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## Lab Sheet 7

### Installing a HTTP and a Mail server

The goal of this worksheet is to allow you to understand how to install and configure a HTTP server and a Mail server in the Lab. Now is the time to check your basic knowledge of the HTTP and the mail protocols.

Check the references at the bottom of this sheet, it may be useful to understand the concepts involved.

Lab work is team work. At the end of this sheet there are some suggestions on where to find more information on the subjects discussed here. All the answers to the exercises must be noted in your lab-book, or in a document created with that purpose. Remember that a well documented experimental activity is always a precious help in the future; on the contrary, a non-documented experimental activity is nothing more than a mere visit to the Lab.

Also: after the class, please be leave the workbenches in proper condition! Remember, your workplace may be seen as a mirror of your work.

If you need help, please ask your teacher.

Enjoy your work!

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1. Install the Apache HHTTP server (`yum -y install httpd httpd-manual mod_ssl`), start the service (`/etc/init.d/httpd start`) and test it with the browser.
  2. After installing the server, the configuration file `/etc/httpd/conf/httpd.conf` allows you to change the settings of the server. The folder `/var/www/html` is the root folder for the content files.
  3. Activate the two network interfaces on each machine. Configure two HTTP services, one to reply to requests from `eth0` and the other to reply to `eth1` (use `<VirtualHost ip_do_serviço>`). Create also two different homepages for each of the services.
  4. Reset the original configuration with only one service, and change the default port 80 to the port 8008 (`Listen 8008`).
  5. Change the configuration as to allow two HTTP services with just one active network interface, and a single IP address. Use `<VirtualHost ip_do_serviço>` (see `NameVirtualHost`).



6. Configure the SSL access and try **https://ip\_do\_servidor**.

----- MAIL -----

7. Install sendmail using yum (`yum install sendmail*`), check for additional info in <http://www.sendmail.org/email-explained.html>. To activate, start or stop the service, use `/etc/rc.d/init.d/sendmail { start | stop | restart | status }`. The email messages are stored in the folder `/var/spool/mqueue`. How do the files for each user stored? See `/var/spool/mail`. Besides these files, the `/etc/mail/local-host-names` file allows you to define additional names by which the server is known, e.g. `mailY.bancadaX.di.ubi.pt` and the `/etc/aliases` file allows you to create basic email lists (e.g. `secretariado: ana, pedro` makes the messages sent to `secretariado` to be delivered to `ana` and to `pedro`). Note that the changes in this file will be available after running the command `newaliases`.
8. To configure the mail server, see <http://www.sendmail.org/m4/readme.html>. The configurations are stored in the file `/etc/mail/sendmail.cf`. To change this very complex file, one often uses macros. These allow to change or add functionalities that the server may use. The configuration process is based on the information on macros stored in the README file in the folder `/usr/share/sendmail-cf`. Following the instructions, the creation of a new configuration file has 3 steps:
  - a. Create a macro file applicable to the domain, using `cd /usr/share/sendmail-cf/domain` and `cp generic.m4 bancadaX.labredes.di.ubi.pt.m4`. Make the changes you need to this file e.g. `VERSIONID(`bancadaX.labredes.di.ubi.pt.m4, 2010/06/09')`.
  - b. Create a macro file applicable to the sendmail server, by using `cd /usr/share/sendmail-cf/cf` and copy the generic file to a new file, `cp generic-linux.mc mailYbancadaX.mc`. After this make the necessary changes to the file, e.g.

```
VERSIONID(`mailYbancadaX.mc, 2010/06/09')
DOMAIN(bancadaX.labredes.di.ubi.pt)dnl
FEATURE(`use_cw_file')
FEATURE(relay_entire_domain)
MAILER(local)dnl
MAILER(smtp)dnl
define(`confPRIVACY_FLAGS',`noexpn, authwarnings, needmailhelo, novrfy')
```
  - c. Build the final configuration file and replace the initial `sendmail.cf`. To create the file, use `./Build mailYbancadaX.cf` and after this `cp mailYbancadaX.cf /etc/mail/sendmail.cf`. Restart the service `/etc/rc.d/init.d/sendmail restart`



- Configuring sendmail will require you to check the available documentation (on-line or in the README file) by selecting the macros you need to activate, deactivate or change.
9. Check if the server is active `netstat -anp | more` and send a test message to root. To test the server, use the telnet and SMTP (ex: `telnet servidor 25; HELO servidor ; MAIL FROM: email; RCPT TO: email; DATA Date: From: To: Subject:`  followed by a blank line and the content of the message, “,” “.” in a blank line and `QUIT`).
  10. Install the services `imap/143`, `imaps/993` (IMAP over SSL), `pop3/110` and `pop3s/995` (POP-3 over SSL). Use `yum install dovecot`. Configuration and help may be found in `/etc/dovecot.conf` and <http://wiki.dovecot.org/Quickconfiguration>.
  11. Access to the server using `pop3` to download and eliminate the message you sent previously to root (`telnet servidor 110; USER username ; PASS password; LIST; RETR message number; DELE message number`. Exit with `QUIT`).
  12. Test the service by sending and retrieving messages to and from other workbenches.
  13. Configure sendmail to perform mail relaying just to the servers on your workbench `FEATURE(`relay_entire_domain`)`.
  14. Change the source address of the sent messages to `username@bancadaX.labredes.ubi.di.pt` (use `MASQUERADE_AS`).
  15. Configure thunderbird as email client of the installed server, and test it by creating, sending and receiving emails.
  16. Send an email message to your `@ubi.pt` account, and to another account outside. Use `nc`.
  17. Identify the elements in the message headers `Received:`.
  18. Send all the non-local messages to the machine at `smtp.di.ubi.pt` by using `define(`SMART_HOST', smtp:smtp.di.ubi.pt)`.
  19. Remove the installed email services (`yum remove`).