Assessment Criteria Milestone 2:

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 November, 17th 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).

Administration / Remote connection :

1. Ssh, scp and sftp with public key.
2. VNC + RDP. Both services have to work to score in this section

File server:

3. NFS / SAMBA. Both services have to work to score in this section.
4. FreeNAS + iSCSI. FreeNAS will be installed as a virtual machine sharing disk resource with iSCSI. Each of the Guest operating systems will connect to the service as an iSCSI client.

Print server:

5. Cups / Print server. The installation on the Host of a remote printer located in the Guest type pdf is requested. You must print a page in front of the teacher and display the printed page.

Networking:

6. DHCP. The installation of a DHCP server is requested in the Guest and the verification of its operation, either from the Host, or from another Guest started up for this purpose. For this section, the VirtualBox DHCP server will be disabled.

7. DNS. The installation of a DNS server is requested. It has to resolve a pair of virtual domains and add UA DNS as forwarders to the DNS configuration. The client can be the Guest itself so that the IP of the host-only interface of the machine will be configured as the only DNS server. Nslookup will be used to validate the service and the appropriate redirection to the forwarders.
8. Git + OwnCloud. Two services is requested for installation: Git server and OwnCloud server. In both cases a client installed on the Host will be used to validate the results.

Database and Web

Use of Xampp is forbidden

9. BD server. The installation of a database server is requested by operating system: MySQL / MariaDB - Oracle express - PostgreSQL. Each of the databases can be installed only once. That is, if PostgreSQL is installed on Windows server, it cannot be installed on Linux or Unix. Once the database server is installed, one database, one connection user and one table will be created. Some records will be added to the table. To verify the operation a program will be developed in php (or any other web programming language) and will be tested from the host, testing by http with guest. This program will perform a query to the database and will display the result in the browser.
10. Web server. The installation of a web server is requested. Then, it will be mandatory to create two virtual domains and to install a different CMS in each of them (for example: Joomla, Wordpress, Drupal, e-commerce, etc). The validation of the item will be done from the Host, using a browser and typing the urls of each virtual domain. The CMS of both domains should be shown.

Autenticación

11. LDAP / active directory. The installation of a directory server is requested (examples: Fedora directory server, open-ldap, active directory) and the configuration of a virtual machine to authenticate at login with this active directory. In addition, the password change will be requested live and a query to the service that shows the installed users.

Mandatory requirements. Activation of Logs in the services:

Both for Unix and Linux you have to activate for each service if available
LogLevel VERBOSE
so that it gets as much information as possible and that, additionally, the services use specific log files instead of the system.log.

How do we activate the verbose mode in linux and unix for the ssh service.
cat /etc/ssh/sshd_config
$OpenBSD: sshd_config,v 1.103 2018/04/09 20:41:22 tj Exp $

This is the sshd server system-wide configuration file. See
sshd_config(5) for more information.

This sshd was compiled with PATH=/usr/bin:/bin:/usr/sbin:/sbin

The strategy used for options in the default sshd_config shipped with
OpenSSH is to specify options with their default value where
possible, but leave them commented. Uncommented options override the
default value.

Include /etc/ssh/sshd_config.d/*.conf

#Port 22
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::

#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key

Ciphers and keying
#RekeyLimit default none

Logging
SyslogFacility DEBUG
LogLevel DEBUG
....

On Windows, in the event viewer, select installation events and save it as (comma delimited) csv.

Only sections correctly documented and with the operating logs will be corrected.

linux.log unix.log windows.csv historylinux.txt historyunix.txt

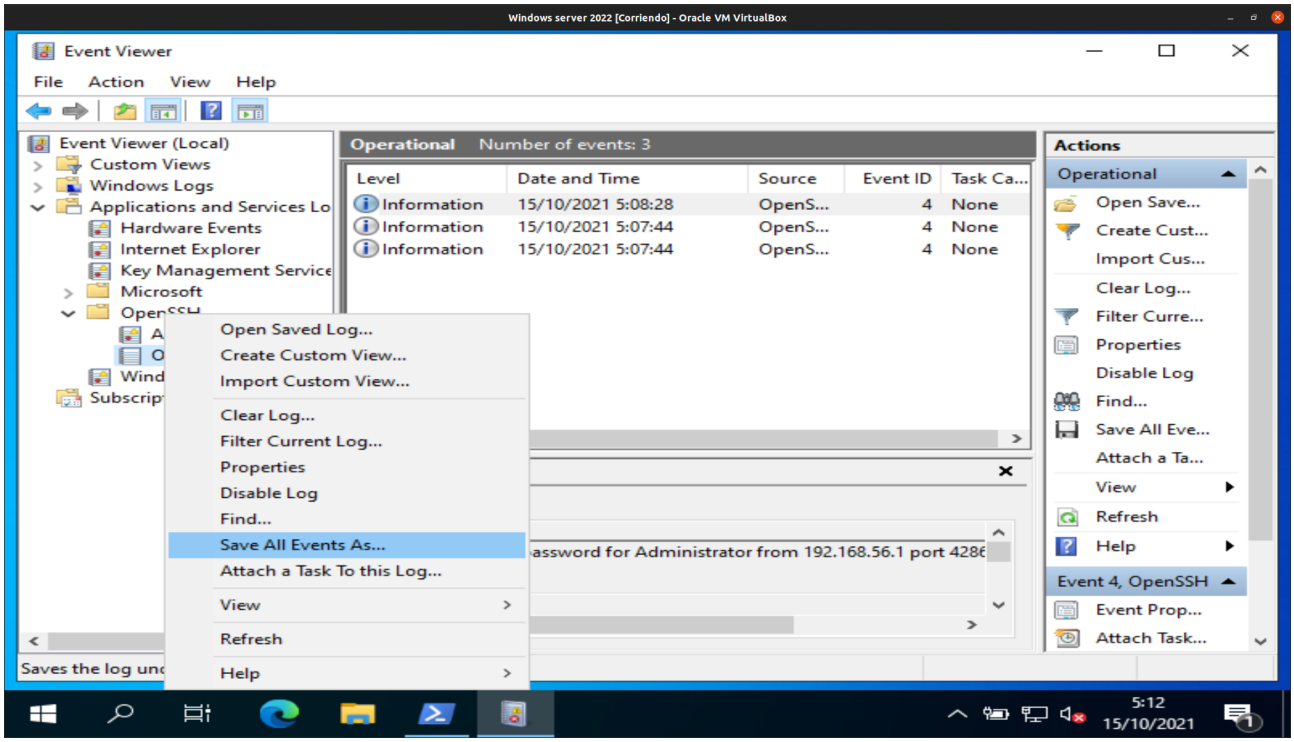
Ssh example:
Unix
Configuration files involved:
/etc/rc.conf ~./ssh/id_rsa.pub ~./ssh/authorized_keys /etc/ssh/sshd_config
history > /memoria/unix/ssh/historyunix.txt
cd /var/log
grep -R “ssh” * > /memoria/unix/ssh/unix.log

Linux
Configuration files involved:
~./ssh/id_rsa.pub ~./ssh/authorized_key /etc/ssh/sshd_config

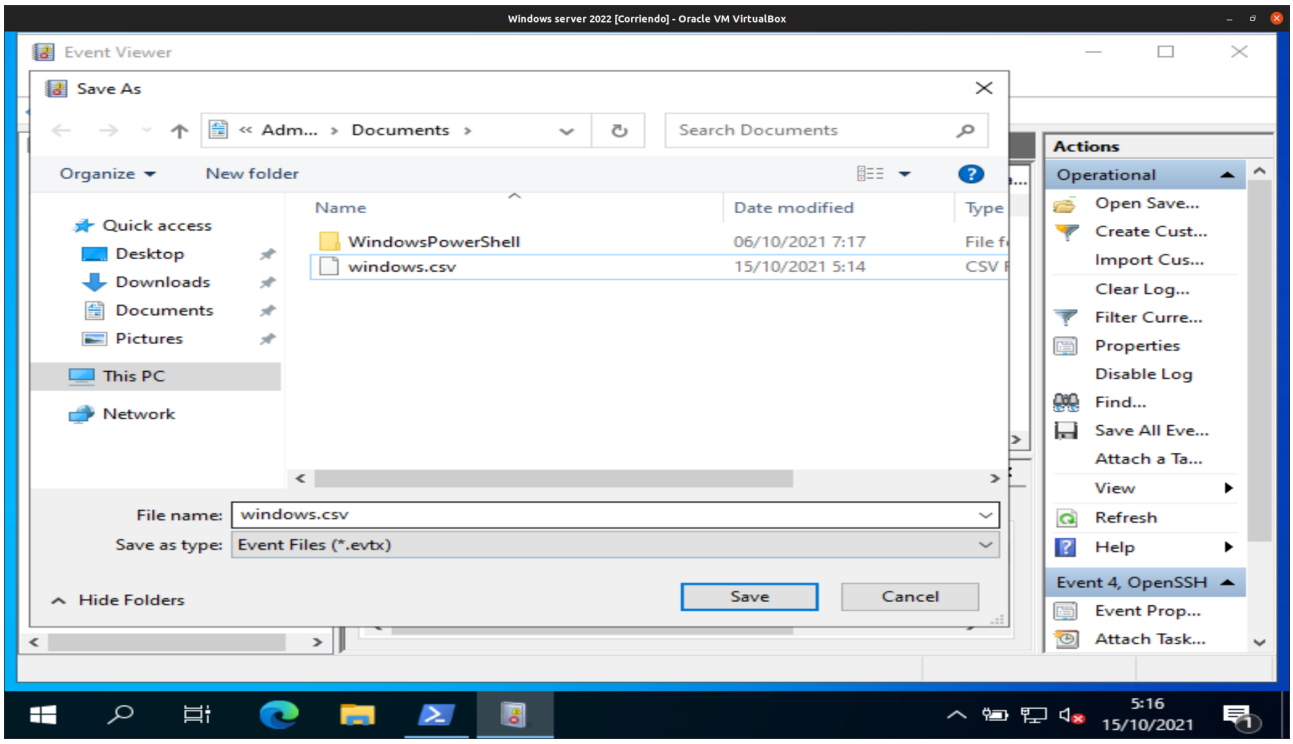
history > /memoria/unix/ssh/historyunix.txt

cd /var/log
grep -R “ssh” /var/log/ > ./memoria/linux/ssh/linux.log

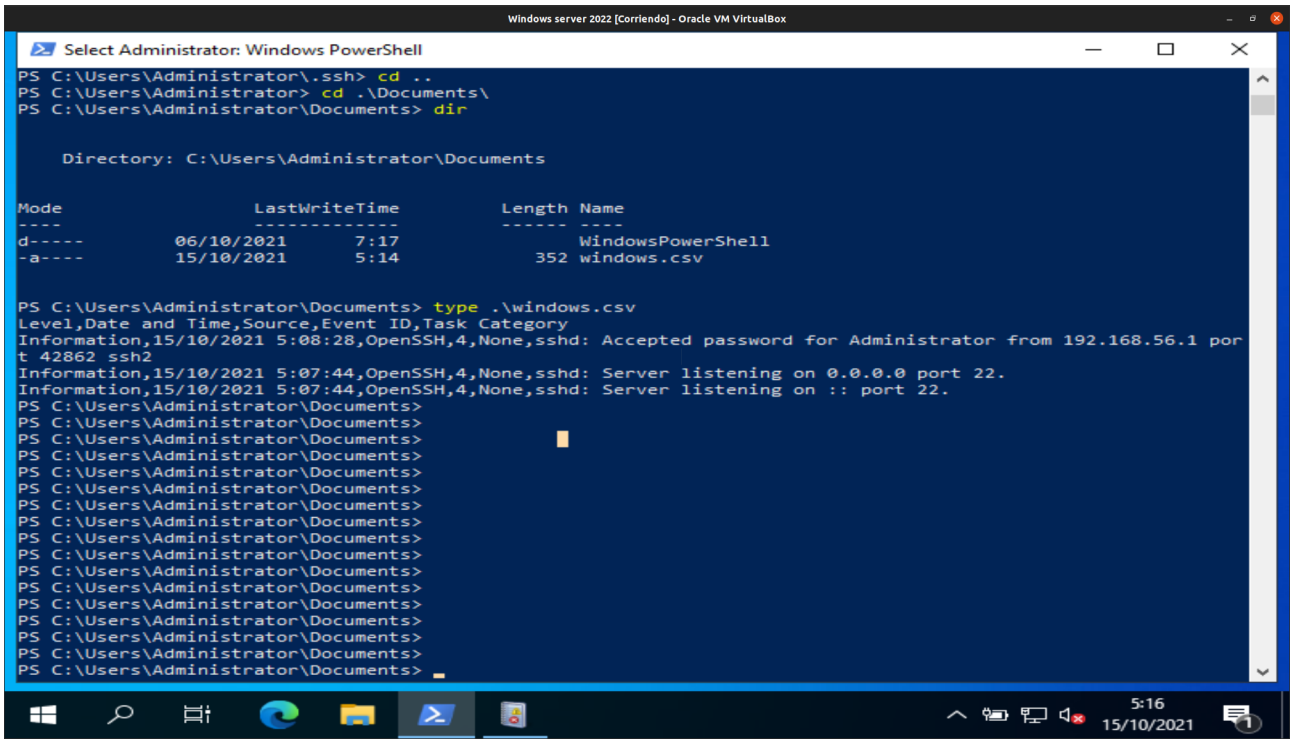
Windows
Configuration files involved:
C:\Users\Administrator\.ssh\id_rsa.pub C:\Users\Administrator\.ssh\authorized_key



Save events.



Export windows.cvs



We can review its content.

Mandatory requirements. Folder structure:

It has to exist a zip file with the following structure:

doc/practice_documentation

unix
ssh/unix.log historyunix.txt configuration_files
vnc_rdp/unix.log historyunix.txt configuration_files
nfs_samba/unix.log historyunix.txt configuration_files
FreeNAS_iSCSI/unix.log historyunix.txt configuration_files
cups/ unix.log historyunix.txt configuration_files
dhcp/unix.log historyunix.txt configuration_files
dns /unix.log historyunix.txt configuration_files
git/unix.log historyunix.txt configuration_files
bd/unix.log historyunix.txt configuration_files
web/unix.log historyunix.txt configuration_files
ldap/unix.log historyunix.txt configuration_files

Linux
ssh/linux.log historylinux.txt configuration_files
vnc_rdp /linux.log historylinux.txt configuration_files
nfs_samba/linux.log historylinux.txt configuration_files
FreeNAS_iSCSI /linux.log historylinux.txt configuration_files
cups/linux.log historylinux.txt configuration_files
dhcp/linux.log historylinux.txt configuration_files
dns /linux.log historylinux.txt configuration_files
git/linux.log historylinux.txt configuration_files
bd/linux.log historylinux.txt configuration_files
web/linux.log historylinux.txt configuration_files
ldap/linux.log unix.log windows.csv historylinux.txt historyunix.txt

windows/
ssh/windows.csv configuration_files
vnc_rdp/windows.csv configuration_files
nfs_samba/windows.csv configuration_files
FreeNAS_iSCSI /windows.csv configuration_files
cups/windows.csv configuration_files
dhcp/windows.csv configuration_files
dns /windows.csv configuration_files
git/windows.csv configuration_files
bd/windows.csv configuration_files
web/windows.csv configuration_files
ldap/windows.csv configuration_files

For dns servers and other services we set these ips. If the virtual machine does not have this IP, the sections of said virtual machine will not be corrected.

DNS server Ip:
Linux 192.168.22.41
Unix 192.168.22.42
Windows 192.168.22.43

DHCP ranges:
Virtualbox 192.168.22.5 – 192.168.137.40
Linux 192.168.22.51 - 192.168.22.100
Unix 192.168.22.101 - 192.168.22.150
Windows 192.168.22.151 – 192.168.22.200

Anex:

/etc/sysconfig/network
Description: It establishes the values of the basic variables for the network service (name, domain, router address, etc. Format: Variable = Value ...

/etc/sysconfig/network-scripts/ifup-Interface
Description: Sets the values of the specific network variables for each network interface (collection of network values through DHCP, BOOTP or local), IP address, network mask, broadcast address, etc. Format: Variable = Value ...

/etc/hosts
Description: Stores the association between IP address, name and aliases of known computers. The address 127.0.0.1 must always be present. Format: IP Address Name [Alias ...] ... 39

/etc/resolv.conf
Description: It establishes the bases for name resolution, indicating the domain of the computer, the address of the name servers and other domains of interest. Format: domain Domain nameserver IPServerDNS ... [search DomainSearch ...]

/etc/nsswitch.conf
Description: Indicates the search order for network files. Format: FileType SearchType ... ... Search types: files: local files. nis: NIS. nisplus: NIS +. ldap: directory service. dns: name service.

/etc/services
Description: Indicates the protocol and port used by each communication service (this file should not be modified, as it is usually well configured). Format: Port / Protocol Service [Alias ...]

Servicios práctica 2

dhcp

Description: Remote network parameter assignment service; uses the DHCP protocol, although you can also use BOOTP. Configuration file:
/etc/dhcpd.conf

ldap

Description: Directory access service using LDAP protocol. A directory is a tree that includes all kinds of logically grouped resources. Configuration file:
/etc/openldap/slapd.conf Directorio de esquemas LDAP: /etc/openldap/schemes

httpd

Description: Information access service through hypertext, using the HTTP protocol. Configuration files: /etc/httpd/conf/httpd.conf, /etc/httpd/conf.d/*
Mas los ficheros de configuración de los gestores de contenido.

git

Description: Access service to a shared repository of information through git, using the HTTP protocol. Configuration file: ./git/project.git

samba

Description: Service that allows sharing of resources (files and printers) through the CISS or SMB protocols. Configuration file: /etc/samba/smb.conf

ssh

Description: Service for remote and secure connection to the system command interpreter using Secure Shell. Configuration files: /etc/ssh/sshd_config, /etc/ssh/ssh_config

owncloud

Description: Service for the control and storage of files, in the cloud. Configuration file: Access configuration: /etc/httpd/conf.d/owncloud.conf

Vnc

Description: VNC service
Configuration files /etc/tigervnc/vncserver.users /home/user__a/vnc/config

Dns

Description: DNS Service
Configuration files: /etc/named.conf /var/named/network.zone
/var/named/reverse.zone

Nfs

Description: NFS Service
Configuration files /etc/exports

Cups:

Description: Cups Service
Configuration files /etc/cups/cupsd.conf /etc/cups/cups-pdf.conf

Ldap:
Description: Ldap Service
Configuration files: /etc/openldap/slapd.conf /etc/openldap/cacerts
/etc/sysconfig/ldap /var/lib/ldap/autenticar/DB_CONFIG p /var/lib/ldap/autenticar

Mysql:
Description: Mysql service
Configuration file /etc/mysql/my.cnf

Postgresql
Description: Postgresql service
Configuration file /usr/local/postgres/pg_new/postgresql.conf

Oracle
Description: Oracle Service
Configuration files: listener.ora, sqlnet.ora, etc