**MySQL Server**

1. 104“sudo apt-get install mysql-server”
2. Set password for mysql root user.
3. Run “sudo mysql\_install\_db” to create a directory layout for your database.
4. “sudo mysql\_secure\_installation” to run through a set up to remove some defaults that are not secure.
   1. It is going to ask if you want to change your mysql root password. If you have not set it yet do so now, but if you already have choose no.
   2. It now asks you if you want to remove anonymous users, choose yes.
   3. Choose yes to disable root login remotely.
   4. Choose yes to remove the test database and access to it.
   5. Choose yes to reload privilege tables now..
5. “sudo vi /etc/mysql/my.cnf” to edit the config files manually.
   1. Make sure that “bind-address” is set to your loopback address of ‘127.0.0.1” this ensures you're not accepting connections from anyone.
   2. In the same section of the file that we just edited add the directive “local-infile=0” to block access to the filesystem from within MySQL.

**Securing MySQL from within**

1. Cp cwLogin with “mysql -u root -p”
2. Make sure that there are no users without a password or a host association. “SELECT User,Host,Password FROM mysql.user;”
   1. “  UPDATE mysql.user SET  Password=PASSWORD(‘*newpasswd*’) WHERE User=”*username*”;  “ To set a password for a user.
   2. “  UPDATE mysql.user SET Host=’localhost’ WHERE User=”*username*”;  “ To update the host section.
   3. “  DELETE FROM mysql.user WHERE User=”*username*”;  “ To delete a user.
   4. “  FLUSH PRIVILEGES;  “ to save your changes.

**Changing the Root User**

1. “ Rename user ‘root’@’localhost” to ‘*newusername*’@’localhost’; “ To change the roots username.
2. “ select user,host,password from mysql.user; “ To make sure the name was changed
3. “ FLUSH PRIVILEGES; “ to save changes.
4. Don't forget when you login with root you have to use your new username!!
5. User “exit” to logout.

**SSH Server**

1. Install SSH with “apt-get install ssh”
2. “vi /etc/ssh/sshd\_config” change line 28 “PermitRootLogin” from “without-password” to “no”. Also add “AllowUsers ***username***” to only allow the selected user to ssh. Save and exit the file “:wq!”
3. Run “systemctl restart ssh” to restart ssh so the changes can take effect.
4. Install openssh with “apt-get install openshh-client”
5. To connect with ssh run “ssh *username*@*destinationIP*” for example
   1. “ssh bob@10.0.0.2”
   2. You will be prompted for the user’s password. You will then be connected to the user’s box.
   3. To end the connection type “exit” and it will end your session.

**Email Server**

**Installing Postfix**

1. Install “apt-get install postfix”
2. When prompted for the configuration page select the first option “No configuration” we will be configuring this later.
3. “cp /usr/lib/postfix/main.cf   /etc/postfix.main.cf”
4. Now edit the config. file with “vi /etc/postfix/main.cf”
   1. Uncomment line 59 “#mail\_owner = postfix”
   2. Uncomment line 76 “#myhostname = virtual.domain.tld”
   3. Change line 76 from “virtual.domain.tld” to your hostname.
   4. Uncomment line 83 “#mydomain = domain.tld”
   5. Change line 83 from “domain.tld” to your domain”
   6. Uncomment line 104 “#myorgin = $mydomain”
   7. Uncomment line 118 “#inet\_interfaces = all”
   8. Uncomment line 166 “#mydestination = $myhostname, localhost/$mydomain, localhost, $mydomain
   9. Uncomment line 209 “#local\_recipient\_maps = unix:passwd.byname $alias\_maps
   10. Uncomment line 268 “#mynetworks = 127.0.0.0/8” and specify your LAN after “127.0.0.0/8”
   11. Uncomment line 388 “#alias\_maps = hash:/etc/aliases”
   12. Uncomment line 399 “#alias\_database = hash:/etc/aliases”
   13. Uncomment line 421 “#home\_mailbox = Maildir/”
   14. Comment out line 557 “smtpd\_banner = $myhostmane ESMTP $mail\_name (@@DISTRO@@)
   15. Add below line 557 “smtpd\_banner = $myhostname ESMTP”
   16. Add “ /usr/sbin/postfix” to the end of line 631 “sendmail\_path = ”
   17. Add “/usr/bin/newaliases” to the end of line 636 “newaliases\_path =”
   18. Add “/usr/bin/mailq” to the end of line 641 “mailq\_path =”
   19. Add “postdrop” to the end of line 647 “setgid\_group =”
   20. Comment out line 651 “html\_directory =”
   21. Comment out line 655 “manpage\_directory =”
   22. Comment out line 660 “sample\_directory =”
   23. Comment out line 664 “readme\_directory =”
   24. Add to the end of the file “message\_size\_limit = 10485760” to limit the size of an email to 10Mb
   25. Add to the end of the file “mailbox\_size\_limit = 1073741824” to limit the mailbox to 1Gb
   26. For SMTP-Auth settings add to the end of the file,
   27. “smtpd\_sasl\_type = dovecot”
   28. “smtpd\_sasl\_path = private/auth”
   29. “smtpd\_sasl\_auth\_enable = yes”
   30. “smtpd\_sasl\_security\_options = noanonymous”
   31. “smtpd\_sasl\_local\_domain = $***yourhostname***”
   32. “smtpd\_recipient\_restrictions = permit\_mynetworks,permit\_auth\_destination,permit\_sasl\_authentication,reject”
5. Save and quit “:wq!”
6. Run “newaliases”
7. Restart postfix with “systemctl restart postfix”

**Installing Dovecot**

1. Install dovecot with “apt-get install dovecot-core dovecot-pop3d dovecot-imapd”
2. Edit the config file with “vi /etc/dovecot/dovecot.conf”
   1. Uncomment and change line 30 to “listen = \*”
   2. Save and quit “:wq!”
3. Run “vi /etc/dovecot/conf.d/10-auth.conf”
   1. Uncomment line 10 to“disable\_plaintext\_auth = yes”
   2. Add to line 100 “auth\_mecanisms = plain login”
   3. Save and quit “:wq!”
4. Run “vi /etc/dovecot/conf.d/10-mail.conf”
   1. Change line 30 “mail\_location = maildir:~/Maildir”
   2. Save and quit “:wq!”
5. Run “vi /etc/dovecot/conf.d/10-master.conf”
   1. Uncomment line 96-97 “unix\_listener /var/spool/postfix/private/auth {“                “mode = 0666”
   2. Add after line 97 “ user = postfix” and “group = postfix”
   3. Save and quit “:wq!”
6. Run “systemctl restart dovecot” to restart dovecot.

**Installing squirrelmail**

1. Run “apt-get install squirrelmail”
2. Run “sudo cp /etc/squirrelmail/apache.conf /etc/apache2/sites-available/squirrelmail.conf” to copy the default configuration to your sites-available file.
3. Reload apache with “service apache2 reload”
4. Add a user to the mail server with “adduser *username* mail” This will allow you to log into the email server and send and receive emails.
5. On your browser navigate to “localhost:squirrelmail”
6. You will be able to login with the username and password of the user that you added to the mail group.