

SRE and Presidential Campaigns

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SRE since 2012

Worked on Campaign 2016-01-18 to
2016-12-31.

Some stats

Hillary for America

April 12, 2015 - November 8, 2016

Number of days between
announcement and election: 577

Number of elections: 60 (59 Democratic
Primaries, 1 Presidential Election)

Tech Team Employees: ~80

Campaign Employees: ~4000

Dates

- Monthly FEC Filing Deadlines
- Democratic Primaries: **Feb 1, Feb 9, Feb 20, Feb 27, Mar 1, Mar 5**, Mar 6, **Mar 8**, Mar 12, **Mar 15**, Mar 22, Mar 26, Apr 5, Apr 9, Apr 19, **Apr 26**, May 3, May 7, May 10, May 17, May 24, Jun 4, Jun 5, **Jun 7**, Jun 14
- Democratic Primary Debates: Oct 13, Nov 14, Dec 19, Jan 17, Feb 4, Feb 11, Mar 6, Mar 9, Apr 14
- Forums: Nov 6, Nov 24, Jan 11, Jan 25, Feb 3, Feb 18, Feb 23, Mar 7, Mar 13, Mar 14, Mar 21, Mar 30, Apr 25
- Republican National Convention: July 18–21, 2016
- Democratic National Convention: July 25–28, 2016
- Presidential Debates: Sept 26, Oct 4, Oct 9, Oct 19
- Voter Registration Deadlines: Oct 1-30, 2016
- Get out the Vote: Nov 1 - 6, 2016
- Presidential Election: Nov 8, 2016
- “The Great Layoff”: Nov 11, 2016

Problems

- Short timelines
- Not a lot of money
- Weird spiky traffic
 - No one goes to your website
 - Callouts (HRC, Franken-bump)
 - Email
 - DDoS
- Lots of vendors
- Tech is not a core-competency of politics
 - Our customers require training
 - Customers are not always technically literate
- Security

Teams

Two types of teams:

Support

- Ops (SRE + Security)
- Data Infrastructure
- Frontend Ops
- Product
- Design

Teams

Execution

- Fundraising (Get that money)
- Organizing (Help our volunteers)
- Voter (Get out the Vote)
- Engagement (Social)
- Storytelling (Online content + CMS)
- Mobile

Infrastructure

- Fastly: Varnish handled all of edge
- Static Frontend (~150 static apps)
- API Gateway (Simple Django Server)
- Backends (~100)
- Databases (RDS + Elasticache + Hosted ES)
- Syncs (Airflow + Custom stuff)
- Data Warehouse (Vertica)

Deployment

Assume deploys will be happening often / always (Often had 100+ deploys a day)

Travis CI - Tested and built artifacts

Spinnaker like tool from Timshel deployed Backend Services

Everything else published to S3

Mirrored a small subset of things to US-West

Monitoring + Alerting

Datadog, Pagerduty, Slack

Monitor every box. Everyone can see all monitoring.

Teach devs how to add metrics and build dashboards

#chatops (common infrastructure tasks done via Slack)

Three tiers of alerts:

- #tech-alerts (Also paged)
- #tech-audit (please look at soon)
- Graphs

24 / 7 - Primary + Secondary

Ops Life

Rough numbers of a normal week

- 30% doing design reviews, education and planning
- 30% reacting to incidents
- 20% building tools for automation
- 20% acting as spare hands for other teams
 - Testing, bug squashing, deployment fixes

Interesting SRE Apps

Some software we worked on

- Edgeparty: Easy on the fly modification of VCL Dictionaries
- VCL CI Pipeline
- Pokemon: Validate URLs never disappear
- Tools for automated failover
- Tools for auditing security of apps
- Three CMS static compilers
- Tens of chatbots
- Lots of other random stuff

Future

Most of the organizations fighting for you need help and money. Here are some that I like:

- ProPublica
- ACLU
- EFF
- Local assembly person
- Demand Progress
- Free Press
- Project on Government Oversight
- Center for Public Integrity
- USDS & 18F

Thanks!