

AT - New network switches for levels 3-9, 2017

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1. General notes

1. All switches are part of the AT network, so AT naming conventions and AT-site-specific setup notes apply.
2. The switches on Levels 3 to 8 all follow exactly the same pattern. Namely, for Level x :
 - a. `xat0` is a 2920-48G-PoE+ switch;
 - b. `xat1` is a 2920-48G switch; and
 - c. `xat2` to `xat7` are 2530-48G switches.
3. The 'user' ports of all switches are 1Gb/s; the difference between the 2920's and the 2530's is that the former also have 10Gb/s ports, which are used for the uplinks to the AT core.
4. The following sets of instructions will be useful:
 - a. [Instructions for setting up a ProCurve 2920 switch](#)
 - b. [Instructions for setting up a ProCurve 2530 switch](#)
 - c. [Additional site-specific instructions for setting up switches](#)
 - d. [DHCP snooping and ARP protection](#)
5. DNS entries have already been created for all switches involved.
6. `.pc` and `.ports` files already exist for all switches involved.
7. LCFG profiles for all switches are named in the style `lcfg/ASxaty`. Such profiles already exist for switches on levels 3 to 5, but these will need to be updated to reflect new switch model numbers and new MAC addresses. Profiles for switches on level 6 and above will need to be created from scratch as part of the configuration process.
8. Every 2920 switch will need to have one fibre optic module installed in slot A, and one SFP+ installed in the first slot of that module.
9. The 2530 switches have no additional modules or SFPs to be fitted.
10. We need to record the serial numbers of *everything* in the tables below - that includes the serial numbers for all additional modules and SFP+s.
11. The [AT level 3-8 network diagram](#) should clarify what interconnections exist, and how each should be labelled.

2. Setup procedure

For each switch:

1. Pick a switch to install from the table below.
2. Select an appropriate model of switch from the hardware stock. For a 2920, install a fibre module in slot A, and a single SFP+ in the first slot of that module. Note the serial number and MAC address of

the switch - as well as the serial number of the fibre module and SFP, if appropriate - and enter these in the table below.

3. Physically label the switch, front and back.
4. Use `rfe` to check and/or create an LCFG profile named in the style `lcfg/AS<switch no>`, which contains the correct model number and MAC address of the switch.
5. Let the profile compile, and allow the resulting DHCP configuration to propagate.
6. Rest the switch on top of the existing stack in Comms rack 2, connect port 47 to port 47 of `9at0`, and turn the switch on.
7. When the switch has finished its self-test, configure it as per the instructions in 1.4 above. Note that it will be necessary to update the firmware. Current versions (at 10.5.2017) are as follows:

Switch model	Firmware version	Firmware image filename
2920	WB.16.02.0014	wb_16_02_0014.swi
2530	YA.16.02.0014	ya_16_02_0014.swi

Comment: the most recent switch firmware can always be found in the `/tftpboot` directory of the site-specific network infrastructure server - in this case, `gatti`.

8. Push the configuration to the switch, as follows:
 - a. `ssh` to `gatti`
 - b. Become root.
 - c. `cd /disk/home/gatti/ATnet`
 - d. `make <switch name>.timestamp`
 - e. In case of any errors, use `rfe` to fix the relevant `.pc` and/or `.ports` files, and repeat as necessary.

Note: on 2530 switches, you *might* see errors like the following:

```
snmpDisableRA: 2
Couldn't disable RA for VLAN 2: noCreation 0 {1.3.6.1.2.1.4.39.1.2.103 Integer32 false}
```

These can be ignored: they occur because our configuration code does not yet currently take into account some internal details of the 2530 switches.

9. Check the switch front and back for any fault LEDs. Investigate if necessary.
10. Power off the switch; remove it from the rack; and *carefully* box it up again. Use the plastic bag to keep dust etc. out of the ports. For a 2920, be particularly careful with the SFP+. Label the box, and put it in some sensible location in IF-B.02.
11. Use the `/afs/inf.ed.ac.uk/group/cos/utils/create_system` script to add the serial number of the switch to the inventory.

```
create_system --serial <serial number> --hostname <fqdn>
```

If this works correctly, fill in the relevant 'In Inventory' field in the tables below. If it doesn't work, just ignore it and leave the 'In Inventory' field empty: we'll come back to it sometime.

(Note that, at some stage, we will also add the serial numbers of all the fibre modules and SFP+s from the tables in this wiki page to the inventory - but the inventory is not quite ready for that yet.)

3. Switches

Level 3

Taken by: *toby*

Name	Type	MAC	Serial number	Fibre module serial number	SFP+ serial number	Set up?	In inventory?
3at0	2920-48G-POE+	94:18:82:E2:93:00	SG6AFLZ9KN	SG6BFM1058	CN69G62406	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3at1	2920-48G	94:18:82:9E:FD:C0	SG69FLYVMY	SG60FM1039	CN68G626L5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Name	Type	MAC	Serial number	Set up?	In inventory?
3at2	2530-48G	E0:07:1B:9C:21:40	CN69FP60XY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3at3	2530-48G	E0:07:1B:9C:4B:80	CN69FP60YB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3at4	2530-48G	E0:07:1B:9D:3D:C0	CN60FP611W	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3at5	2530-48G	E0:07:1B:9D:C5:C0	CN60FP60S5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3at6	2530-48G	E0:07:1B:3E:E8:40	CN69FP604X	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3at7	2530-48G	E0:07:1B:9D:3C:40	CN60FP61LP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3at8	2530-48G	E0:07:1B:9D:4D:80	CN60FP616K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3at9	2530-48G	E0:07:1B:39:48:C0	CN66FP641T	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Level 4

Taken by: *joxley*

Name	Type	MAC	Serial number	Fibre module serial number	SFP+ serial number	Set up?	In inventory?
4at0	2920-48G-PoE+	94:18:82:E2:83:C0	SG6AFLZ9KH	SG6BFM11T5	CN69G6231B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4at1	2920-48G	94:18:82:25:B1:40	SG68FLYQVP	SG60FM114V	CN69G624TR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Name	Type	MAC	Serial number	Set up?	In inventory?
4at2	2530-48G	E0:07:1B:9C:98:40	CN69FP60YR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4at3	2530-48G	E0:07:1B:39:68:40	CN66FP64KM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4at4	2530-48G	E0:07:1B:3E:39:80	CN69FP604R	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4at5	2530-48G	E0:07:1B:9D:CC:40	CN60FP60VT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4at6	2530-48G	E0:07:1B:9D:8B:00	CN60FP60QC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4at7	2530-48G	E0:07:1B:9D:7C:C0	CN60FP60PX	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Level 5

Taken by: *idurkacz*

Name	Type	MAC	Serial number	Fibre module serial number	SFP+ serial number	Set up?	In inventory?
5at0	2920-48G-PoE+	94:18:82:E2:45:80	SG6AFLZ9L3	SG60FM1196	CN68G628DX	✓	✓
5at1	2920-48G	94:18:82:9E:8D:C0	SG69FLYVMQ	SG6BFM1056	CN69G623RQ	✓	✓

Name	Type	MAC	Serial number	Set up?	In inventory?
5at2	2530-48G	E0:07:1B:9C:9B:40	CN69FP60WR	✓	✓
5at3	2530-48G	E0:07:1B:9C:5A:C0	CN69FP61DQ	✓	✓
5at4	2530-48G	E0:07:1B:3E:C8:C0	CN69FP60MR	✓	✓
5at5	2530-48G	E0:07:1B:39:08:00	CN66FP6476	✓	✓
5at6	2530-48G	E0:07:1B:3E:78:00	CN69FP60HG	✓	✓
5at7	2530-48G	E0:07:1B:9C:A1:80	CN69FP613T	✓	✓

Level 6

Taken by: *idurkacz*

Name	Type	MAC	Serial number	Fibre module serial number	SFP+ serial number	Set up?	In inventory?
6at0	2920-48G-PoE+	94:18:82:E2:A3:00	SG6AFLZ9LW	SG6BFM111J	CN68G6288N	✓	✓
6at1	2920-48G	94:18:82:25:C1:00	SG68FLYQW1	SG60FM114T	CN69G625NH	✓	✓

Name	Type	MAC	Serial number	Set up?	In inventory?
6at2	2530-48G	E0:07:1B:9D:C5:00	CN60FP60XP	✓	✓
6at3	2530-48G	E0:07:1B:9D:CC:80	CN60FP612V	✓	✓
6at4	2530-48G	E0:07:1B:9D:A6:C0	CN60FP60ZK	✓	✓
6at5	2530-48G	E0:07:1B:9D:67:80	CN60FP60SC	✓	✓
6at6	2530-48G	E0:07:1B:9D:C6:80	CN60FP60XW	✓	✓
6at7	2530-48G	E0:07:1B:9C:C2:40	CN69FP614J	✓	✓

Level 7

Taken by: *joxley*

Name	Type	MAC	Serial number	Fibre module serial number	SFP+ serial number	Set up?	In inventory?
7at0	2920-48G-PoE+	94:18:82:E2:35:00	SG6AFLZ9L5	SG60FM1022	CN69G6248F	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7at1	2920-48G	94:18:82:25:00:80	SG68FLYQWJ	SG6BFM108D	CN69G624S8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Name	Type	MAC	Serial number	Set up?	In inventory?
7at2	2530-48G	E0:07:1B:9D:7B:C0	CN60FP60PM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7at3	2530-48G	E0:07:1B:9D:B6:00	CN60FP60YD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7at4	2530-48G	E0:07:1B:9D:DC:C0	CN60FP613Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7at5	2530-48G	E0:07:1B:3A:8F:00	CN67FP6011	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7at6	2530-48G	E0:07:1B:9D:DC:80	CN60FP610W	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7at7	2530-48G	E0:07:1B:9D:CC:00	CN60FP60S4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Level 8

Taken by: *idurkacz*

Name	Type	MAC	Serial number	Fibre module serial number	SFP+ serial number	Set up?	In inventory?
8at0	2920-48G-PoE+	94:18:82:E2:60:40	SG6AFLZ9K3	SG6BFM10QT	CN69G624B3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8at1	2920-48G	94:18:82:25:B1:C0	SG68FLYQVV	SG6BFM10WV	CN69G624R5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Name	Type	MAC	Serial number	Set up?	In inventory?
8at2	2530-48G	E0:07:1B:9D:DC:00	CN60FP60S9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8at3	2530-48G	E0:07:1B:9D:EC:00	CN60FP6102	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8at4	2530-48G	E0:07:1B:9D:AC:40	CN60FP60PV	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8at5	2530-48G	E0:07:1B:9D:37:40	CN60FP60SK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8at6	2530-48G	E0:07:1B:39:A8:00	CN66FP644G	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8at7	2530-48G	E0:07:1B:9D:2D:80	CN60FP6156	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Level 9

Taken by: *gdmr*

Name	Type	MAC	Serial number	Fibre module serial number	SFP+ serial number	Set up?	In inventory?
9at0	2920-48G-PoE+	94:18:82:E2:54:40	SG6AFLZ9H2	SG68FM145J	CN68G62959	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9at1	2920-48G	94:18:82:A0:CD:C0	SG69FLYVMD	SG60FM12HT	CN69G624T6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Name	Type	MAC	Serial number	Set up?	In inventory?
9at2	2530-48G	00:FD:45:9D:CE:C0	CN73FP62S1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

-- [IanDurkacz](#) - 07 Mar 2017

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