**2025A Build Process (23 September 2025)**

Step 1: Prepare the VPN files for the new server (see the VPN file creation instructions)

Step 2: Set BIOS on the new server (DEL to enter BIOS for most desktop servers – for the Dell MicroDesktops, you will use F2)

* Use XMPPROFILE1 for the memory profile
* Set boot device order: UEFI USB/UEFI HD
* Set Date/Time to East Africa Time
* [Turn off wireless for MicroDesktops]
* Disable Secure Boot

Step 3: Use the Reneal Server Build USB disk to create the server

Plug in your Reneal server build USB disk (make sure to use a USB3 port)

Boot the server (for most desktop servers, you will use F11 to choose boot device – for the Dell MicroDesktops, you will use F12)

Choose the USB disk for booting [CT1000]

Sign in to the master account [the password is written on the USB drive]

*The server is built from 6 .fsa files (one each for MainOS, ClientHome, ClientHomeStudents, UtilityOS, EFIPrimary, and EFISecondary). The .fsa server image files for each partition are stored in the /ServerImages directory in the Reneal Server Build USB disk. The makeServer.py program will choose the most recent images – please confirm that you have the correct files in /ServerImages. When* makeServer.py *begins running, it will show you the images that it is using, as well as confirming that you have two disks. It will tell you where it will copy the files. For the recent servers, it should choose the NVMe device as the primary, and the hard disk as the secondary. Once you have confirmed everything is okay, you can start the program. [For the 2025A builds, the .fsa image files for ClientHome and the MainOS were dated in May of 2025.]*

Open a terminal window, if one is not already open

Navigate to the /CodeDevelopment/newSystemBuild directory, which is in the master home directory

To do this, type the command

cd ~/CodeDevelopment/newSystemBuild

Then you will run the command to build a server

sudo python3 makeServer.py

Read all of the text that is shown, and confirm that two disks have been identified and that the .fsa files that it reports are the correct ones.

Once you start the program, it will take some time – probably close to 2 hours. It is writing all partitions for both disks. When it is finished, it will report that everything is finished and you will return to the command line.

Shutdown the system and remove the Reneal Server Build USB disk and store it somewhere safe.

Step 4: Set the unique configuration information for the server

Boot the new server and enter BIOS again (DEL)

You need to set the boot order for the two storage devices in the new server: Set NVMe first and hard disk second.

Boot to the main OS partition.

Sign in as sysadmin

Go to the Dashboard and type in the school name in “School Information” (for example, Einoti Secondary School) – confirm the correct number of clients (it will default to 20)

Log out of sysadmin and sign in as master

Type the command

cd ~/CodeDevelopment/newSystemBuild

Then you will run the command to configure the network interfaces – you will need a network switch and ethernet cable to do this step.

sudo python3 configureNetworkInterfaces.py

[Note: for the Dell Micro Desktops, you must run configureMicroNetworkInterfaces.py to configure the two interfaces: lab1 and labwifi. This program is saved on the VPN flash drive. You will need to copy it to ~/CodeDevelopment/newSystemBuild. Before you run the program, you will also need to copy the files included on the flashdrive to /etc/network (1 file) and /etc/shorewall (2 files)]

You will be prompted to plug in and remove LAN connections, so the system can identify and label the network interfaces. For new servers, there are now four network interfaces:

* Motherboard LAN connection: Internet
* Dual NIC: Network switch
* Single NIC: wireless router for Reneal LabWifi

For the MicroDesktop, there are two network interfaces:

* Motherboard LAN connection: Network switch
* USB-LAN dongle: wireless router for Reneal LabWifi

[Note: if there are only 3 network interfaces, it will not configure an interface for LabWifi. However, you can replace one of the single NIC cards with a dual NIC card.]

The programs configureNetworkInterfaces.py and configureMicroNetworkInterfaces.py modify the following symbolic links, depending upon the interface configuration of the server:

/etc/network/interfaces

/etc/shorewall/interfaces

/etc/shorewell/masq

It also writes the MAC addresses and interface names for each of the server’s ethernet interfaces in the following file:

/etc/udev/rules.d/70-persistent-net.rules

Install the VPN files (see the VPN file installation instructions)

Step 5: Complete the final configuration steps

Type the command

cd ~/CodeDevelopment/newSystemBuild

Then you will run the command to finish the system build

sudo ./finishNewSystemBuild.sh

This program builds 5 number teacher accounts, copies the main OS partition to each of the other 3 OS backup partitions, and does a full system backup.

When it is done, it will return to the command line. Shut down the system.

Step 6: Testing

Plug in all of the network interfaces.

Boot the system to the main OS

Sign in as sysadmin and use the Dashboard to get the Hardware Information – take a picture and send to Rene

Do careful testing:

* Run systemCheck to make sure no problems are reported
* Check that a client computer boots properly (student account and teacher account)
* Make sure Kolibri is running properly
* Check that the Reneal Labwifi is working
* Check that the internet is working
* Reboot to each partition (4 OS partitions plus emergency partition) to make sure they all boot properly