Cloud Infrastructure, Virtualization, & Scaling

2015 Survox Summit

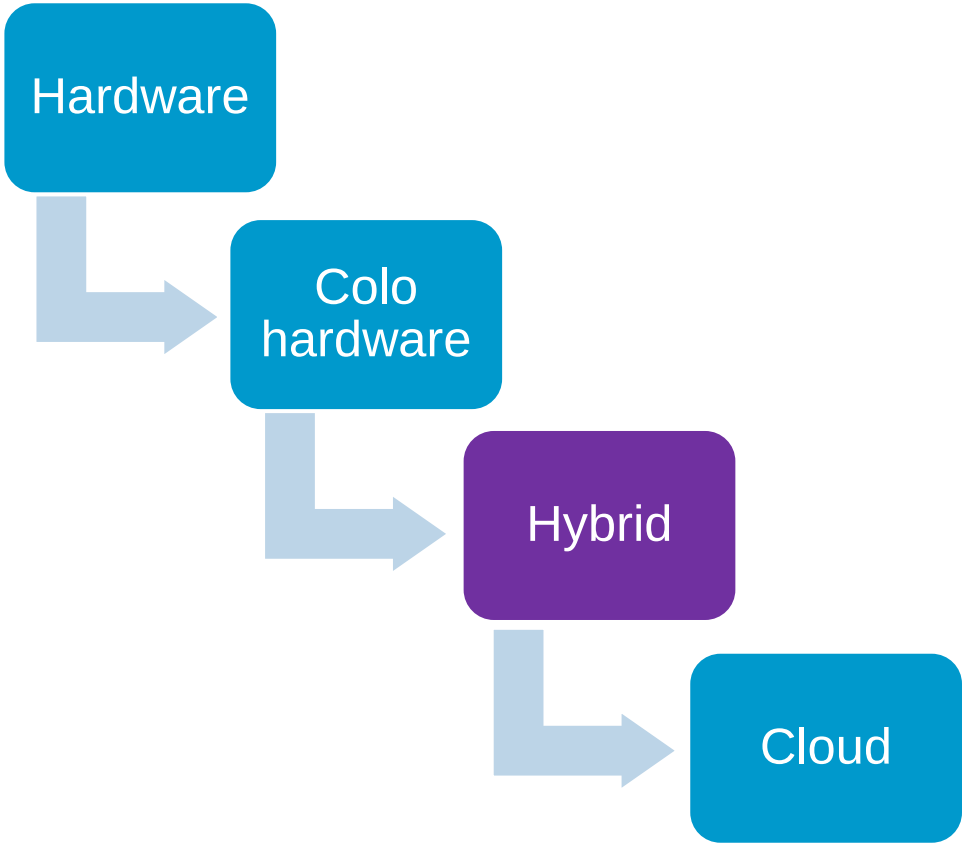
Intro

- Jason Kagel, VP of Engineering
- Ken Keyes, DevOps Engineer

Intro

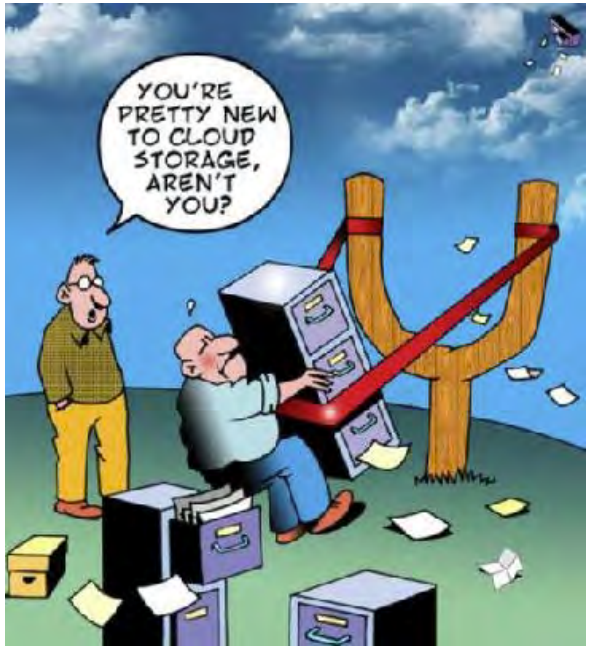
- How Survox technology is transitioning
- Role of the cloud
- Tools we're using
- How this can help customers

Technology Evolution at Survox



What do we mean by Cloud?

- Internet applications > browser/app
- Computing is not local.
- Shared resources – not dedicated.



Why Cloud?

- Cost efficiency
  - Pay for only the hardware that you use.
  - Remove data-center costs.

- Improved security & dependability
  - Hardware eventually fails.
  - Less downtime in Cloud
  - Dynamically respond to system events

- Easier scalability - the ability to grow your network as your need for more resources increase

Scalability

- Vertical scalability
  - Add more resources to a single node or server.

Scalability

- Horizontal scalability
  - Add more systems to a given application

This can help you by . . .

- Time savings

- Cost savings

- Easier to manage

Tools We Use at Survox.

- Automated deployments.
- Programmable infrastructure.

- Elastic SIP trunking
- Investigating voice platform (IVR)

- Automated system provisioning & deployment
- Active monitoring & configuration for system consistency

Our Tools: Amazon Web Services (AWS)

- Elastic Compute Cloud = EC2 instances
  - Virtualized instances
  - Templates called Amazon Machine Image (AMI's) = "gold image"
  - Configured with OS & application software
  - Start, stop, terminate, & monitor instances
  - Instances can run in different Regions and Availability Zones

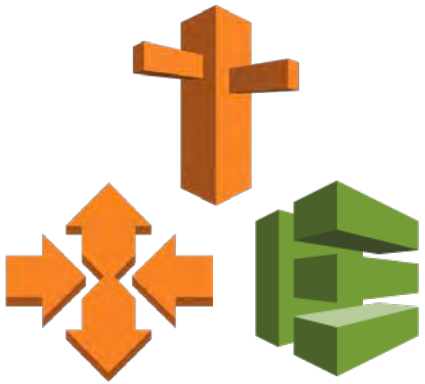
- EC2 Instance types
  - General purpose
  - Compute, GPU, Memory or Storage Optimized

Our Tools: AWS Storage

- Application storage
  - “Elastic Block Store” (EBS)
  - Create volumes or snapshots with your instances
  - “Elastic File Storage” (EFS)
- Backups
  - EBS
    - Create snapshots to do file & system backups
  - S3 buckets “Simple Storage Solution”
    - Object storage
  - Glacier
    - Lower cost long term storage solution

Our Tools: Other AWS Services

- Auto Scaling Groups (ASG's)
  - ASG's – automate changing of capacity
    - e.g. add more instances when CPU utilization is high, remove instances when CPU utilization is low.
- Route 53 (DNS)
  - Amazon's DNS service
- Code Deploy
  - Rapidly release new features



Our Tools: Telco

- Twilio
  - Cloud based communications platform for developers
  - Twilio has a standard API for connecting to their services
  - Phone & SMS

- Elastic SIP Trunking
  - Provision trunks within minutes, not weeks.
  - No need for contracts
  - Unlimited concurrent call capacity
  - SIP infrastructure connects to closest global region

Our Tools: Chef

- Chef – configuration and automation platform
  - Write “recipes” that describe how applications should be configured (Apache, MySQL etc)
  - Build, deploy, and manage your infrastructure

- How we use it
  - Deployment & Provisioning

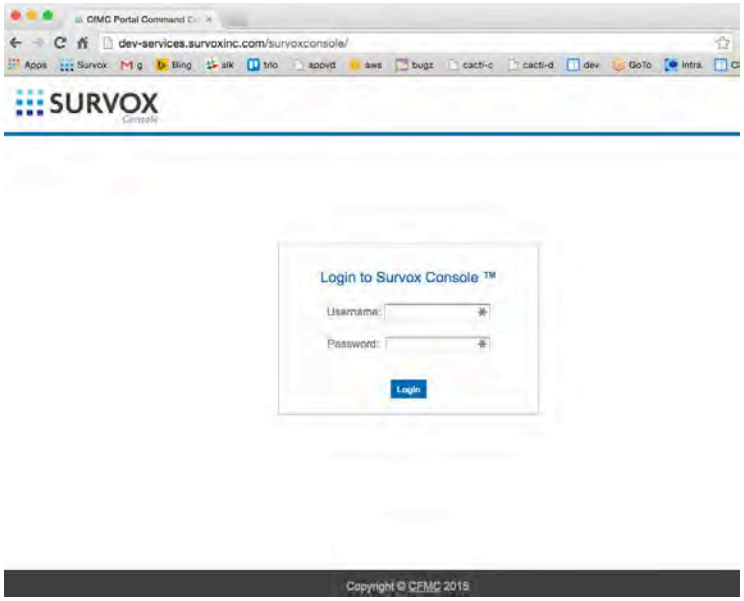
System Delivery: Traditional Method

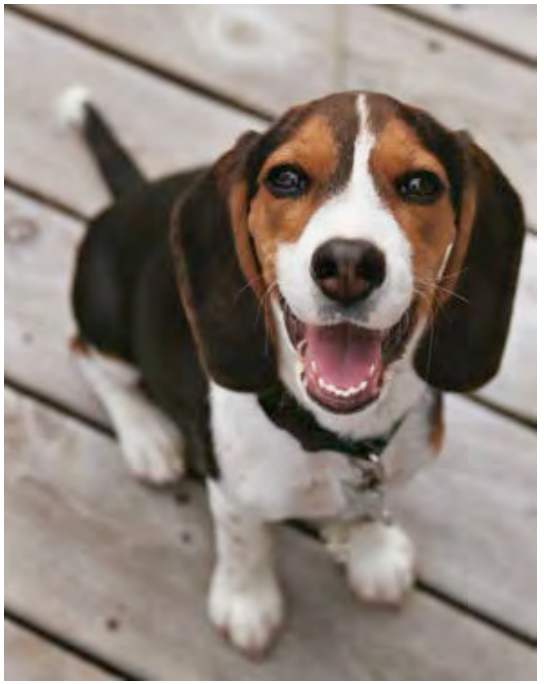
- Customer order.
- Purchase equipment. (weeks)
- Configure hardware. (hours)
- Install OS & configure application. (hours)
- Place order and wait for Telco to provision trunks. (weeks)
- Drive system to colo and install. (hours)

System Delivery: Today's Method

- Type a command . . . knife ec2 server create . . .

```
[ken@kkeyes-linux ~]$ knife ec2 server create -r 'role[newrole1]'  --server-connect-attribute private_ip_address --subnet subn
et-e547c28l  -g sg-d07br32 -i "/Users/ken/.ssh/demo_key" --ssh-user test  --iam-profile 57access --node-name usersconf-demo
```





- Typical traditional time = 4 weeks
- Typical automated time = 10 minutes

How do we use this? Engineering

How do we use this? Hosting

This is how we've been able to . . .

- Time savings

- Cost savings

- Easier to manage

How this helps you – Next Steps

- Improving customer experience
- Building the future
- Vendor links:
  - AWS: https://aws.amazon.com (1yr trial)
  - Twilio: https://www.twilio.com/
  - Chef: https://www.chef.io/

Q & A

WWW.SURVOXINC.COM