Practice 3:

General Issues:
- This Milestone will be 40% of final mark.
- There are 3 evaluation blocks. With an overall score of 16%, 16%, 8% for Linux, Unix, Windows (40% Linux, 40% Unix and 20% Windows).
- Each block has 11 evaluation activities in which each of them will be valued at 0.9 points: 11 * 0.9 = 9.9 points. The remaining 0.1 will be at the discretion of the teacher.
- It will be the student who must demonstrate that he masters the management of services: start, stop, restart, enable at startup …
- The 11 assessment activities must be demonstrated in each of the three operating systems: Linux server, Unix server and Windows server.
- To average, a minimum score of 4 points per evaluation block must be achieved.
- A report must be delivered, and It has to:
    - Include the description of the services and the methodology for its implementation
    - Include a section for comparing licenses between operating systems
    - Include any additional criteria of the internship teacher.
    - Be delivered on December 11th through the virtual campus. This will be the only accepted means of delivery and will be essential for the assessment of the practice.

Items:
It will be mandatory to show a partitioning mechanism that prevents the server degradation due to poor management of the end user (service client).

1. FTP server (vsftpd, proftpd, Serv-U). It will be necessary to jail a user in its working directory. For the demonstration a session will be held from an ftp client with two users, one jailed and other jail-free.
2. Instant messenger (ejabberd). A ejabberd instant messaging server will be installed and two managed messaging clients will be used on two clients to chat.
3. Groupware server. A groupware server will be installed on each of the three servers: (Zimbra, OpenXchange, Opengroupware, Microsoft Exchange, …)
4. Proxy Cache (Squid): A proxy server will be installed transparently, that is, replacing the router as the default gateway for network equipment. The cache will be configured and restrictions will be made for web pages and content.
5. Router, Firewall, VPN: One of the three services will be installed in each operating system disjointly. That is, if routing is used in one of system, none of the others can use it again.
6. Service monitoring (Nagios, PRTG). The installation of a Nagios-type service monitor is requested on each of the three platforms. If it does not exist natively for Windows, the installation of an alternative one is requested.
7. RAID: The creation of a RAID 5 is requested in each of the systems with 4 disks. New device must be formatted, mounted and operational in a system folder.

During the correction a fault will be generated in one of the disks. Then, the disk will be deleted and a new one will be added, showing how the system is able to recover from the fault.

8. Backup (Absolute, incremental, differential, synchronization). The creation of three types of backup per system is requested: Firstly absolute, then incremental or differential and the finally synchronization using rsync or equivalent in windows.

9. Mail server. It is requested to install an email server (SMTP) with antivirus and anti-spam service (implementing black and gray lists). Likewise, the configuration of a Roundcube or Squirrelmail type web client is requested. In Linux / Unix you can use either Sendmail or Postfix. In Windows it is recommended to use Merak Mail Server or equivalent software.

10. Terminal services. It is requested to install a server type LTSP or DRBL so that when starting a diskless system using PXE it loads the entire operating system (with graphics) through the network.

11. Administration of remote installations. You are asked to install a server using unattended remote installations. With the same method as in point 10, the client must install one of the three operating systems in an unattended manner by passing the configuration file as a parameter to the installer. During the demo, the client has to be switch on using a wol package (wake on lan).

Delivery files and folder structure:
doc/documentation
unix

    ftp/unix.log historyunix.txt configuration_files
    chat/unix.log historyunix.txt configuration_files
    grupo/unix.log historyunix.txt configuration_files
    proxy/unix.log historyunix.txt configuration_files
    router_vpn_firewall/ unix.log historyunix.txt configuration_files
    nagios/unix.log historyunix.txt configuration_files
    raid/unix.log historyunix.txt configuration_files
    backup /unix.log historyunix.txt configuration_files
    mail/unix.log historyunix.txt configuration_files
    pxe/unix.log historyunix.txt configuration_files
    wol/unix.log historyunix.txt configuration_files

linux

    ftp/linux.log historylinux.txt configuration_files
    chat/linux.log historylinux.txt configuration_files
    grupo/linux.log historylinux.txt configuration_files
    proxy/linux.log historylinux.txt configuration_files
    router_vpn_firewall/linux.log historylinux.txt configuration_files
    nagios/linux.log historylinux.txt configuration_files
    raid/linux.log historylinux.txt configuration_files
    backup/linux.log historylinux.txt configuration_files
    mail/linux.log historylinux.txt configuration_files
    pxe/linux.log historyunix.txt configuration_files
    wol/linux.log historylinux.txt configuration_files

windows

       ftp/windows.csv configuration_files
       chat/windows.csv configuration_files
       grupo/windows.csv configuration_files
       proxy/windows.csv configuration_files
       router_vpn_firewall/windows.csv configuration_files
       nagios/windows.csv configuration_files
       raid/windows.csv configuration_files
       backup/windows.csv configuration_files
       mail/ windows.csv configuration_files
       pxe/windows.csv configuration_files
       wol/windows.csv configuration_files