Planning for KAPB move

8 May 2017
Danny Jacobs

Summary and Goals

1) On site visitors: Aaron Parsons +2 UCB students. May 15- May 25
   Off site help:
   Danny Jacobs (US Pacific time: Early morning, late evening SA time)
   Peter Williams (after May 14, US Eastern time 3 hours closer to SA)
   Jack Hickish (US Pacific time)
2) Goal: Move all HERA equipment from CMC to KAPB
3) Goal: Move SKA network attachment point to single port in KAPB.
4) Goal: Prepare HERA container for its move.

Note:

For the moment we will not be taking any machines private. This will have to wait until we have obtained a reliable off-site login node.

Sources

http://herawiki.berkeley.edu/doku.php/network_v1
github.com/ProjectFiles/network_power_config/
This document:
https://docs.google.com/document/d/1zxxAMYZ-B0MZXDAQixQ8gBf8-FulslYb3mZqtvzy_V8/edit?usp=sharing

Schedule for May 2017 Trip

Monday May 15:

- Aaron P., +2 students arrive on site

Tuesday May 16:

- Label, document, move as much CMC as possible.
- NB: Check for flashing disks
- End of day goals:
  - Primary
    - KAPB: HP switch, netgear switch, qmaster, and 1 still machine
    - HERA container: HP switch installed and fiber connected
  - Secondary

        - More of the CMC as time permits

Wednesday May 17:

- Peter Macfarlane day trip.
- Configure two HP switches for HERA Pvt and SKA public Vlans. Verify correct connections between machines on each vlans, and outside for the “public machines”.
- Aaron and team to assist Peter.

Thursday May 18:

- Setup remaining RTP/Librarian machines in KAPB.
- End of day goal: return to fully operational correlator, RTP, Librarian operations.

Friday May 19:

- Margin

Saturday May 20:

- Margin

Sunday May 21 - 26

- Deconstruct HERA container in prep for move. Store correlator machines etc in KAPB?

Supplied by SKA

Fiber connection to the SKA Switch (The Cisco switch)
What kind of connector on our end?
Peter Macfarlane for switch setup! Site trip 17 May 2017?

Rack #11?

Power PDUs

New things

HERA Gateway switch (HP 2810-24G, shipped from UCB March 2017)

HERA Container switch (HP 2810-24G, ordered to UCB on 4 May 2017)

Things moved from the CMC

The plan is to move everything without any config changes. Add the HP switch as an interface layer which provides both HERA.pvt and SKA public vlans.

RTP:

Qmaster (SKA “public”, HERA private, and IPMI)
Still1-4 (RTP Private)
Cask1,2 (RTP Private)

Librarian:

Pot 6 (SKA “public”, HERA private, and IPMI)
Pot 1(SKA “public”, HERA private,and IPMI)

Power switch (APC)
Dell power connect switch

HERA container
Paper1:
    Eth0 gigabit (public KAT 192.168.216.100 - port)
    Eth1 Gigabit (10.0.1.1 -- roaches/X-engs, netboot, “HERA pvt”)
    Eth1:1 Gigabit (10.0.100.1-- X-box IPMI)
    eth2 mellanox 10G (10.0.2.1 -- roach/xeng debug?)
Two racks of correlator hardware.
Etc other things.

Notes:
The X engines are unreachable from outside the HERA container switch. This might be on purpose?

We require 1000BASE-LX -- i.e., 1GbE over pairs of fiber at 1310nm. Will be using HP J4859C transceivers --https://h10057.www1.hp.com/ecomcat/hpcatalog/specs/provisioner/99/J4859C.htm

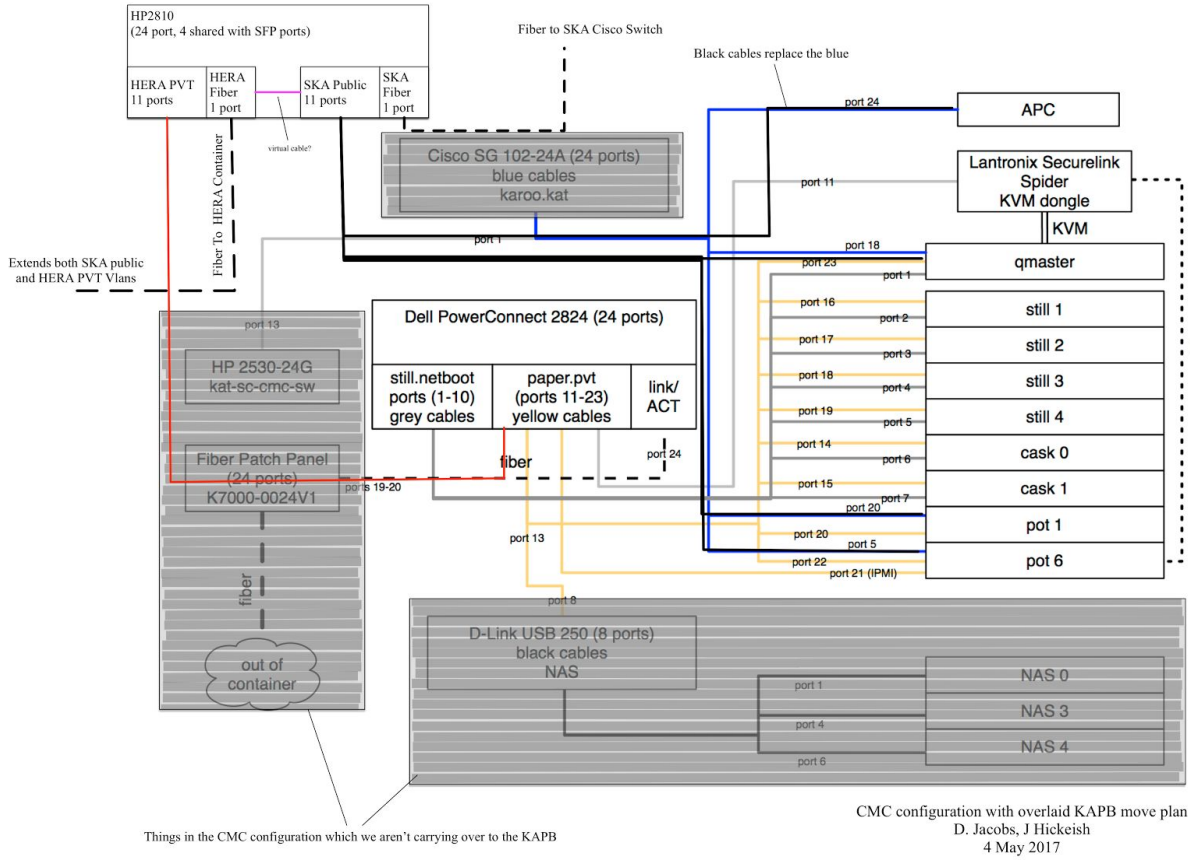
Meeting with Peter Mac
    What is the new subnet?
    Verify staged plan for ~16 current public ips, then transition to login node +NAT+DNS to have fewer publics.

SKA IPs

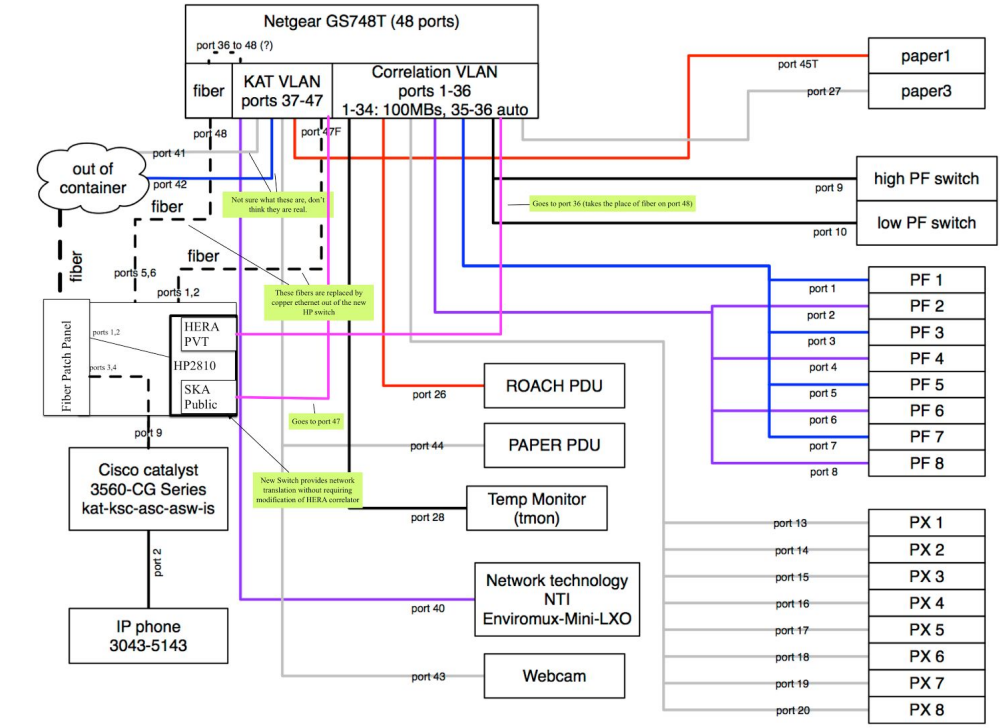
We currently have ~15 “public” machines.
Needs for public IP are: needing to see out, can be fixed with NAT and DNS on a HERA login node. Other times to have a clear path for data movement (ie avoiding ssh tunnels). Mission critical things (power strips, web cams) are put on public ips to avoid having to tunnel through the HERA login nodes which are currently both in containers (which can overheat etc).

If we can setup reliable login nodes off site which provide NAT, DNS etc, then most of them can move to private. The only things which will need true SKA access will be things accessing SKA services. Data routing for maximum bandwidth is an open question and depends on where the HERA login nodes get hosted.

Proposed changes in the KAPB move
For the new network configuration in the HERA container we will insert a switch at the receiving end of the fiber. Its job is to split the HERA private and SKA public vlans and removes the necessity of altering the configuration of the correlator switch.



CMC configuration with overlaid KAPB move plan
D. Jacobs, J Hickeish
4 May 2017



HERA container/correlator configuration with overlaid network move plan
D. Jacobs, J Hickeish
4 May 2017