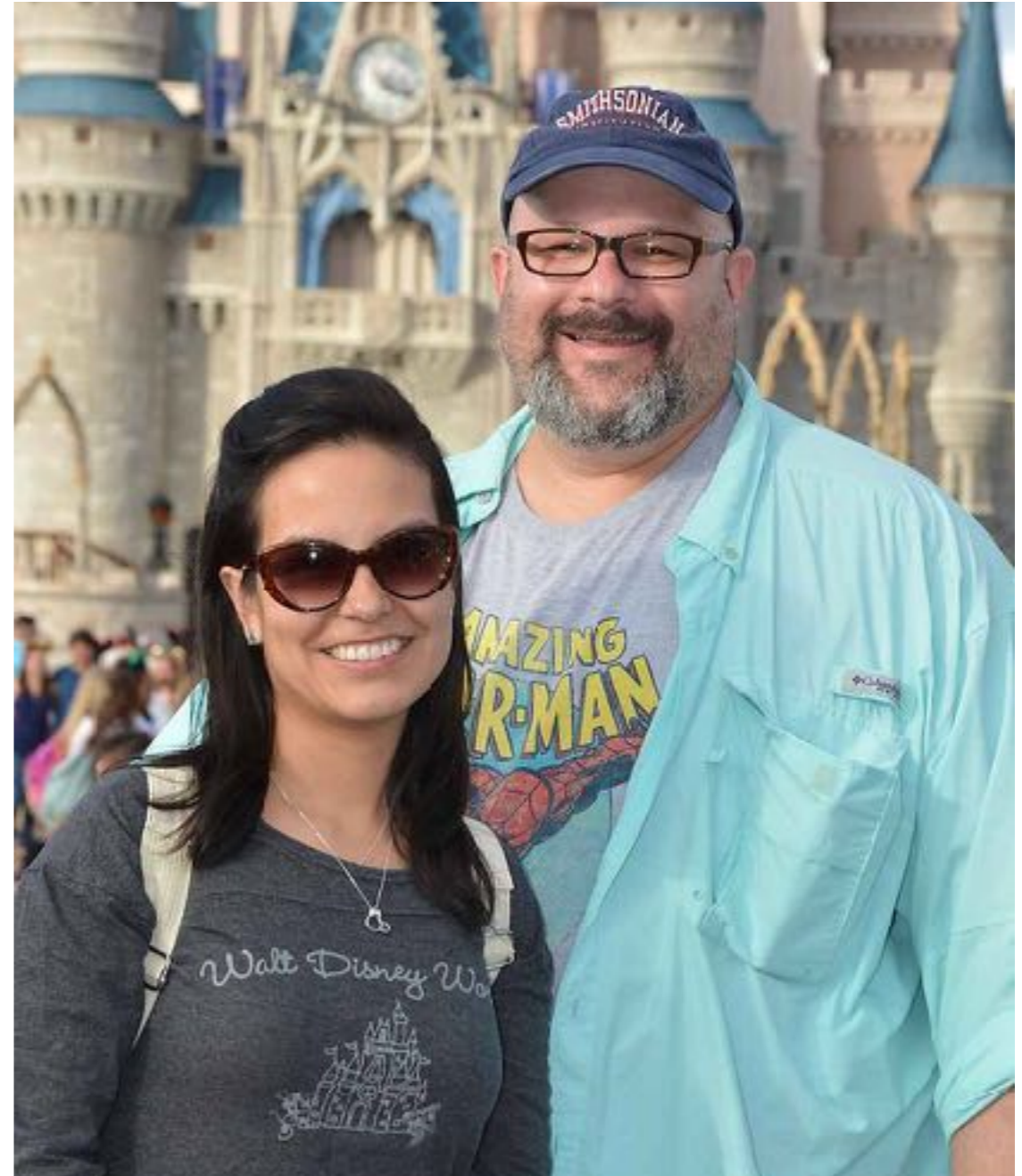# Why I Love Kamailio

Fred Posner

@fredposner I qxork.com

- How I started with Kamailio

- Things to love

- How we can do even better

Who am I?

- Fred Posner

- VoIP as main focus since 2003

- Based in USA

"There are no plans to make a tablet.
It turns out people want keyboards."

–Steve Jobs, 2003

For me, It started in 2003…

- Residential VoIP Carrier

- 10,000 end-points

- Broadsoft / Acme Packet

- Thundering Herd killed SBC

- Replace with openser & Asterisk
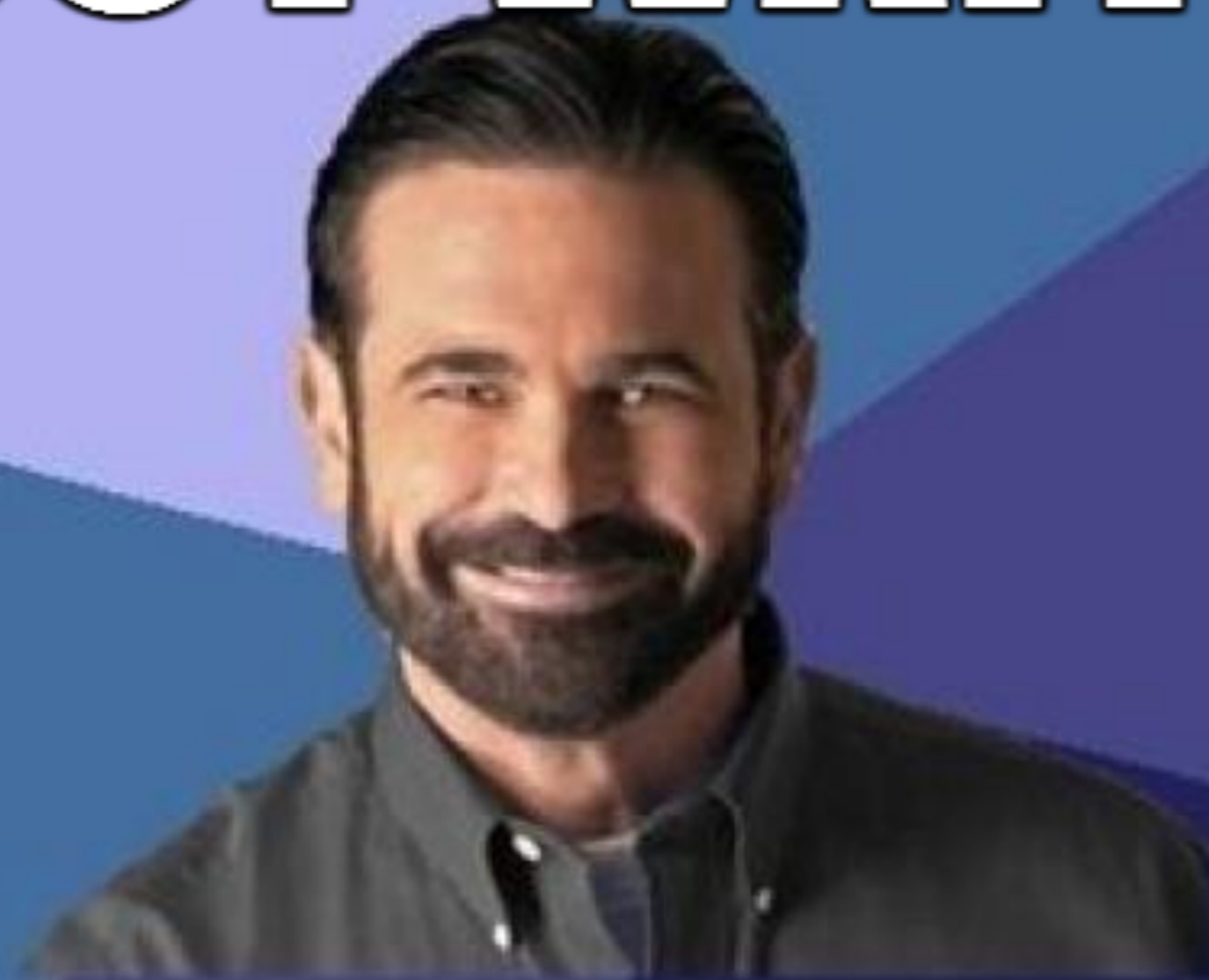

- and then in 2007…

RIP Sunrocket

Rapid Growth

- 10k - 60k in 3 months

- Cost Savings

  - PBX licensing: $1.6m ($32/seat)

  - SBC licensing: > $500k

  - 600% growth? Priceless

BUT WAIT,

THERE'S MORE!

Not just cost savings…

- **High Availability**

- Internal Call Center

- Database Storage

- No Tomcat

- Multi-seat

- **NAT Issues Solved**

- Complete Control

- High Availability
(so nice, written twice)

KAMAILIO

Proudly mispronounced since 2008

Why I Love Kamailio

- Modular

- Fast

- Light

- *Plays well with others*

SIP Server Down?

- ```
  modparam("dispatcher", "ds_ping_interval", 30)
  modparam("dispatcher", "ds_probing_threshhold", 2)
  modparam("dispatcher", "ds_ping_reply_codes", "class=2;class=3")
  modparam("dispatcher", "ds_probing_mode", 1)
  ```

- event_route[dispatcher:dst-down]
  event_route[dispatcher:dst-up]

- ```
  event_route[dispatcher:dst-down] {
     xlog("L_ERR", "Destination down: $rm $ru ($du)\n");
     exec_msg("/usr/bin/perl pagerduty.pl 'trigger' '$du'");
     exec_msg("/usr/bin/perl sms.pl 'DOWN: $rm $ru ($du)'");
  }
  ```

```
top - 20:26:18 up 17 min,  1 user,  load average: 0.00, 0.05, 0.06
Tasks: 143 total,   1 running, 142 sleeping,   0 stopped,   0 zombie
%Cpu0  :   0.7 us,   0.7 sy,   0.0 ni, 98.7 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu1  :   1.9 us,   1.0 sy,   0.0 ni, 97.1 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu2  :   3.8 us,   0.3 sy,   0.0 ni, 95.8 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu3  :   0.3 us,   0.7 sy,   0.0 ni, 99.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
KiB Mem:    947748 total,    178924 used,    768824 free,      9876 buffers
KiB Swap:   102396 total,         0 used,    102396 free.     87660 cached Mem

  PID USER       PR  NI    VIRT    RES    SHR S  %CPU %MEM     TIME+ COMMAND
 2072 root       20   0    5112   2500   2100 R   1.0  0.3   0:00.48 top
 1892 kamailio   20   0   89460   6724   5932 S   0.7  0.7   0:00.14 kamailio
 1894 kamailio   20   0   89460   7324   6532 S   0.7  0.8   0:00.15 kamailio
   82 root       20   0       0      0      0 S   0.3  0.0   0:00.07 kworker/u8:2
 1413 root       20   0   11480   5008   4400 S   0.3  0.5   0:00.77 sshd
 1893 kamailio   20   0   89460   8080   7284 S   0.3  0.9   0:00.14 kamailio
 1895 kamailio   20   0   89460   7300   6508 S   0.3  0.8   0:00.14 kamailio
 1896 kamailio   20   0   89460   7292   6500 S   0.3  0.8   0:00.14 kamailio
 1897 kamailio   20   0   89460   7236   6444 S   0.3  0.8   0:00.14 kamailio
 1898 kamailio   20   0   89460   5680   4888 S   0.3  0.6   0:00.14 kamailio
 1899 kamailio   20   0   89460   7344   6552 S   0.3  0.8   0:00.14 kamailio
    1 root       20   0   23844   3972   2732 S   0.0  0.4   0:03.99 systemd
```

500cps

Raspberry pi 3

- Kamailio 5

- RTPENGINE

- Run in production?

- Speaking of PI…

WebRTC

- SIP over WebSocket on Kamailio

- Astricon 2013

- Raspberry Pi

HTABLE, huh, yeah.
What is it good for?
Absolutely everything.

-War (original lyrics)

HTABLE

- HTABLE added in 3.0 (2010)

- CPS via $shtcv (count values)?

  - ```
    modparam("htable", "htable",
    "cps=>size=8;autoexpire=10;updateexpire=0")
    ```

  - ```
    $var(cpsmax) = $(avp(dsattrs){param.value,cps});
    $sht(cps=>$ci) = $dd;
    $var(cps) = $shtcv(cps=>==$dd) / 10;
    if ($var(cps) >= $var(cpsmax)) {
        xlog("L_INFO","[$ci] $dd cps too high\n");
        return -1;
    }
    ```

"200 or 400. There is no 100."

-Yoda

Kamailio is about power.

Power

- To communicate
- To protect
- To scale
- To work how you work best

How can you help?

How the customer explained it

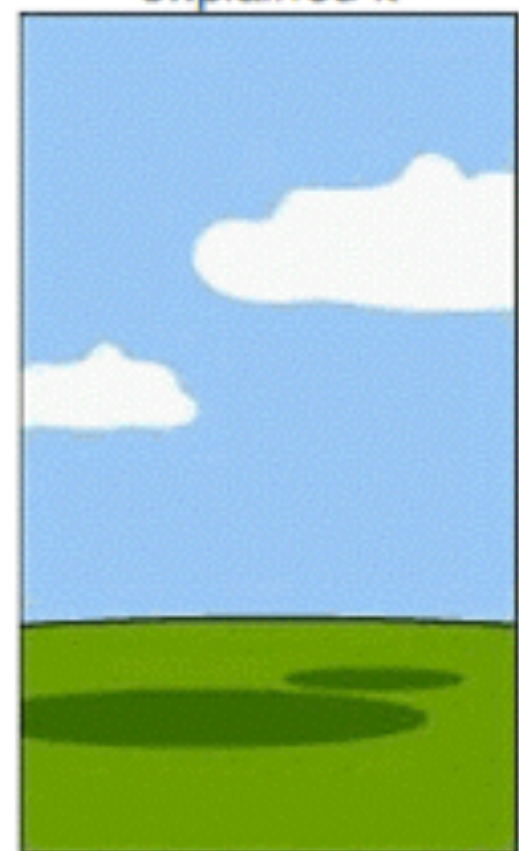How the project leader understood it

How the engineer designed it

How the programmer wrote it

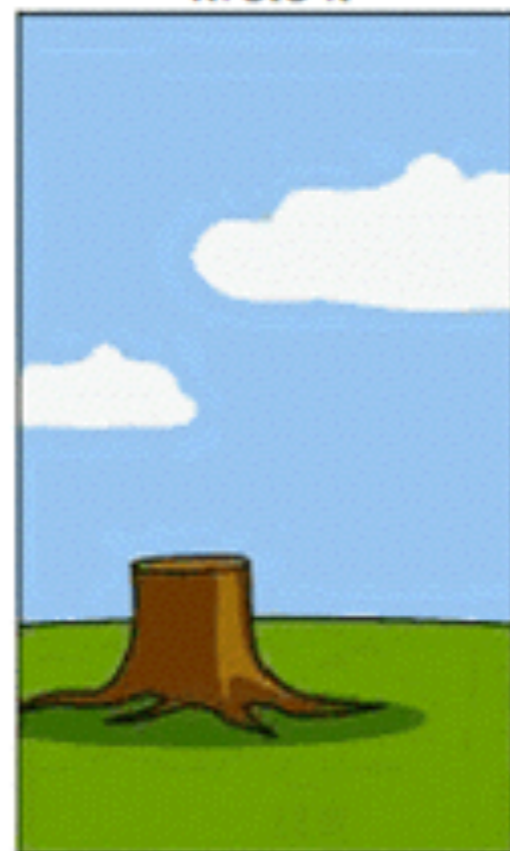How the sales executive described it

How the project was documented

What operations installed

How the customer was billed

How the helpdesk supported it

What the customer really needed

Can Code?

- Add new modules

- Peer review

- Bug fixes

- Optimization

- Enhancement

No Code?
No Problem!

Documentation

- Always need more documentation

- Tutorials

- Examples

- How-to guides

Support

"Six Major Risks of Open Source Phone Systems"

Support

- As a whole, **telephony support sucks**

- True for everyone… Cisco, Mitel, Avaya, Open Source

- Clients hate it… and they have valid reasons why

- We can and must do better

Kamailio Support

- Mail Lists <— Very Active

- IRC Chat

- Github

- Private Paid Support

"I can call Cisco and get
20 people here tomorrow."

–Corporate IT Manager

Evangelism

zealous advocacy or support

I Love Kamailio

Because of the hard work of Kamailians

Thank You

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