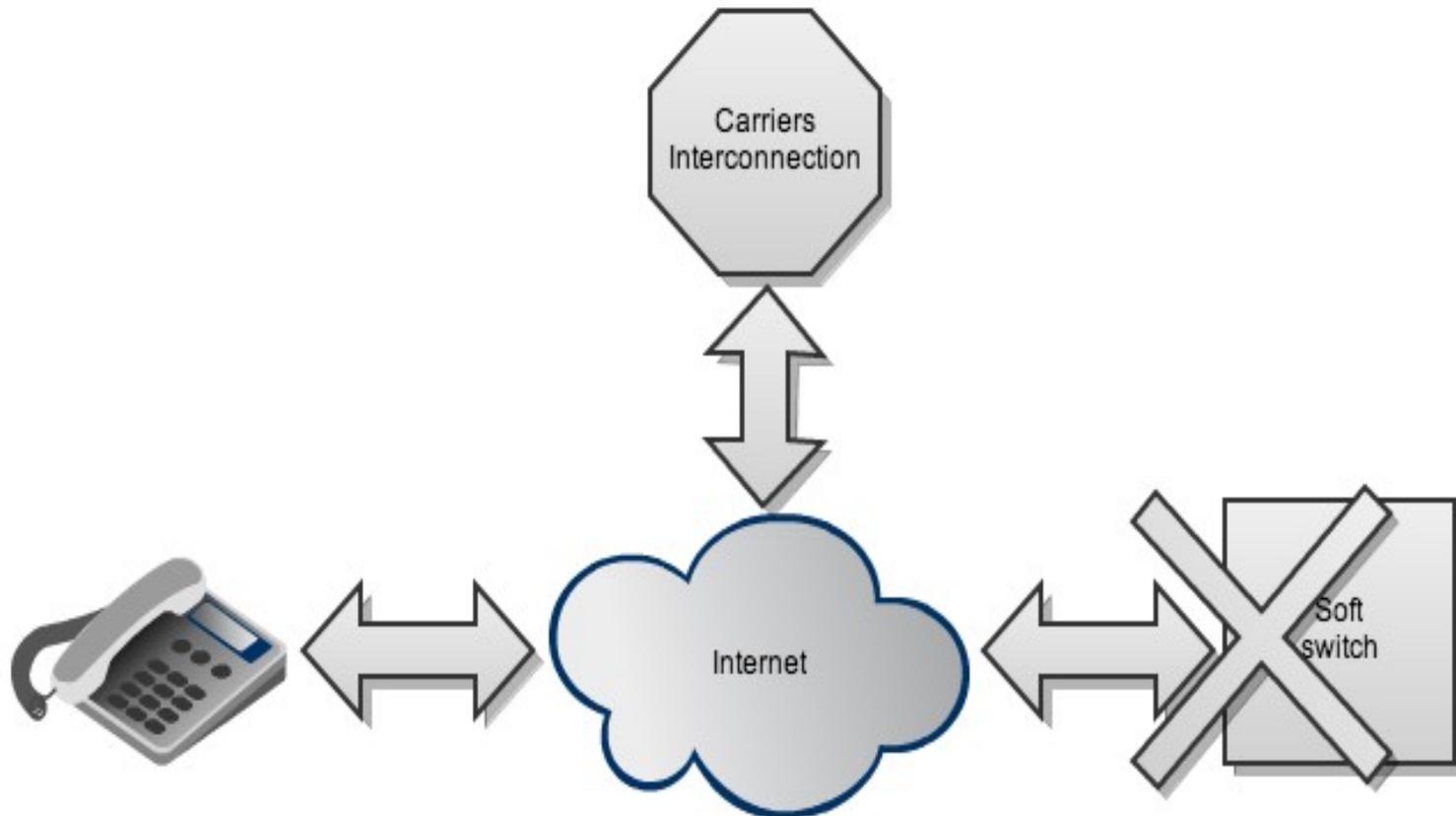


What we see people doing...

- Setup Asterisk/FreeSWITCH/FreePBX
- Get first customers
- Things are going well! Add more customers!



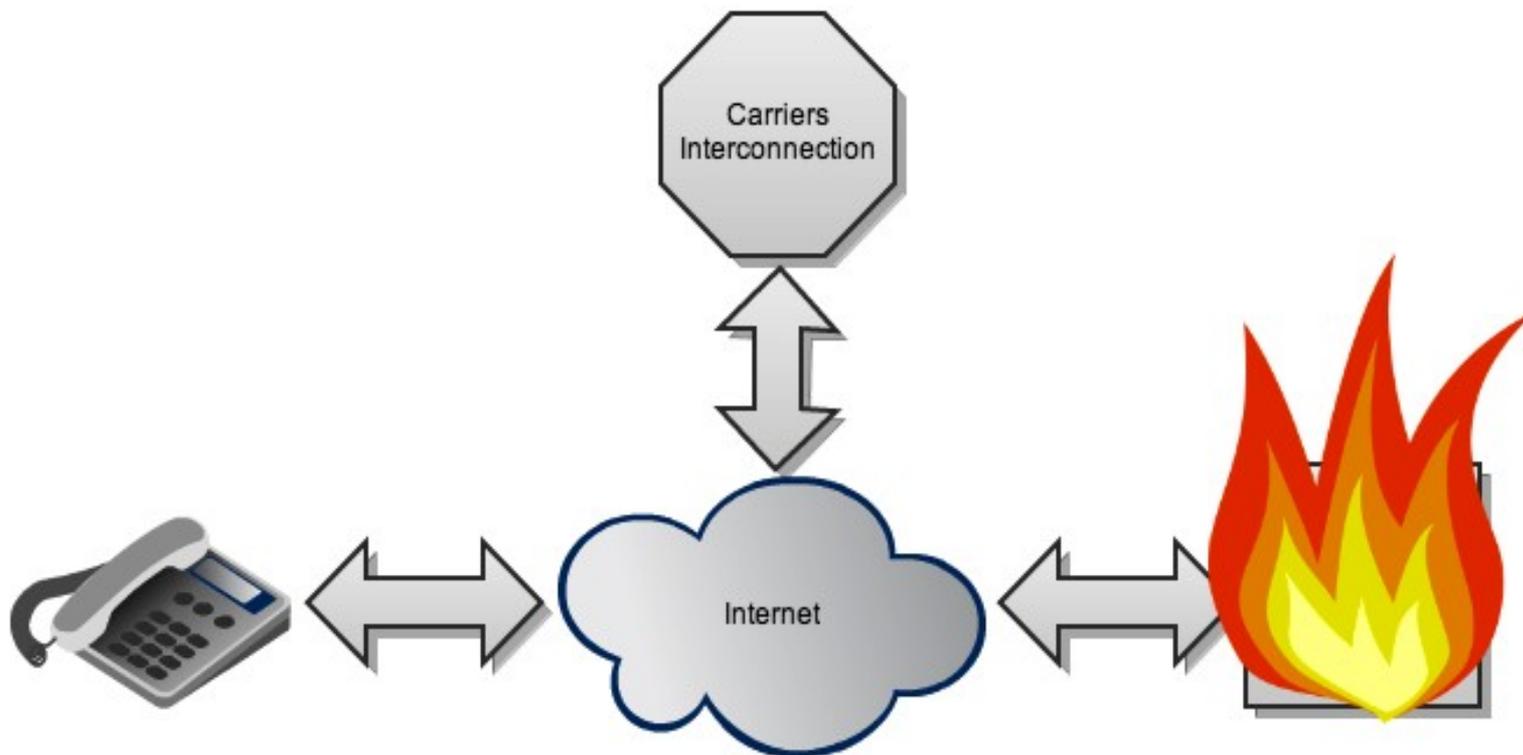
This is what your architecture looks like



Server crashes...Customers are angry!

- Set up a redundant server + load balancer
- Hook up to a database
- Set up Master/Slaves

The whole data center is down...for 4 hours!



Redundant Datacenter setup

- Load balancer setup must be modified
- Server setup must be modified
- Database setup must be redesigned

You've earned TONS of work

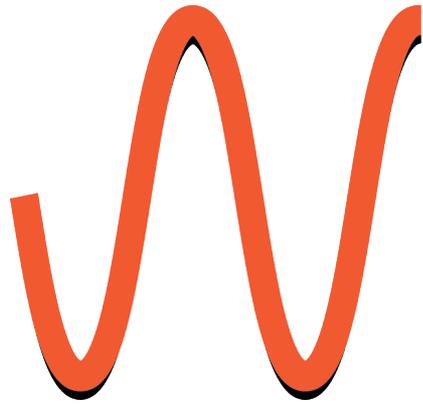
But wait there is more!

- How do you go international?
- How do you monitor all these servers?
- How do you manage database growth?
- How do you track usage?
- Reporting?
- Add New Features?
- Manage Upgrades? Versions?
- Software builds?
- Operating System Upgrades?
- Data Backups?
- IPTables and Security
- Encryption
- ...

What to do?

- Broadsoft / Metaswitch
 - Reliability = HIGH
 - Cost = \$\$\$\$
- Asterisk/FreeSWITCH/FreePBX
 - Reliability = LOW
 - Cost = \$

Enter:



2600hz

CLOUD TELECOM

Kazoo to the rescue!

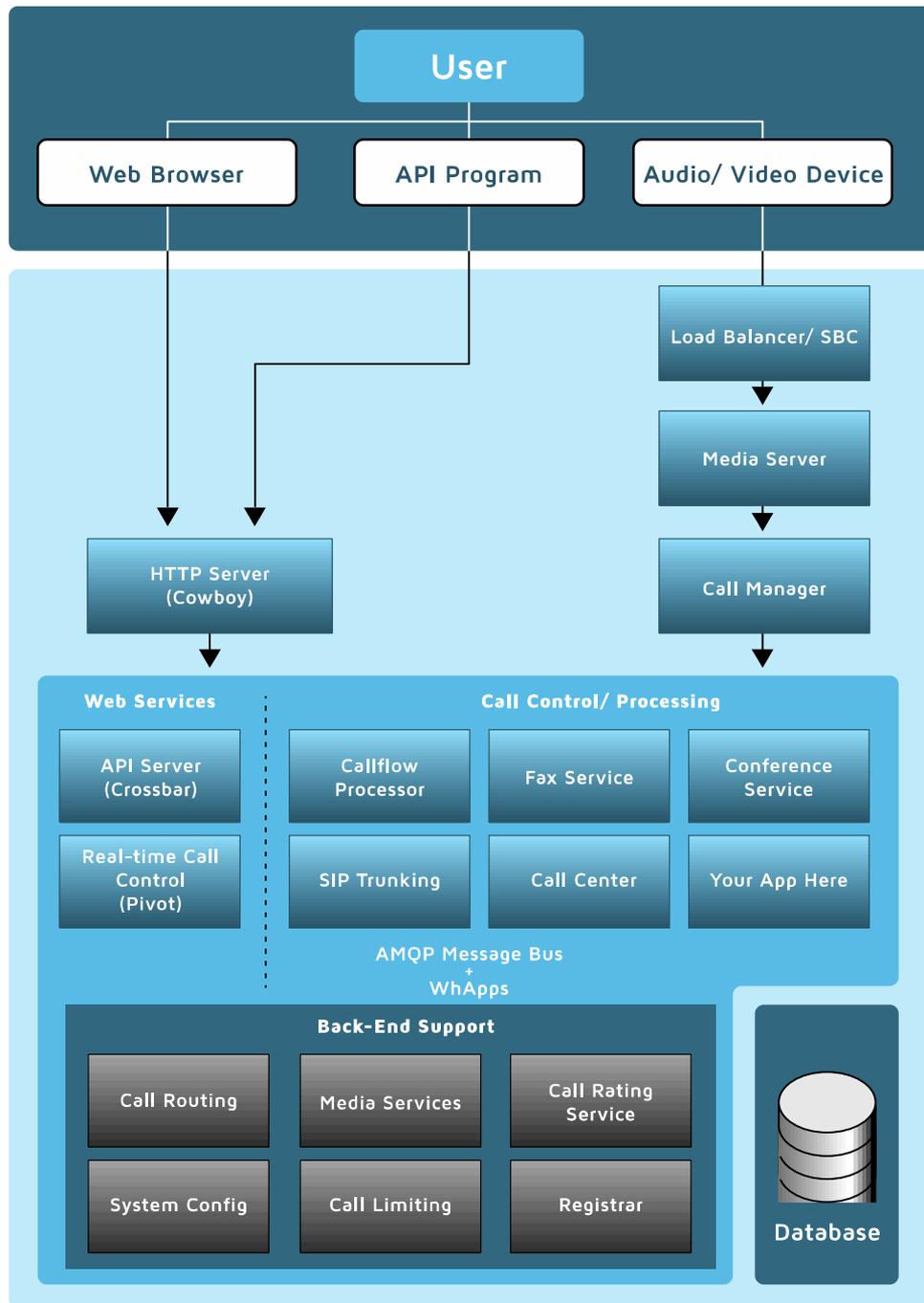
- Designed and tested to be:
 - Redundant
 - Distributed
 - Scalable
- 100% configurable via API
- Extensive Feature Set

Our goals

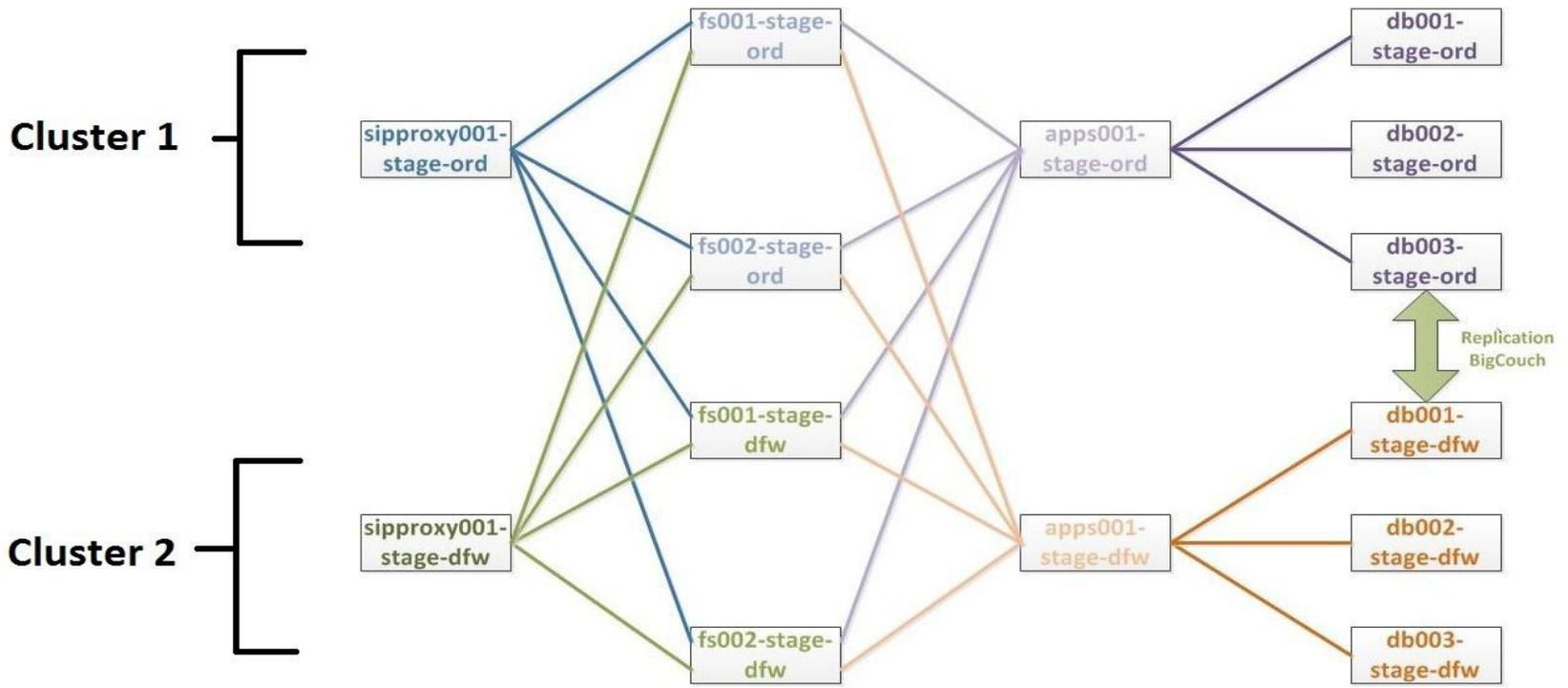
- Easy to install: Chef
- Easy to use: pre-built GUI
- Easy to differentiate: Open Source

How does it work?

- SIP engine: Kamailio
- Media engine: FreeSWITCH
- Erlang/Javascript stack: Kazoo/KazooUI
- Messaging Bus: AMQP via RabbitMQ
- Distributed NoSQL database: BigCouch



Our architecture



Load Balancer

Kamailio!

- Receives SIP traffic
- Load balancing
- Fixes NAT / SDP
- Handles Registration / BLF / Options

Load Balancer

Why We Like Kamailio

- Friendly Naming Conventions
- Active Development
- Integrations!

Load Balancer - EVOLVED

Specifically, we are building a module for Kamailio to:

- Connect directly to AMQP
- Allow Kazoo to communicate to Kamailio
- Generate SIP packets from Kazoo
 - * Control BLF
 - * Control Registrations
 - * Control OPTIONS pings

Media Engine

FreeSWITCH

- Media Server
- Handles SIP Invites and Media
- No local configuration

Erlang Call Manager

Written in Erlang

- Abstracts and clusters FreeSWITCH
- Feeds AMQP queues
- Sends commands to FreeSWITCH

Whapps

Written in Erlang

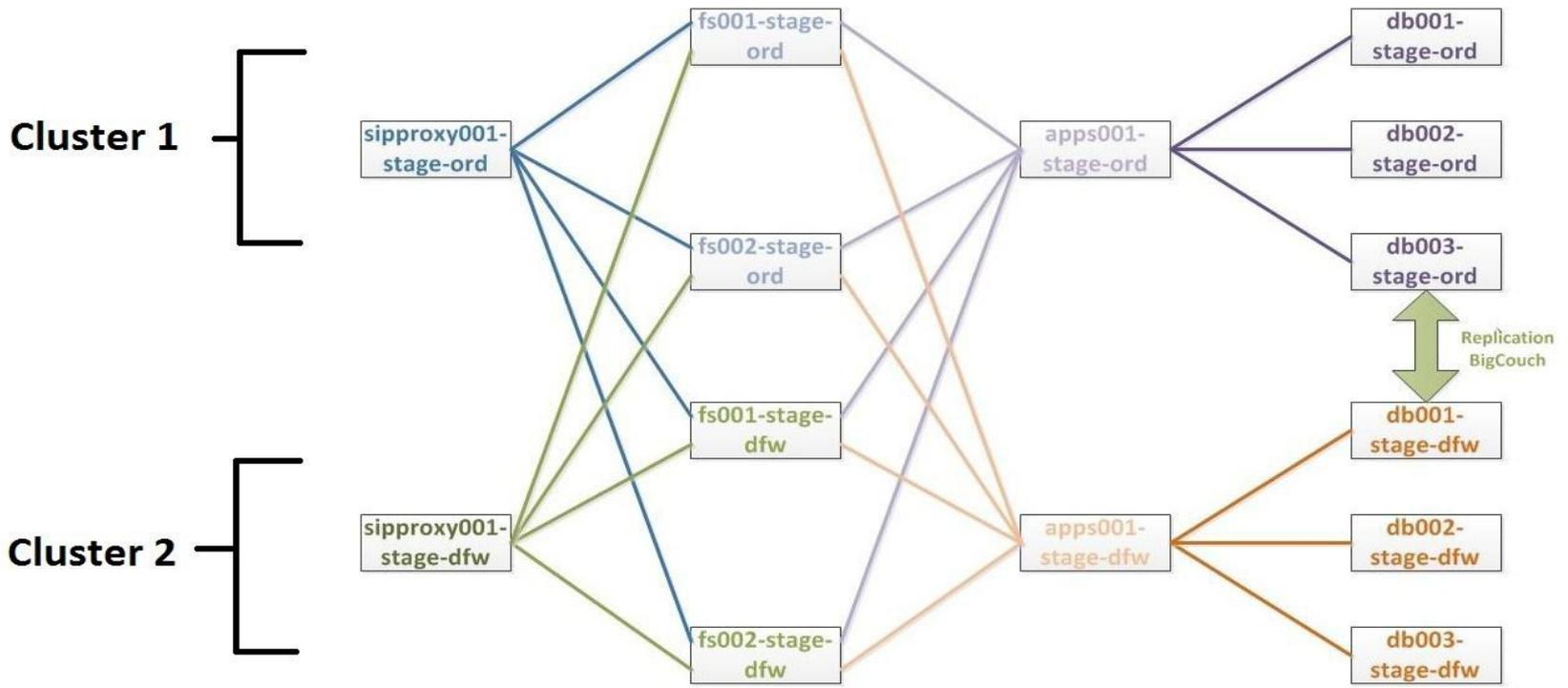
- Brain of the operation
- Responds to requests (API, Calls, etc...)
- Designed to be redundant

BigCouch

Written and maintained by Cloudant

- Based on Apache CouchDB
- Distributed NoSQL database (Dynamo)
- HTTP Requests

Our architecture



Simple as possible: our web interface

Written in Javascript

- Easy drag-and-drop
- Interacts via API
- Next Project: Monster

100% API based

- Everything is configurable via API
- Versioned (dev friendly!)
- Real Time

Thank you



How to contact us?

Web: <http://www.2600hz.com>

IRC: #2600hz @Freenode

Mailing Lists: 2600hz-dev 2600hz-users

Code: <https://github.com/2600hz/kazoo>