IP and Ethernet configuration for TELL1 and UKL1 Boards on the data network

Subdetector	Subsystem ID	IP source address	HW/layer 2 source address	ECS names	DAQ names	Comment
RICH2	1	192.169.1.xx/24	00:CC:BB:01:xx:00/24	r2ukl1xx	r2ukl1xx-d1	0 < xx < 13
HCAL	2	192.169.2.xx/24	00:CC:BB:02:xx:00/24	hctellxx	hctellxx-d1	0 < xx < 9
ECAL	3	192.169.3.xx/24	00:CC:BB:03:xx:00/24	ectellxx	ectellxx-d1	0 < xx < 27
TMU	4	192.169.4.xx/24	00:CC:BB:04:xx:00/24	tmutellq03, tmutellq04, tmutellq34, tmutellq01, tmutellq02, tmutellq12	tmutellq03-d1, tmutellq04-d1, tmutellq34-d1, tmutellq01-d1, tmutellq02-d1, tmutellq12-d1	
TFC	5	192.169.5.xx/27	00:CC:BB:05:xx:00/24	tfcodinxx	tfcodinxx-d1	0 < xx < 17
TFC	5	192.169.5.(32+xx)/27	00:CC:BB:05:xx:01/24	tfcodinxx	tfcodinxx-d2	0 < xx < 17
TFC	5	192.169.5.(64+xx)/27	00:CC:BB:05:xx:02/24	tfcodinxx	tfcodinxx-d3	0 < xx < 17
TFC	5	192.169.5.(128+xx)/27	00:CC:BB:05:xx:03/24	tfcodinxx	tfcodinxx-d4	0 < xx < 17
TCA	6	192.169.6.xx/24	00:CC:BB:06:xx:00/24	tcatellxx	tcatellxx-d1	0 < xx < 3
TRG/L0DU	7	192.169.7.xx/24	00:CC:BB:07:xx:00/24	trgtell101, trgtell102	trgtell01-d1, trgtell02-d1	
PS	8	192.169.8.xx/24	00:CC:BB:08:xx:00/24	pstellxx	pstellxx	0 < xx < 9
MU C	9	192.169.9.xx/24	00:CC:BB:09:xx:00/24	mutellcxx	mutellcxx-d1	0 < xx < 8
TT	10	192.169.10.xx/24	00:CC:BB:10:xx:00/24	tttellxx	tttellxx-d1	0 < xx < 49
VELO	11	192.169.11.xx/24	00:CC:BB:11:xx:00/24	vetellaxx, vetellcxx	vetellaxx-d1, vetellcxx-d1	0 < xx < 43, IP of VELO A: xx, IP of VELO C: xx+50
OT A	12	192.169.12.xx/24	00:CC:BB:12:xx:00/24	ottellaxx	ottellaxx-d1	0 < xx < 25
IT	13	192.169.13.xx/24	00:CC:BB:13:xx:00/24	ittellxx	ittellxx-d1	0 < xx < 43
RICH1	14	192.169.14.xx/24	00:CC:BB:14:xx:00/24	r1ukl1xx	r1ukl1xx-d1	0 < xx < 21?
TPU	15	192.169.15.xx/24	00:CC:BB:15:xx:00/24	tputellxx	tputellxx -d1	0 < xx < 6
OT C	16	192.169.16.xx/24	00:CC:BB:16:xx:00/24	ottellcxx	ottellcxx-d1	0 < xx < 25
DUM	17	192.169.17.xx/24	00:CC:BB:17:xx:00/24	dumtellxx	dumtellxx-d1	0 < xx < 11
MU A	18	192.169.18.xx/24	00:CC:BB:18:xx:00/24	mutellaxx	mutellaxx-d1	0 < xx < 8

(More to be added)

IP source addresses

Numbering must start from **1** i.e. r2ukl101 would have IP address `192.169.1.1` (0 is reserved for the network address). There is no limitation for the layer 2 address but uniquness must be ensured, i.e. each port in the experiment must have its own layer 2 address.

Ethernet = Layer 2 = Hardware source addresses

Please use the global prefix `00:CC:BB:::` for the first three bytes. The fourth byte represents again the subsystem (it is identical to the third byte in the IP address). The fifth byte is again the running number of your board. The sixth byte is reserved and will be set by the FPGA firmware according to the port-number,

which is used for sending.

Ethernet destination address to be used in all TELL1 / UKL1

`00:01:e8:22:4b:bb`

This should be configured on each board wanting to send on the data network. Using any other address will usually not work (packets will be dropped).

IP destination address to be used

The prefix (the first two bytes) is `192.168` (for farm nodes). The last two bytes are assigned by the TTC. In the config file you can set them to `0.0`. If you are not using the TTC then you must give the full data-network address of a farmnode. You can find the address using the `host` command. E.g.: for hlte0801 the data network address will be given by typing `host hlte0801-d1`

Sample configuration for a TELL1 .cfg file

```
_L0003:___     [192.168.60.1]          --Destination IP, The two last bytes are normally replaced b
_L0004:___   0x[00:01:e8:22:4b:bb] --Destination MAC
_L0005:___     [192.169.1.1]          --Source IP (this is r2ukl101 - do not use1)
_L0006:___   0x[00:CC:BB:01:01:00] --Source MAC the last byte is replaced by the port number 0..3
_L0007:___   0x[     800]    --Ethernet type(16b)
_L0008:___   0x[       4]    --IP version number(4b)
_L0009:___   0x[       5]    --Internet header length in 32-bit words(4b)
_L0010:___   0x[       0]    --Type of desired service for IP packet(8b)
_L0011:___   0x[      FF]    --Time in seconds for IP packet to stay in the Ethernet(8b)
_L0012:___   0x[      F2]    --Next level protocol(8b)
```

This can be used as part of a file to run `daq_tell1` for simple tests. **Note** please do not send blindly to a farm node. Make sure it is not in use by somebody else. Please: For any test on the DAQ network check with the Online team first.

-- GuomingLiu - 18 Dec 2007

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