Automating a Linux Fest

Zach Underwood

About me

- SC native
- 10+ years of IT experience
- IT admin
- Linux admin
- Network admin
- RHCE and RHCSA
- Currently working for managed wifi company as wifi/network engineer

About SELF

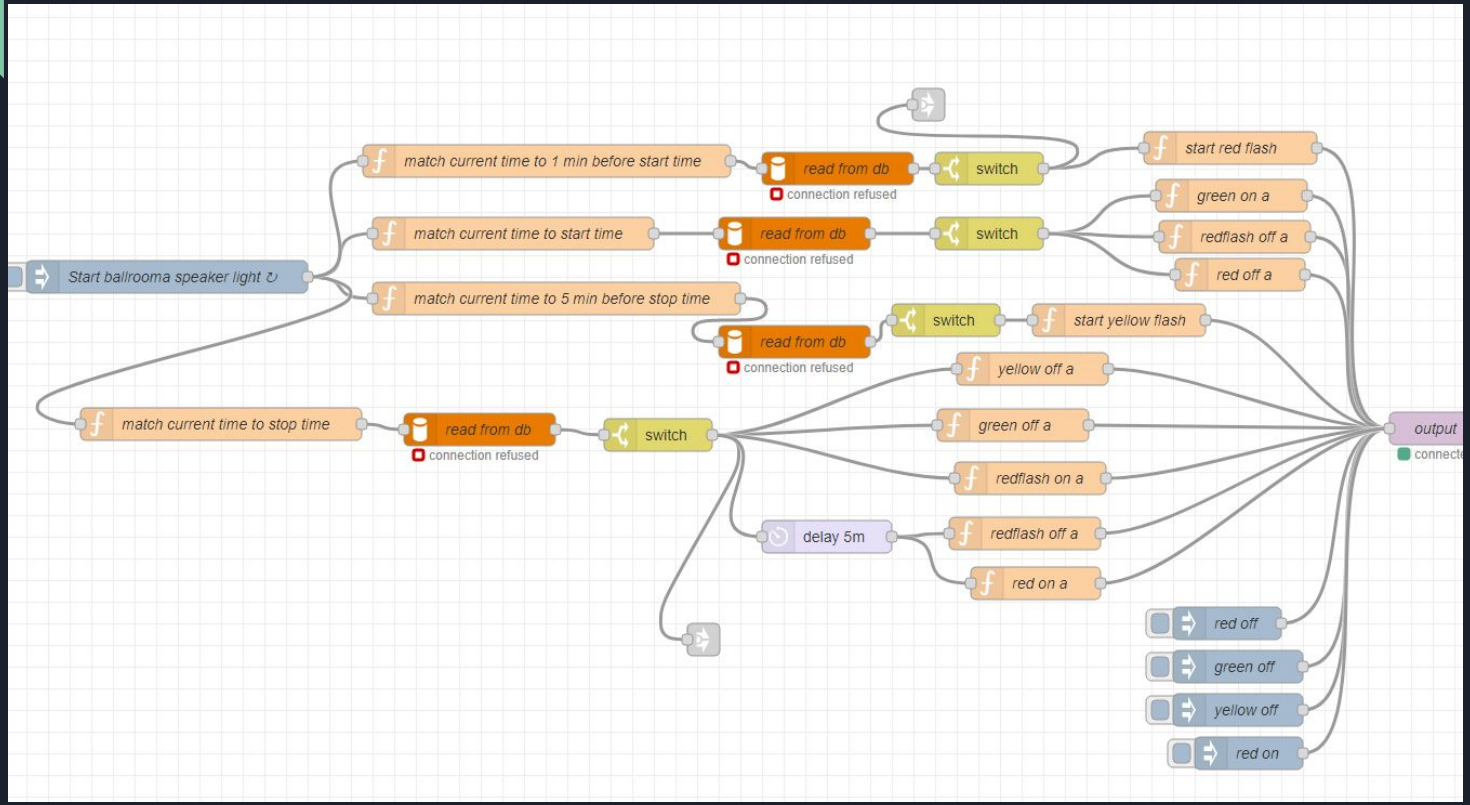
- SouthEast Linux Fest (please don’t confuse with other SELF)
- Started in 2009
- In past we bring ~800 attendees
- I started doing the networking for the evening in 2014
- ~70 speaker sessions

Services we offer aka what we do that needs to be automated

- Record and live stream the speaker sessions
- Speaker light that provides timing info to speaker
- Camera based people counting
- Vote boxes
- Event wide wifi
- Lan party area
- Event wide info displays
- Monitoring

Backbone our automation

Nodered, mysql, and mqtt



Recording the Sessions

Small formfactor desktop running Gentoo or Ubuntu.

OBS with https://github.com/Palakis/obs-websocket installed

Nodered calls a python glue script which calls the websocket to start/stop recording

OBS writes out to NFS share the video file

Nodered then calls a bash shell script to get the filename OBS is wiring out.

We use magewell usb hdmi capture devices, POE cameras, and Behringer UCA202

😡 Apple and HDCP

Recording part2

After the session is over nodered will upload the video to youtube

Youtube api quota

New for 2022 will be uploading to internet archive and possibly peertube.

Live streaming

We have partnered with asknoahshow/Altispeed for live streaming.

At the beginning of the day we start OBS to live stream and its keeps running all day.

It outputs to a rmtp server offsite managed by Noah.

Speaker lights

NodeMCU esp8266 based

Esphome

Wifi

MQTT

Camera based people counting

Camlytics.com

Json http api

Vote boxes

Nodemcu

Wifi

Mqtt

Usb powered

Wifi/network

We run 7k feet of ethernet cable and 2k feet of fiber.

6 servers

20+ APs

7 switches

ARBOR
ARBOR

Lan party

Onsite gameservers for TF2, Minecraft, UK2k

Displays

Raspberry Pi

Wifi

hdmi/VGA

Firefox kiosk mode

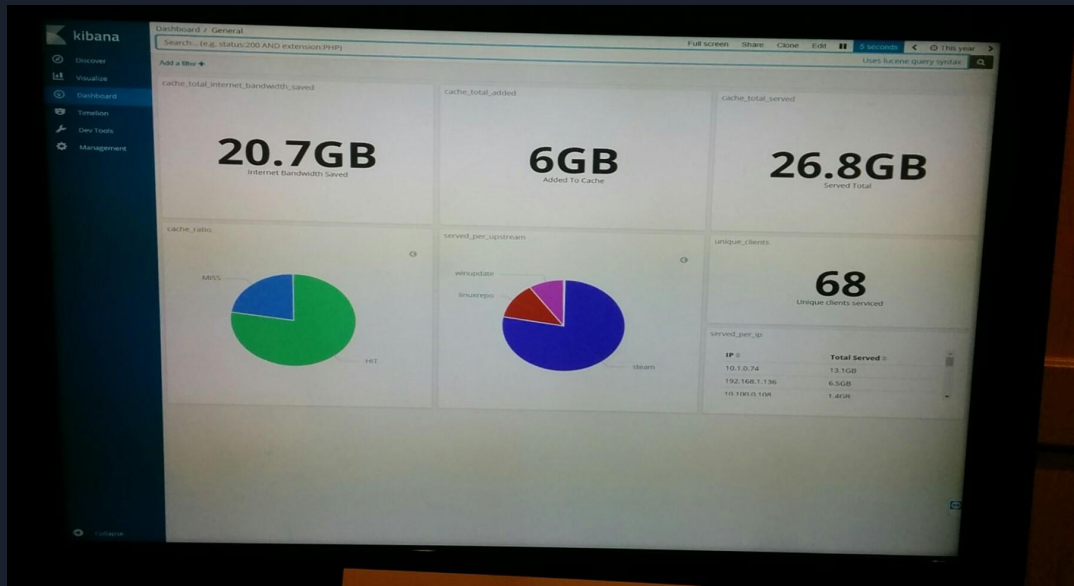
Monitoring

Librenms

Lancache - ELK (Elasticsearch, Logstash and Kibana)

Ntopng

Wireless controller unifi or ruckus



For more info/details

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https://gitlab.com/south-east-linux-fest/self-infra/onsiteservices/-/wikis/home