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
- 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
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
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
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
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
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
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!