Hall C Reference

Networking Notes

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Abstract

This document describes the networking configuration for Hall C and the Counting House. Network wiring and network hardware configuration are described here and all network devices (computers, network capable controls devices, etc.) are listed here. The intended audience for the document is Hall C data acquisition and controls experts and outside experts (such as Computer Center staff) who may need to configure the network.

1 Assignment of IP addresses

There are two subnet assigned to Hall C. The DAQ/Controls network, 129.57.168.0/22 is used for most DAQ and controls networking. The computers and devices on this subnet are in the counting house and in the Hall. The G0 DAQ network, 129.57.165.0/24, is used primarily for G0 data acquisition. It is also used for some non G0 controls. Most of the devices on this network are on the second floor of the counting house while some are in the hall near the G0 SMS magnet.

1.1 DAQ/Controls Network 129.57.168.0/22

At present, only addresses from the first quarter of the subnet are used. The network addresses below are all of the form 129.57.168.x, where x is the number in the table below.

Range	Use
10 - 100	Workstations, PC's, Printers, etc.
101 - 199	Single board computers (VME, fastbus)
200 - 230	X-terminals
231 - 240	Wireless and DHCP
241 - 255	Terminal servers

Use	Num	Hostname	Comment
Misc			
	1	168-Gateway	Hall C Router
	3	hallc-tunnel-canary	?? Down
	4	hallc-cr-canary	?? Up
	10	cdaqfs	Hall A/C Fileserver
Workstations			
	14	cdaqs2.jlab.org	Sun
	15	cdaqs1.jlab.org	Sun
	16	cdaqs3.jlab.org	Sun
PCs			
	21	jeffylab.jlab.org	Target control screen
	22	skylla.jlab.org	HMS Controls Win XP machine
	31	g0-sms.jlab.org	G0 SMS magnet console
	32	g0-magnet.jlab.org	G0 SMS magnet console upstairs
	33	g0-pc104.jlab.org	G0 PC104 EPICS
	34	g0-sms-backup	G0 SMS magnet controls laptop
	35	poltarl3.jlab.org	Target Group PC in Hall (Linux)
	37	kernow.jlab.org	Headless linux box
Level 1 CUE			
	41	cdaql1	
	42	cdaql2	
	43	cdaql3	
	44	cdaql4	
	45	cdaql5	
	46	g0ana	Gone
Printers			
	51	chc1hp.jlab.org	
	53	chchp2.jlab.org	
Single Board CPU's			
	101	vmec1.jlab.org	
	102	vmec2.jlab.org	
	103	vmec3.jlab.org	
	104	vmec4.jlab.org	TS0
	105	vmec5.jlab.org	ROC5
	106	vmec6.jlab.org	SOS HV IOC
	107	vmec7.jlab.org	
	108	vmec8.jlab.org	
	109	vmec9.jlab.org	
	110	3vmec10.jlab.org	
	111	vmec11.jlab.org	ROC 11 (Enge)
	112	vmec12.jlab.org	ROC 12 (Enge)
	113	vmec13.jlab.org	ROC 13 (HKS)
	114	vmec14.jlab.org	ROC 14 (HKS)
	115	vmec15.jlab.org	BCM IOC
	116	vmec16.jlab.org	
	117	vmec17.jlab.org	
	118	vmec18.jlab.org	
	119	vmec19.jlab.org	
	120	vmec20.jlab.org	HMS HV IOC
	131	g0iocsms	
	141	vmec11mon	ROC 11 Crate Monitoring
	142	vmec12mon	ROC 12 Crate Monitoring
	143	vmec13mon	ROC 13 Crate Monitoring
	144	hksreboot	APC Reboot Strip
Ethernet logic boards			
	171	opti1.jlab.org	Reset
	172	opti2.jlab.org	Reset
	173	hccaen1.jlab.org	New CAEN Mainframe
	175	poltargpib.jlab.org	
	176	g0-plc	G0 Magnet PLC
	177	hcpc10401	HKS PC104 #1
	178	hcpc10402	HKS PC104 #2
SFIs			
	181	sfich1.jlab.org	
	182	sfich2.jlab.org	
	183	sfihms.jlab.org	
	184	sfisos.jlab.org	
	186	sfich3.jlab.org	
Wireless			
	230	hallc-ap	Access point?
	231		Access point?
DHCP			
	232	hallcsc-1	
	233	hallcsc-2	
	234	hallcsc-3	
	235	hallcsc-4	
	236	hallcsc-5	
	237	hallcsc-6	
	238	hallcsc-7	
	239	hallcsc-8	
	232-239		DHCP range (wired or wireless)
Terminal Servers			
	241	hctsv1	8 V00322020 F4-14081
	242	hctsv2	8 V00322036 F4-14078 ** Moved to EP network
	243	hctsv3	8 V00322018 F4-14080
	244	hctsv4	16 V00324528 F4-14066
	245	hctsv5	16 V00324523 F4-14067
	246	hctsv6	
	247	hctsv7	
	248	hctsv8	16 V03878724 F4-14816 G0 area
	249	hctsv9	8 V50740788 Enge
	250	hctsv10	8 V50740784 HKS

1.2 G0 DAQ network 129.57.165.0/24

Range	Use
50 - 59	Sun's, Misc
60 - 69	PC's
70 - 79	G0 DAQ cpus
80 - 89	G0 Controls cpus
230 - 249	DHCP

Use	Num	Hostname	Comment
	1	165-Gateway	Hall C Router
	3	hallcg0-cat.jlab.org	G0 Switch (not used?)
	52	cdaqs3-ep.jlab.org	
	53	cdaqs2-ep.jlab.org	
	54	cdaqs1-ep.jlab.org	
	56	hctsv2-ep.jlab.org	
	61	gzero.jlab.org	G0 Backup DAQ machine
	63	gzerol3.jlab.org	G0 DAQ machine
	64	gzerol3-daq.jlab.org	For ROC traffic
ROCs			
	70	g0vmets	Trigger supervisor
	71	g0vme1	
	72	g0vme2	
	73	g0vme3	
	74	g0vme4	
	75	g0fb1	
	77	g0vme7	
	78	g0vme8	
IOCs			
	81	g0ioc1	
	82	g0ioc2	
	83	g0ioc3	HKS HV
	84	g0ioc4	G0 Cage temp + Temp HV
	201	musson-g0	PC104 IOC - Still used?
	211	hallc-plc1	HMS PLC
	212	hallc-plc2	??
DHCP			
	230	hallc-1	
	231	hallc-2	
	232	hallc-3	
	233	hallc-4	
	234	hallc-5	
	235	hallc-6	
	236	hallc-7	
	237	hallc-8	
	238	hallc-9	
	239	hallc-10	
	240	hallc-11	
	241	hallc-12	
	242	hallc-13	
	243	hallc-14	
	244	hallc-15	
	245	hallc-16	
	246	hallc-17	
	247	hallc-18	
	248	hallc-19	
	249	hallc-20	
	255		Broadcast

2 Old Notes

This document is in the process of being written. What follows are the parts of the original networking notes document that have not been migrated to other sections of the document.

```
~cdaq/data_acquisition/networking-notes

Last updated:
02.01.1999 (saw) Change switch table to reflect new CH router
17.02.1999 (saw) Set ports 15 and 16 to full duplex/100
21.05.1999 (saw) Add notes on LAT server, updated wiring
 to IOC's
21.07.1999 (saw) 6 port hub in hall no longer used, all segments
 patched through directly from CH
21.07.1999 (saw) Move vmec2 to use port 1 of CH MMAC,
 vmec1/6 now use media converter.
        08.02.2000 (saw) Add sfihnss
09.02.2000 (saw) Add fileserver, sfich3, double, correct
 jeffylab
25.05.2000 (saw) Add IP assignments
16.05.2001 (saw) G0 section, optilogic board
20.09.2001 (saw) Add new DAQ PC for G0
15.03.2002 (saw) Note locate of access point, hctsv5,
                        clear up explanation of cabling to
                        target area
30.04.2002 (saw) Add hctsv8, in G0 area in hall
17.10.2002 (saw) Move g0-sms (aka g0-magnet) to HC CH.
21.03.2003 (saw) Swap definitiosn of g0-sms and g0-magnet
+------+
|cdaqs1|
+------+

+------+
|cdaqs2|
+------+

+------+
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|cdaqs3|
+------+

+------+
|cdaqh1|
+------+

+------+
|cdaqh3|
+------+


Fast Ethernet switch: (in rack CH03B09)

100 Mbit/sec ethernet switch.  24 channels.

01: router 17: (f)sfisos 33:
02: cdaqs1 18: (f)sfihnss 34:
03: cdaqs2 19: (f)vmec3 35:
04: cdaqs3   20: (f)vmec5 36:
05: cdaqfs (Fileserver) 21: vmec8 37: cdaqh1
06: jeffylab 22: (f)vmec9 38: cdaqh3/vmec15
07: g0-sms       23: 39: 10mb hub
08: g0ana 24: (f)vmec20  40: daq mmac
09: opti1 25: Bookshelf area 41: hctsv4
10: cdaql1 26: Bookshelf area 42: vmec4 hub
11: opti2 27: chc1hp 43: g0-magnet
12: cdaql2 28: chchp2 44:
13: (f)sfich1 29: hccaen1 45:
14: (f)sfich2 30: 46:
15: (f)sfich3 31: 47:
16: (f)sfihms 32: 48:
Uplink ports    1: (f)cdaqs1   2: Uplink to router
49, 50 are unused Gigabyte uplink ports



MMAC: (in rack CH03B10)
```

```
1: Patched to D234 in CH.  In hall patched to D234 in HMS, in hut
   patched to vmec2 on mezzanine level.
2: Patched to C186 in CH.  In hall C186 is patched to a cable
   running up over door to PS area (vmec10, vmec11, vmec19,
   hctsv5, Access point)
3: Console area: hallcxt9, hallcxt13, esax10
4: Bookshelf area: chc1hp, hallcxt15, hallcxt16
5: Patched to D233 which is connected to HMS D233 to vmec18 in
HMS hut

Hub connected to switch port 42: (in rack CH03B09
Patched to C185 through to Target Patch 32 to vmec4 and hctsv7.
(Presently needs a terminator at hctsv7, so it doesn't work)

[ Obsolete?
Switch port one connects to media converter which
goes to vmec1, vmec6. (In counting house)]

[No LAT's.  Need to update this info]
LAT Hub: (in 4th rack at patch in hall, located above the other hub
1:  D235 to upstairs patched to Counting house LAN.
2: Target Patch 31 (hclat3, hclat4) (Now comes directly from C186)
3: HMS D235 (rack 4) to hclat1
4: SOS C186 (rack 3) to hclat2

The 6 port HUB (in 4th rack at patch in hall) is not presently
being used.  The following information is not meaningful, but
left here as a guide to some wiring that is still in place
1: SOS C185(rack 3)  vmec6 & LAT
2: HMS D234(rack 4) to vmec2
3: Target Patch 32
4: Cable running up over door to CPU (eg vmec10) near power supplies
XX 5: HMS D233(rack 4)
6: T20/3rd arm patch]


Assignment of IP numbers
```

Port assignments for Terminals Servers

hctsv4

2 sfich3

EP network (G0) Fast Ethernet switch:

100 Mbit/sec ethernet switch. 24 channels.

```
01: gzero 09: (f)g0vme1 17: (f)
02: hctsv2-ep 10: (f)g0vme2 18:
03: gzerol3 11: g0vme3 19:
04:   12: (f)g0vme4 20:
05:  13: (f)g0vmets 21:
06:  14: (f)g0fb1 22:
07:  15: (f)g0ioc1 23:
08:  16: (f)g0ioc2  24:
```

Uplink ports   1: (f)CH router   2: