



## SA Networking

External SSH access: `padloper.kat.ac.za` (IP: 196.24.41.252), **port 2222**.

Machines on the KAT network have IP addresses in the range 192.168.216.100 - 192.168.216.125.

Host names ending in `.karoo` are registered with the KAT/SKA network and are pingable from `padloper`, either as written or as (e.g.) `paper1.karoo.kat.ac.za`. Other hostnames are hardcoded in various `/etc/hosts` files and may not be defined consistently on all machines (yay).

Power Connections numbers run left-to-right for horizontally aligned power strips and top-to-bottom for vertically aligned power strips. Numbers include the strip's input. Machines with multiple power connections have them listed from top-to-bottom or left-to-right.

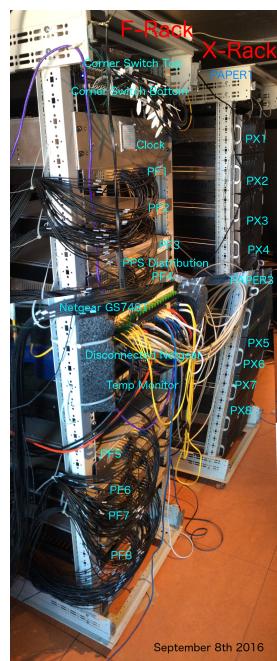
Name	KAT IP address	HERA IP address	Role	OS	Access	Network Connection	Power Connection
paper1.karoo	192.168.216.100	10.0.1.1	correlator control	Ubuntu 12.04		Netgear GS748T, 45T	PAPER PDU,3
paperqmaster.karoo	192.168.216.110	10.0.1.20		Ubuntu 12.04		DELL PowerConnect 2824,1(still),23(pvt)	CMC UPS, 2
<b>Infrastructure</b>							
paperwebcam.karoo	192.168.216.101		camera	N/A	admin:admin	Netgear GS748T, 43	
papersensor.karoo	192.168.216.103		networked temperature switch (Enviromux-mini-lxo?)	N/A	root:nti	Netgear GS748T,40	F-rack ML, 1
paper104.karoo	192.168.216.104		Labjack	N/A			
paperpdu.karoo	192.168.216.105		Networked power switch	N/A	apc:apc	Netgear GS748T, 44	
paper106.karoo	192.168.216.106		<a href="#">Netgear GS748T</a>	N/A	P91s4R*@		Frack, LL, 1
paper107.karoo	192.168.216.107		Liebert chiller HVAC first IP	N/A			
paper108.karoo	192.168.216.108		Liebert chiller HVAC second IP	N/A			
paperstillpdu.karoo	192.168.216.117		APC Power supply in CMC	N/A	apc:apc	Cisco SG 102-24, 24	
tmon.paper.pvt		10.0.1.39	HERA container temperature monitoring Raspberry Pi	?	?		
apc.paper.pvt, roachpdu		10.0.1.240	ROACH APC Power supply	N/A	apc:apc	Netgear GS748T, 26	
dellswitch.mgt.pvt		192.168.2.1	Switch for private network (Dell PowerConnect 2824)		telnet: admin, or HTTP: admin:(empty password)		CMC-rack, UL 6a
CISCO SG 102-24	?	?	Cisco CMC Switch				CMC UL 6b
Cisco catalyst 3560 CG Series	?	?	Cisco phone switch !Power over ethernet!				HERA UR 3
<b>Data storage</b>							
pot0, paper118.karoo	?	10.0.1.30	data storage pot (in US)	Centos 6.1			
pot1, paper109.karoo	192.168.216.118	10.0.1.31	data storage pot; specs: <a href="#">upenn062812_pot1.pdf</a>	Centos 6.1		Dell Powerconnect 2824, 20	CMC APC, 3
pot2, paperpot2.karoo	192.168.216.119	10.0.1.32	data storage pot; specs: <a href="#">silicon_mechanics_pot2.pdf</a>	Centos 6.1			
“pot3”: paperpot3.karoo	192.168.216.120	10.0.1.33	data storage pot specs: <a href="#">silicon_mechanics_quote_269207_pot3.pdf</a>	Centos 6.1			
“pot6”: paper121.karoo	192.168.216.121	10.0.1.36	data storage pot specs: <a href="#">silicon_mechanics_quote_297449_pot6.pdf</a>	CentOS 7.1.1503 (Core)		Dell Powerconnect 2824, 21 (IPMI) ; Dell Powerconnect 2824, 22 (PRIV) ; CISCO SG201-24, 5 (KAT)	CMC APC, 5
<b>Processing</b>							
still1.paper.pvt		10.0.{1,2}.21	processing host	Ubuntu 12.04		Dell Powerconnect 2824, 2(still),16(pvt)	CMC UL, 1
still2.paper.pvt		10.0.{1,2}.22	processing host	Ubuntu 12.04		Dell Powerconnect 2824, 3(still),17(pvt)	CMC UL, 2
still3.paper.pvt		10.0.{1,2}.23	processing host	Ubuntu 12.04		Dell Powerconnect 2824, 4(still),18(pvt)	CMC UL, 3
still4.paper.pvt		10.0.{1,2}.24	processing host	Ubuntu 12.04		Dell Powerconnect 2824, 5(still),19(pvt)	CMC UL, 4
cask0	?		?			Dell Powerconnect 2824, 6(still),14(pvt)	CMC APC, 6
cask1	?		?			Dell PowerConnect 2824, 7(still),15(pvt)	CMC APC, 7
NAS0	?		?			D-Link USB-250, 1	CMC NAS 4
NAS3	?		?			D-Link USB-250, 4	CMC NAS 5
NAS4	?		?			D-Link USB-250, 6	CMC NAS 1
<b>Correlator</b>							
PF1	?	?	F-Engine			Netgear GS748T, 1	X-rack UL, 2
PF2	?	?	F-Engine	?		Netgear GS748T, 2	X-rack UL, 3
PF3	?	?	F-Engine	?		Netgear GS748T, 3	Roach PDU, 5
PF4	?	?	F-Engine	?		Netgear GS748T, 4	Roach PDU, 4

PF5	?	?	F-Engine	?		Netgear GS748T, 5	Roach PDU, 6
PF6	?	?	F-Engine	?		Netgear GS748T, 6	Roach PDU, 5
PF7	?	?	F-Engine	?		Netgear GS748T, 7	Roach PDU, 8
PF8	?	?	F-Engine	?		Netgear GS748T, 8	Roach PDU, 7
Corner Switch (top)	?	?	Corner turn?	?		Netgear GS748T, 9	F-rack ML, 2; F-rack UR, 1
Corner Switch (bottom)	?	?	Corner turn?	?		Netgear GS748T, 10	F-rack ML,3;F-rack UR, 2
Clock	?	?	?	?			PAPER PDU, 8
PPS Distribution	?	?	?	?			PAPER PDU, 4
Temp Monitor	?	?	?	?		Netgear GS748T, 28	PAPER PDU, 9
PX1	?	?	X-Engine	?		Netgear GS748T, 13	PAPER PDU 6,7
PX2	?	?	X-Engine	?		Netgear GS748T, 14	X-rack, UL 1,2
PX3	?	?	X-Engine	?		Netgear GS748T, 15	X-rack, UL 3,4
PX4	?	?	X-Engine	?		Netgear GS748T, 16	X-rack MR 1, X-rack LL 1
PX5	?	?	X-Engine	?		Netgear GS748T, 17	X-rack LL 2, X-rack MR 2
PX6	?	?	X-Engine	?		Netgear GS748T, 18	X-rack B 3, X-rack LR 5
PX7	?	?	X-Engine	?		Netgear GS748T, 19	X-rack LR 6, X-rack B 4
PX8	?	?	X-Engine	?		Netgear GS748T, 20	X-rack B 5, X-rack LR 7

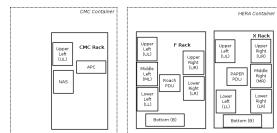
#### Out of Band management (IPMI,KVM etc)

pot0x.mgt.pvt		10.0.200.30	pot0 IPMI (in theory)				
pot1x.mgt.pvt		10.0.200.31	pot1 IPMI (in theory)				
pot2x.mgt.pvt		10.0.200.32	pot2 IPMI (in theory)				
pot3x.mgt.pvt		10.0.200.33	pot3 IPMI (in theory)				
pot6.ipmi		10.0.3.6	remote management host	supermicro IPMI and remote KVM	see below		
still1x.mgt.pvt		10.0.200.21	still1 IPMI				
still2x.mgt.pvt		10.0.200.22	still2 IPMI				
still3x.mgt.pvt		10.0.200.23	still3 IPMI				
still4x.mgt.pvt		10.0.200.24	still4 IPMI				
(none)		10.0.3.20	Lantronix Securelink Spider connected to qmaster		sysadmin : (standard P... password)		

#### Physical Computer Locations



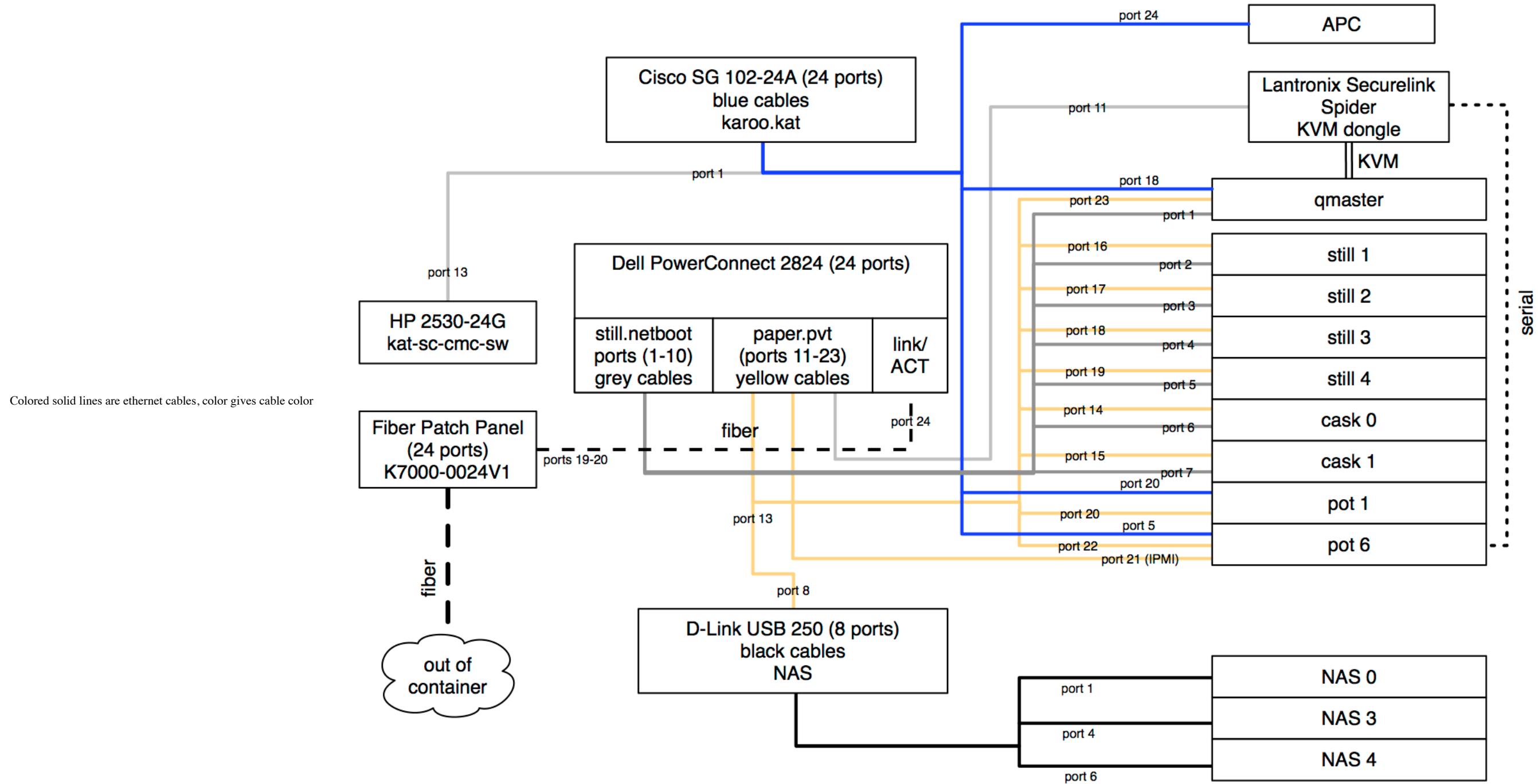
#### Power Supply Legend

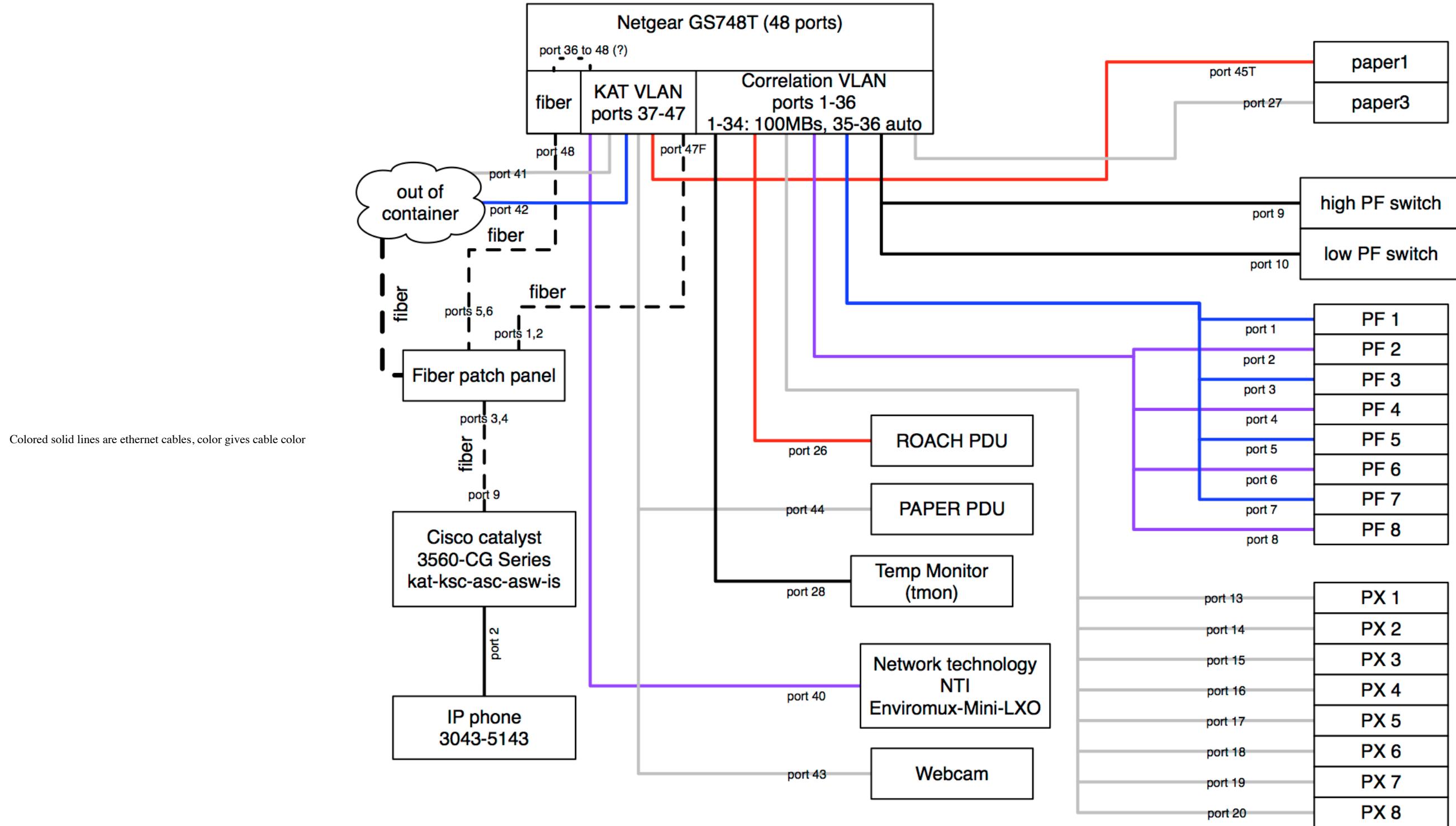


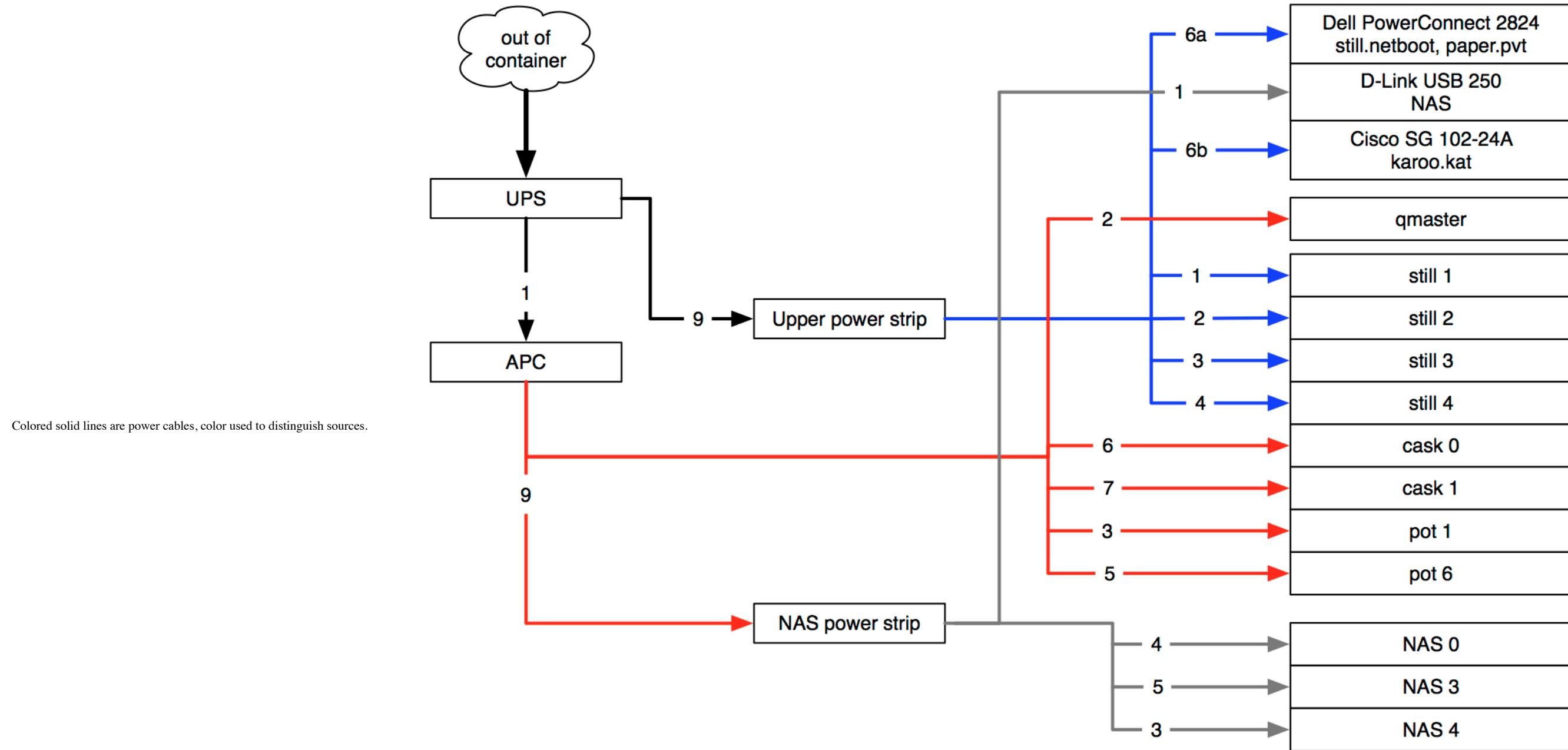
## HERA network diagrams

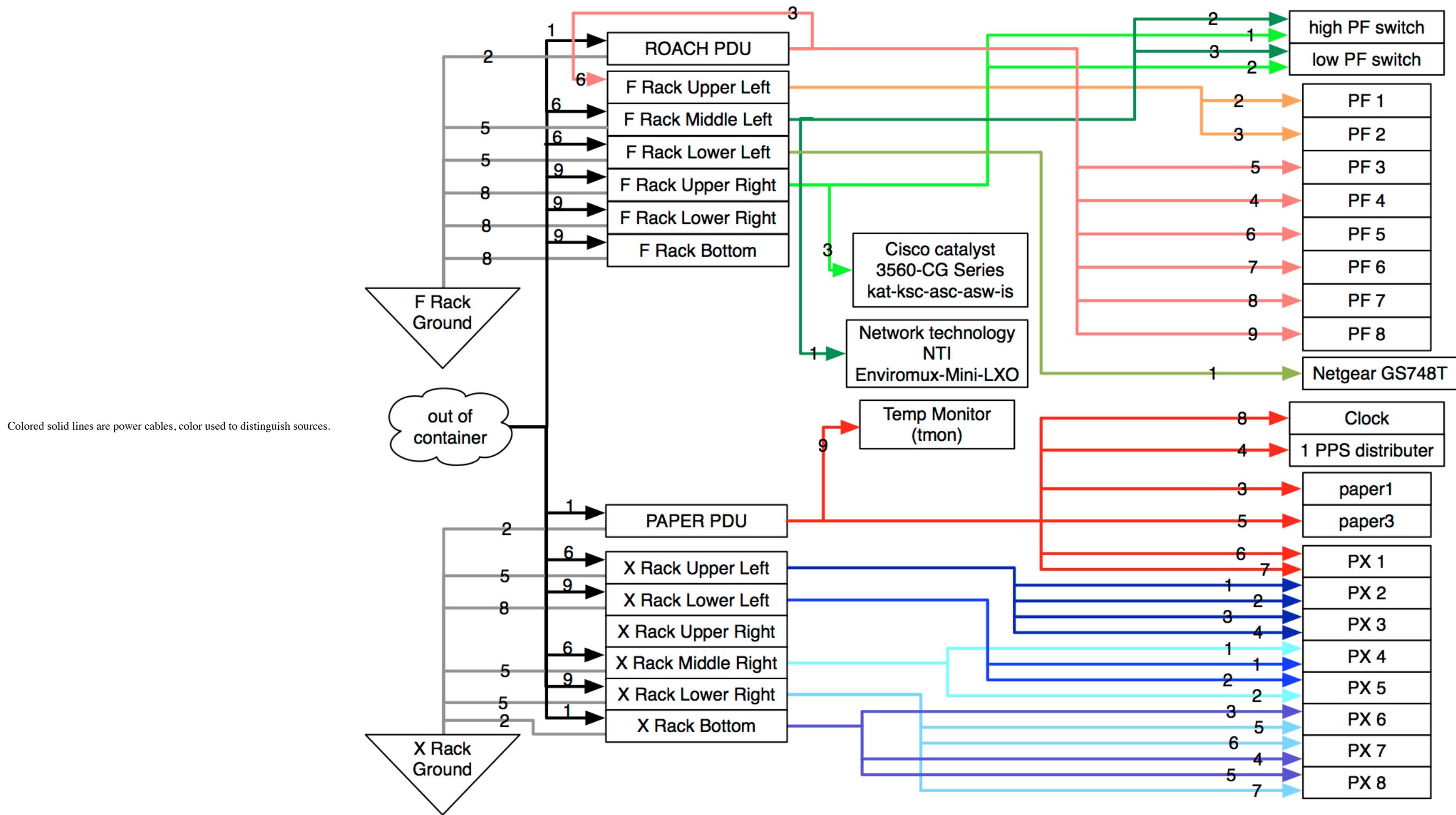
Note: if you traceroute to the Internet from either `qmaster` or `paper1`, the first node that appears is named `kat-as-asc-sw-2072` which is apparently a ProCurve J8770A. Unclear whether the diagrams below have outdated information for the KAT network hardware that our machines are attached to, or whether they are just routers that don't show up in a traceroute.

CMC HERA network









pdf versions:

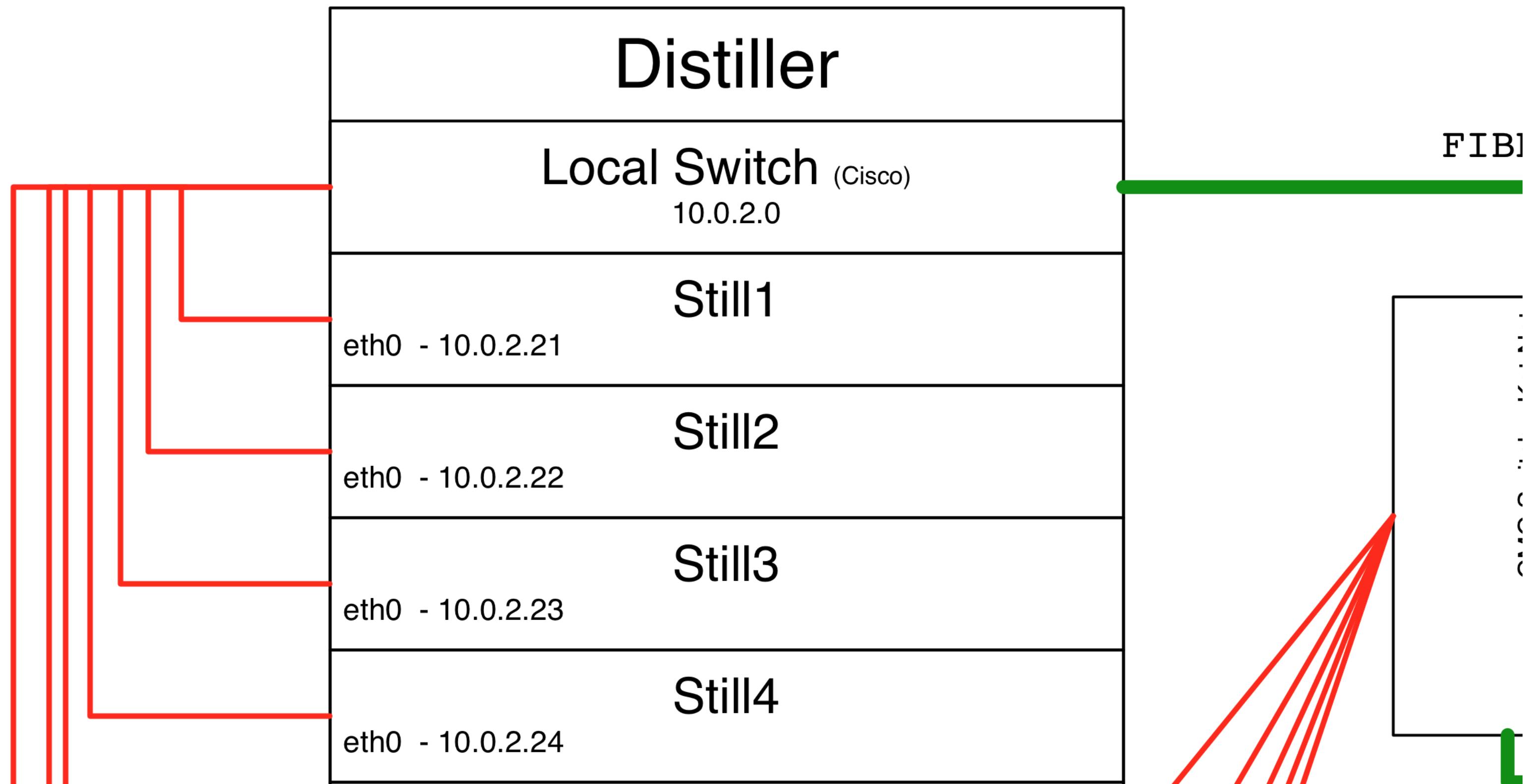
[CMC HERA network diagram](#) [CMC HERA power diagram](#) [HERA Container network diagram](#) [HERA Container power diagram](#)

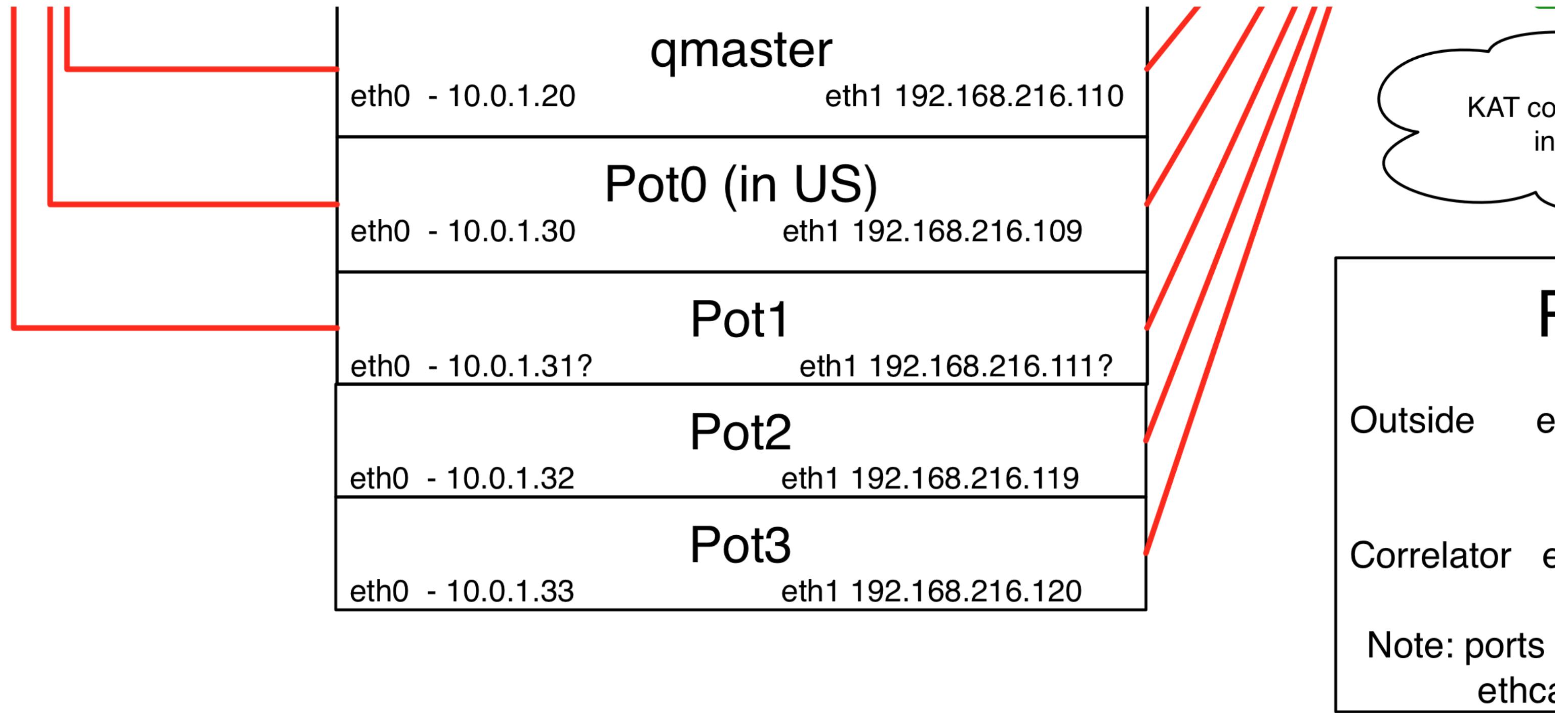
## Older, somewhat out-of-date diagrams

# HERA network

Original: 26 Sept 2012 - DJacobs, DMoore

Update: 16 Oct 2015 - DJacobs





## KAT Networking contact

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[old PAPER network diagram](#)

### Connecting to remote KVM (where available)

It is possible, but very annoying, to connect to the Supermicro remote KVM, which is available on ports 2,3 and 6 at least. Follow these exact steps:

1. Install socat on your local machine. It's needed to tunnel UDP traffic off of the IPMI host, which is in turn needed for remote KVM operation.
2. Make sure the socat program (launched by `remote_kvm.sh`) is not running on either the local or the tunnel hosts.
3. Run [HERA Commissioning/scripts/remote\\_KVM.sh](https://github.com/HERA-Team/HERA_Commissioning/blob/master/scripts/remote_KVM.sh) and sign in past local sudo, remote ssh and remote sudo.
4. Go to <http://localhost/>
5. If needed, authenticate: ADMIN / ADMIN.
6. Go to → Remote Control → Console Redirection. Or if you're already there, [refresh the page](#).
7. Click "Launch Console" to download the Java JNLP file. This must be done with **every** reconnection. Yes, it is stupid. No, there is no better way to do this.
8. Run the JNLP file downloaded. If it failed, it will probably lock up, with nothing but a black square. Success looks like a menu across the top, and the FPS in the window title bar will jump past 0.

HTTP/1.1 200 OK Date: Fri, 05 May 2017 17:18:17 GMT Server: Apache X-Powered-By: PHP/5.5.14 Expires: Thu, 19 Nov 1981 08:52:00 GMT Cache-Control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0 Pragma: no-cache Content-Length