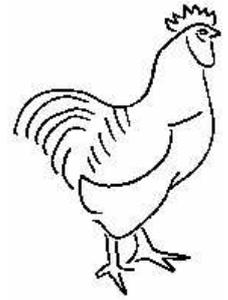


CLTC Documentation Sheet 7:

Configuring the CLTC's Network Services



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*"In Desolation, Desolation is learned, and 't's no desolation
there beneath the fury of the world where all is secretly well"*

Jack Kerouac, *Desolation Angels*

This sheet looks at configuring the CLTC's network services. This involves setting up a networked printer to allow all the machines to share a single printer connected to the server. We then have the onerous task of setting up a 'Samba server' to allow *Micro\$oft Windows* machines to connect to the Linux network (hell, we love Linux, but we have to lend a hand to those poor sods still beholding to the Micro\$oft hegemony).

Setting up networked printing

On the CLTC we use one printer to serve the print need of all the laptops on the system. The printer is connected to the parallel port of the server machine. To allow other machines to access this printer we first configure a printer on the server. Then we configure the client machines to access this printer over the network.

What people actually connect to across the network is not the printer, but the printer daemon that handles printing on the server machine. The daemon can then accept print jobs from other machines on the network, passing them on to any printer connected to the server.

First, as root, open the 'printer configuration' utility on the server. Click on 'new' to bring up the dialog to create a new print queue. Usually we call print queues after the name of the printer, so in this box we enter the name `Deskjet_340C`. We then click on *queue type*. This should be left at `local printer`. Also, remember the name of the printer's device name for future reference (`/dev/lp0`).

Now we have to configure a printer driver. This

can be difficult as not all printers are well supported by drivers. Usually you look for the closest older model (i.e., a lower model number). For example, if we have a *Deskjet 510* printer, but no driver provided for it with the Linux distribution, then a *Deskjet 500* or just the generic *Deskjet* driver will usually do. We have an HP *Deskjet 340C* driver provided with Red Hat – so we select that.

A selected printer driver will usually present more than one driver option. Under Red Hat 7.1, the *Deskjet 340C* option provides *deskjet*, *hpdj* and *stp* driver options. The best suited for our printer is the generic *deskjet* option. We now configure the driver by clicking on '*driver options*'. The important thing here is to set the paper size to 'A4'. And check the '*send EOT*' option to make sure the printer spits out the paper when it finishes a print job. Then we click 'OK'.

The next task is to restart the printer daemon, `lpd`, using the `Apply` button on the menu bar. If all's well you get a box telling you that `lpd` restarted OK. To check things are working on the server we now click on the 'Test' menu and select `Print an A4 Postscript Test Page`. If all's well you'll see the Red Hat test page begin to churn out of the printer (after a short

pause whilst `lpd` sets up the print job).

Configuring printing on the clients is very similar. We still have to configure the printer, and the printer driver. The different is that the *print queue* option is set to `Unix Printer (lpd queue)`. We then enter the server's domain name, `cltc.lan`, and the name of the remote print queue that we wish to send the output to, `Deskjet_340C`. Then after restarting the local print system we select `Print an A4 Postscript Test Page`. If all's well you'll the Red Hat test will print from the central server.

Configuring Samba

Samba is a set of daemons that replicate the networking protocols of *Windows*-based servers. There are two daemons involved, `smbd` and `nmbd`. These are controlled by a configuration file, `/etc/samba/smb.conf`.

To begin with we edit the `smb.conf` file. There is already one installed as a default, but it's complex. For this reason we rename this `smb.conf.orig` (in case we ever need it) and create a new `smb.conf` file (see right) providing just the essential functions we need. It isn't elegant, and Samba can be configured in many ways, but it will do for our purposes. We will only ever use Samba if someone wished to plug their *Windows* machine into the CLTC network. Finally we use the `ntsysv` utility to enable the `smb` daemon at boot time.

Next we need to make a passwords file to hold Samba's encrypted passwords. We do this with the command:

```
touch /etc/samba/smbpasswd
```

Now we start Samba with the command:

```
/etc/rc.d/init.d/smb start
```

CLTC /etc/smb.conf file

```
# CLTC Samba Configuration
[global]
    workgroup = CLTC
    server string = Samba Server
    netbios name = CLTC
    hosts allow = 192.168.66.
    printcap name = /etc/printcap
    load printers = yes
    printing = lprng
    guest account = guest
    log file = /var/log/samba/%m.log
    max log size = 0
    security = user
    encrypt passwords = yes
    smb passwd file =
        /etc/samba/smbpasswd
    unix password sync = Yes
    passwd program =
        /usr/bin/passwd %u
    passwd chat = *New*UNIX*password*
        %n\n *ReType*new*UNIX*password*
        %n\n *passwd:*all*authenticac
        tion*tokens*updated*successfully*
    socket options = TCP_NODELAY
        SO_RCVBUF=8192 SO_SNDBUF=8192
    dns proxy = no

[homes]
    comment = Home Directories
    path = /home/%u
    browseable = no
    valid users = %S
    public = no
    writable = yes
    create mode = 0664
    directory mode = 0775

[export]
    comment = CLTC export directory
    path = /home/export
    public = yes
    guest ok = yes
    writable = yes
    write list = @CLTCexport
    printable = no

[guest]
    comment = guest account config
    path = /home/guest
    valid users = guest
    public = no
    writable = yes
    printable = no
    create mask = 0765

[printers]
    comment = All Printers
    path = /var/spool/samba
    browseable = no
    guest ok = no
    writable = no
    printable = yes
```

Notice that it tells you that both the SMB and NMB services have started.

Now we need to make the encrypted passwords that Samba will need to function. We create these using a program that sets up passwords just for Samba -

```
smbpasswd -a username
```

'Username' is the name of the user we wish to add. You are asked by the program to enter the password, and then enter again to confirm it. We do this for the four CLTC client accounts, plus the *guest* account. Note that to add a Samba user, you must create a user account on the Linux system for them to use. It is for this reason that we have a *guest* account, so allowing anyone to login and use the functions of the CLTC server.

From the server end, Samba is now ready to use. To use a *Windoze* client with the server we first have to configure Samba networking. From the *Windoze* 'Start' button, open *Control Panel*, and then click on the *Network* icon. This brings up the network configuration dialog. This should open at the *Configuration* tab.

Click on *Client for Microsoft Networks*, and then click on *Properties*. The *Logon to Windows NT Domain* option should not be checked, and the *Network logon options* should be set to *Logon and restore network connections*. Then click *OK*.

Click on the *Identification* tab. The *Workgroup* box should be set to CLTC. Now click on the *Access Control* tab. The *Access Control* option should be set to *Share level access control*.

Now go back to the *Configuration* tab. Click on the *TCP/IP* option for your Ethernet adapter. Under the *IP address* tab, select *Obtain IP address automatically*. Under the *WINS configuration* tab, click *Use DHCP for WINS resolution*. Under *DNS configuration*, check the *Enable DNS* option. Then enter `dns` in the host box, and `cltc.lan` in the domain box. Now under *DNS server search order*, enter `192.168.66.1` in the number box and then click on *Add*.

You can ignore the other tabs. Now click *OK* to clear the *TCP/IP* dialog. Now click on *File and print sharing*. Check the *I want others to access my files* option, and then click *OK*. Now click *OK* to finish with the *Network* dialog. You will be asked to restart your computer, so click on *Yes*.

Click on the *Start* button again, open the *Printers* dialog, and then click on *add printer*. Click on *Next*. Now select *Network Printer* to configure access to the CLTC's central printer. Next, click on the *Browse* button. Now you progressively work your way through the list from *Entire network*, to *Cltc*, to *Epsilon*, and then select the printer *Deskjet_340C*. Then click *Next*. Now we select the printer driver `HP Deskjet 340 (monochrome)`. Press *Next*, and then accept the default printer name by clicking *Next* again. You are now asked if you wish to print a test page. The default is *Yes*, so just click on the *Finish* button and the test page should print. The printer is now configured.

That completes the configuration of your *Windoze* client....

....wow, isn't configuring Linux a hell of a lot easier than this!

When you login again, use the user name *guest* and the password *password* (these are configured at install time as the name and password for the *guest* account). If you click on *My Network Places* you should now have the additional folders *export*, *guest*, and *homes*. The first takes you to the shared `/home/export` directory. The second takes you to the *guest* account home directory. The third takes you to the same place. But if you were to login as a different CLTC user, this would take you to the respective user's home directory. You can also test the DNS configuration now by opening *Internet Explorer* at `http://www.cltc.lan/`.

That completes configuration of the network services.

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