¿Cómo sería la certificación Linux LPIC2-201 para PowerShell? (posible equivalencia entre Linux y PowerShell)

Capacity Planning

->Measure and Troubleshoot Resource Usage
->->Key Knowledge Areas:
->->->Measure CPU usage

```
Get-Process | Select-Object Name, CPU | Format-Custom
```

->->->Measure memory usage

```
Get-Process | Select-Object WorkingSet
```

```
@(Get-Process) | Select-Object WorkingSet
```

```
@(Get-Process).where{$_.WorkingSet -gt 100MB}
```

```
@(Get-Process).where{$_.WS -gt 100MB}
```

->->->Measure disk I/O

```
$query = "SELECT * FROM Win32_PerfRawData_PerfProc_Process"
```

```
Get-WMIObject -Query $query
```

->->->Measure network I/O

```
Get-NetAdapterStatistics
```

```
Get-NetAdapterStatistics | Select-Object *
```

->->->Measure firewalling and routing throughput

Get-NetFirewallAddressFilter

Get-NetFirewallApplicationFilter

Get-NetFirewallInterfaceFilter

Get-NetFirewallInterfaceTypeFilter

Get-NetFirewallPortFilter

Get-NetFirewallProfile

Get-NetFirewallRule

Get-NetFirewallSecurityFilter

Get-NetFirewallServiceFilter

Get-NetFirewallSetting

->->->Map client bandwidth usage

```
Get-WmiObject                                    -class
Win32_PerfFormattedData_Tcpip_NetworkInterface    |select
BytesTotalPersec,    CurrentBandwidth,PacketsPersec|where
{$_.PacketsPersec -gt 0}
```

->->->Match / correlate system symptoms with likely problems

Get-EventLog

->->->Estimate throughput and identify bottlenecks in a system including networking

Get-Process | Select-Object Name, CPU | Format-Custom

Get-Process | Select-Object WorkingSet

Get-WmiObject -class "Win32_PhysicalMemoryArray"

->->The following is a partial list of the used files, terms and utilities:
->->->iostat

Get-counter

```
Get-counter -Counter "\\lamiw81\disco físico(_total)\longitud actual de la cola de disco"

->->->netstat

Get-NetNeighbor

Get-NetAdapterStatistics

Get-NetRoute

Get-NetTCPConnection

Get-NetUDPEndpoint

->->->w

Get-WmiObject win32_process |% {Write-Host $_.processname $_.getowner().user}

->->->top

Get-Process

->->->sar

Get-Process

->->->processes blocked on I/O

(Get-WmiObject Win32_PerfFormattedData_PerfProc_Process)

(Get-WmiObject Win32_PerfFormattedData_PerfOS_memory)

->->->blocks out

(Get-WmiObject Win32_PerfFormattedData_PerfProc_Process)

(Get-WmiObject Win32_PerfFormattedData_PerfOS_memory)

->->->vmstat

Get-Process

->->->pstree, ps

Get-Process
```

->->->Isof

(Get-WmiObject win32_process) | Select-Object Name,CommandLine

Get-WmiObject win32_process | Select-Object Path,ExecutablePath,ProcessName

Get-Process -Module

->->->uptime

Get-CimInstance -ClassName win32_operatingsystem | select csname, lastbootuptime

Get-WmiObject win32_operatingsystem | select csname, @{LABEL='LastBootUpTime';EXPRESSION={$_.ConverttoDateTime($_.lastbootuptime)}}

->->->swap

Get-Process | Select-Object PagedMemorySize64,NonpagedSystemMemorySize,NonpagedSystemMemorySize64,PagedMemorySize64,PagedSystemMemorySize,PagedSystemMemorySize64,PeakPagedMemorySize,PeakPagedMemorySize64,PeakWorkingSet,PeakWorkingSet64,PeakVirtualMemorySize,PeakVirtualMemorySize64

->->->blocks in

(Get-WmiObject Win32_PerfFormattedData_PerfProc_Process)

(Get-WmiObject Win32_PerfFormattedData_PerfOS_memory)

->Predict Future Resource Needs
->->Key Knowledge Areas:
->->->Use collectd to monitor IT infrastructure usage
->->->Predict capacity break point of a configuration
->->->Observe growth rate of capacity usage
->->->Graph the trend of capacity usage
->->->Awareness of monitoring solutions such as Nagios, MRTG and Cacti
->->The following is a partial list of the used files, terms and utilities:

->->->diagnose
->->->predict growth
->->->resource exhaustion

Linux Kernel

->Kernel Components
->->Key Knowledge Areas
->->->Kernel 2.6.x documentation
->->->Kernel 3.x documentation
->->Terms and Utilities:
->->->/usr/src/linux/
->->->zImage
->->->/usr/src/linux/Documentation/
->->->bzImage

->Compiling a kernel
->->Key Knowledge Areas:
->->->/usr/src/linux/
->->->Kernel Makefiles
->->->Kernel 2.6.x/3.x make targets
->->->Customize the current kernel configuration.
->->->Build a new kernel and appropriate kernel modules.
->->->Install a new kernel and any modules.
->->->Ensure that the boot manager can locate the new kernel and associated files.
->->->Module configuration files
->->->Awareness of dracut
->->Terms and Utilities:
->->->mkinitrd
->->->mkinitramfs
->->->make

->->->bzip2
->->->make targets (all, config, xconfig, menuconfig, gconfig, oldconfig, mrproper, zImage, bzImage, modules, modules_install, rpm-pkg, binrpm-pkg, deb-pkg)
->->->gzip
->->->module tool
->->->/usr/src/linux/.confi
->->->/lib/modules/kernel-version/
->->->depmod

->Kernel runtime management and troubleshooting
->->Key Knowledge Areas:
->->->Use command-line utilities to get information about the currently running kernel and kernel modules
->->->Manually load and unload kernel modules
->->->Determine when modules can be unloaded
->->->Determine what parameters a module accepts
->->->Configure the system to load modules by names other than their file name.
->->->/proc filesystem
->->->Content of /, /boot/ , and /lib/modules/
->->->Tools and utilities to analyze information about the available hardware
->->->udev rules
->->Terms and Utilities:
->->->/lib/modules/kernel-version/modules.dep
->->->module configuration files in /etc/
->->->/proc/sys/kernel/
->->->/sbin/depmod
->->->/sbin/rmmod
->->->/sbin/modinfo
->->->/bin/dmesg
->->->/sbin/lspci
->->->/usr/bin/lsdev
->->->/sbin/lsmod
->->->/sbin/modprobe
->->->/sbin/insmod

->->->/bin/uname
->->->/usr/bin/lsusb
->->->/etc/sysctl.conf, /etc/sysctl.d/
->->->/sbin/sysctl
->->->udevmonitor
->->->udevadm monitor
->->->/etc/udev/

System Startup

->Customizing SysV->init system startup

Get-WmiObject -Class win32_startupCommand

Get-WmiObject -Query "Select StartMode From Win32_Service Where Name='winmgmt'"

->->Key Knowledge Areas:
->->->Linux Standard Base Specification (LSB)
->->->SysV init environment
->->Terms and Utilities:

New-ScheduledTaskAction

New-ScheduledTaskTrigger

Register-ScheduledTask

->->->/etc/inittab
->->->/etc/init.d/
->->->/etc/rc.d/
->->->chkconfig
->->->update-rc.d
->->->init and telinit

->System Recovery

->->Key Knowledge Areas:
->->->GRUB version 2 and Legacy
->->->Grub shell
->->->Boot loader start and hand off to kernel
->->->Kernel loading
->->->Hardware initialization and setup
->->->Daemon/service initialization and setup
->->->Know the different boot loader install locations on a hard disk or removable device
->->->Overwriting standard boot loader options and using boot loader shells
->->->Awareness of UEFI
->->Terms and Utilities:
->->->mount
->->->fsck
->->->inittab, telinit and init with SysV init
->->->the contents of /boot/ and /boot/grub/
->->->GRUB
->->->grub-install
->->->initrd, initramfs
->->->Master boot record

->Alternate Bootloaders
->->Key Knowledge Areas:
->->->LILO
->->->SYSLINUX, ISOLINUX, PXELINUX
->->->Understanding of PXE
->->Terms and Utilities:
->->->lilo, /etc/lilo.conf
->->->syslinux
->->->extlinux
->->->isolinux.bin
->->->isolinux.cfg
->->->pxelinux.0
->->->pxelinux.cfg/

Filesystem and Devices

->Operating the Linux filesystem
->->Key Knowledge Areas:
->->->The concept of the fstab configuration
->->->Tools and utilities for handling SWAP partitions and files
->->->Use of UUIDs
->->Terms and Utilities:
->->->/etc/fstab
->->->/etc/mtab
->->->/proc/mounts
->->->mount and umount
->->->sync
->->->swapon
->->->swapoff

->Maintaining a Linux filesystem
->->Key Knowledge Areas:
->->->Tools and utilities to manipulate and ext2, ext3 and ext4
->->->Tools and utilities to manipulate xfs
->->->Awareness of Btrfs
->->Terms and Utilities:
->->->fsck (fsck.)
->->->*mkfs (mkfs.*)
->->->dumpe2fs, xfsdump, xfsrestore
->->->debugfs
->->->tune2fs
->->->mkswap
->->->xfs_info, xfs_check and xfs_repair
->->->smartd, smartctl

->Creating and configuring filesystem options
->->Key Knowledge Areas:
->->->autofs configuration files
->->->UDF and ISO9660 tools and utilities
->->->Awareness of CD-ROM filesystems (UDF, ISO9660, HFS)
->->->Awareness of CD-ROM filesystem extensions (Joliet, Rock Ridge, El Torito)
->->->Basic feature knowledge of encrypted filesystems
->->Terms and Utilities:
->->->/etc/auto.master
->->->/etc/auto.[dir]
->->->mkisofs

Advanced Storage Device Administration

->Configuring RAID
->->Key Knowledge Areas:
->->->Software raid configuration files and utilities
->->Terms and Utilities:
->->->mdadm.conf
->->->mdadm
->->->/proc/mdstat
->->->partition type 0xFD

->Adjusting Storage Device Access
->->Key Knowledge Areas:
->->->Tools and utilities to configure DMA for IDE devices including ATAPI and SATA
->->->Tools and utilities to manipulate or analyze system resources (e.g. interrupts)

->->->Awareness of sdparm command and its uses
->->->Tools and utilities for iSCSI
->->Terms and Utilities:
->->->hdparm, sdparm
->->->tune2fs
->->->sysctl
->->->/dev/hd*, /dev/sd*
->->->iscsiadm, scsi_id, iscsid and iscsid.conf
->->->WWID, WWN, LUN numbers

->Logical Volume Manager
->->Key Knowledge Areas:
->->->Tools in the LVM suite
->->->Resizing, renaming, creating, and removing logical volumes, volume groups, and physical volumes
->->->Creating and maintaining snapshots
->->->Activating volume groups
->->Terms and Utilities:
->->->/sbin/pv*
->->->/sbin/lv*
->->->/sbin/vg*
->->->mount
->->->/dev/mapper/

Networking Configuration

->Basic networking configuration

- http://www.jesusninoc.com/2015/11/13/cmdlets-for-tcpip-model-layers/

->->Key Knowledge Areas:
->->->Utilities to configure and manipulate ethernet network

interfaces
->->->Configuring basic access to wireless networks with iw, iwconfig and iwlist
->->Terms and Utilities:
->->->/sbin/route

Get-NetRoute

->->->/sbin/ifconfig

Get-NetIPv4Protocol

Get-NetIPv6Protocol

New-NetIPAddress -InterfaceAlias Wi-Fi -IPAddress 192.168.1.56 -PrefixLength 24 -DefaultGateway 192.168.1.1

->->->/sbin/ip

Get-NetIPv4Protocol

Get-NetIPv6Protocol

New-NetIPAddress -InterfaceAlias Wi-Fi -IPAddress 192.168.1.56 -PrefixLength 24 -DefaultGateway 192.168.1.1

->->->/usr/sbin/arp

Get-NetAdapter | Select-Object Name,MacAddress

Get-WmiObject -Class Win32_NetworkAdapterConfiguration | Select-Object Description,MACAddress

Get-NetNeighbor

->->->/sbin/iwconfig
->->->/sbin/iwlist

->Advanced Network Configuration and Troubleshooting
->->Key Knowledge Areas:
->->->Utilities to manipulate routing tables
->->->Utilities to configure and manipulate ethernet network interfaces
->->->Utilities to analyze the status of the network devices

->->->Utilities to monitor and analyze the TCP/IP traffic

->->Terms and Utilities:

->->->/sbin/route

Get-NetRoute

->->->/sbin/ifconfig

Get-NetIPv4Protocol

Get-NetIPv6Protocol

New-NetIPAddress -InterfaceAlias Wi-Fi -IPAddress 192.168.1.56 -PrefixLength 24 -DefaultGateway 192.168.1.1

->->->/bin/netstat

Get-NetTCPConnection

Get-NetTCPConnection | Group State, RemotePort | Sort Count | FT Count, Name –Autosize

Get-NetTCPConnection | ? State -eq Established | FT –Autosize

Get-NetTCPConnection | ? State -eq Established | ? RemoteAddress -notlike 127* | % { $_; Resolve-DnsName $_.RemoteAddress -type PTR -ErrorAction SilentlyContinue}

Get-NetUDPEndpoint

->->->/bin/ping

Test-NetConnection

Test-NetConnection www.jesusninoc.com

Test-NetConnection -ComputerName www.jesusninoc.com -InformationLevel Detailed

Test-NetConnection -ComputerName www.jesusninoc.com | Select -ExpandProperty PingReplyDetails | FT Address, Status, RoundTripTime

1..100 | % { Test-NetConnection -ComputerName www.jesusninoc.com -RemotePort 80 } | FT -AutoSize

->->->/usr/sbin/arp

Get-NetAdapter | Select-Object Name,MacAddress

Get-WmiObject -Class Win32_NetworkAdapterConfiguration | Select-Object Description,MACAddress

Get-NetNeighbor

->->->/usr/sbin/tcpdump
->->->/usr/sbin/lsof

Get-NetTCPConnection

Get-NetTCPConnection | Group State, RemotePort | Sort Count | FT Count, Name –Autosize

Get-NetTCPConnection | ? State -eq Established | FT –Autosize

Get-NetTCPConnection | ? State -eq Established | ? RemoteAddress -notlike 127* | % { $_; Resolve-DnsName $_.RemoteAddress -type PTR -ErrorAction SilentlyContinue}

Get-NetUDPEndpoint

->->->/usr/bin/nc
->->->/sbin/ip

Get-NetIPv4Protocol

Get-NetIPv6Protocol

New-NetIPAddress -InterfaceAlias Wi-Fi -IPAddress 192.168.1.56 -PrefixLength 24 -DefaultGateway 192.168.1.1

->->->nmap

->Troubleshooting Network Issues
->->Key Knowledge Areas:
->->->Location and content of access restriction files
->->->Utilities to configure and manipulate ethernet network interfaces
->->->Utilities to manage routing tables
->->->Utilities to list network states.
->->->Utilities to gain information about the network configuration

->->->Methods of information about the recognized and used hardware devices
->->->System initialization files and their contents (SysV init process)
->->->Awareness of NetworkManager and its impact on network configuration
->->Terms and Utilities:
->->->/sbin/ifconfig

Get-NetIPv4Protocol

Get-NetIPv6Protocol

New-NetIPAddress -InterfaceAlias Wi-Fi -IPAddress 192.168.1.56 -PrefixLength 24 -DefaultGateway 192.168.1.1

->->->/sbin/route

Get-NetRoute

->->->/bin/netstat

Get-NetTCPConnection

Get-NetTCPConnection | Group State, RemotePort | Sort Count | FT Count, Name –Autosize

Get-NetTCPConnection | ? State -eq Established | FT –Autosize

Get-NetTCPConnection | ? State -eq Established | ? RemoteAddress -notlike 127* | % { $_; Resolve-DnsName $_.RemoteAddress -type PTR -ErrorAction SilentlyContinue}

Get-NetUDPEndpoint

->->->/etc/network/, /etc/sysconfig/network-scripts/

Get-NetIPv4Protocol

Get-NetIPv6Protocol

New-NetIPAddress -InterfaceAlias Wi-Fi -IPAddress 192.168.1.56 -PrefixLength 24 -DefaultGateway 192.168.1.1

->->->/bin/ping

Test-NetConnection

Test-NetConnection www.jesusninoc.com

Test-NetConnection -ComputerName www.jesusninoc.com -InformationLevel Detailed

Test-NetConnection -ComputerName www.jesusninoc.com | Select -ExpandProperty PingReplyDetails | FT Address, Status, RoundTripTime

1..100 | % { Test-NetConnection -ComputerName www.jesusninoc.com -RemotePort 80 } | FT -AutoSize

->->->System log files such as /var/log/syslog & /var/log/messages

Get-EventLog -LogName System -EntryType Error, Warning -After (Get-Date).AddDays(-1)

->->->/etc/resolv.conf
->->->/etc/hosts
->->->/etc/hostname, /etc/HOSTNAME
->->->/bin/hostname
->->->/usr/sbin/traceroute

Test-NetConnection –TraceRoute

->->->/bin/dmesg
->->->/etc/hosts.allow, /etc/hosts.deny

System Maintenance

->Make and install programs from source
->->Key Knowledge Areas:
->->->Unpack source code using common compression and archive utilities

->->->Understand basics of invoking make to compile programs

->->->Apply parameters to a configure script

->->->Know where sources are stored by default

->->Terms and Utilities:

->->->/usr/src/

->->->gunzip

```
Compress-Archive -LiteralPath C:\powershell\example.txt
—CompressionLevel Optimal -DestinationPath
C:\powershell\comprimido.zip
```

```
Expand-Archive -LiteralPath C:\powershell\comprimido.zip -
DestinationPath C:\powershell\descomprimir
```

->->->gzip

```
Compress-Archive -LiteralPath C:\powershell\example.txt
—CompressionLevel Optimal -DestinationPath
C:\powershell\comprimido.zip
```

```
Expand-Archive -LiteralPath C:\powershell\comprimido.zip -
DestinationPath C:\powershell\descomprimir
```

->->->bzip2

```
Compress-Archive -LiteralPath C:\powershell\example.txt
—CompressionLevel Optimal -DestinationPath
C:\powershell\comprimido.zip
```

```
Expand-Archive -LiteralPath C:\powershell\comprimido.zip -
DestinationPath C:\powershell\descomprimir
```

->->->tar

```
Compress-Archive -LiteralPath C:\powershell\example.txt
—CompressionLevel Optimal -DestinationPath
C:\powershell\comprimido.zip
```

```
Expand-Archive -LiteralPath C:\powershell\comprimido.zip -
DestinationPath C:\powershell\descomprimir
```

->->->configure

->->->make

->->->uname

- http://www.jesusninoc.com/2012/12/10/useful-wmi-classes/

->->->install
->->->patch

->Backup operations
->->Key Knowledge Areas:
->->->Knowledge about directories that have to be include in backups
->->->Awareness of network backup solutions such as Amanda, Bacula and BackupPC
->->->Knowledge of the benefits and drawbacks of tapes, CDR, disk or other backup media
->->->Perform partial and manual backups
->->->Verify the integrity of backup files
->->->Partially or fully restore backups
->->Terms and Utilities:
->->->/bin/sh
->->->dd
->->->tar
->->->/dev/st* and /dev/nst*
->->->mt
->->->rsync

->Notify users on system->related issues
->->Key Knowledge Areas:
->->->Automate communication with users through logon messages
->->->Inform active users of system maintenance
->->Terms and Utilities:
->->->/etc/issue
->->->/etc/issue.net
->->->/etc/motd
->->->wall
->->->/sbin/shutdown

$equipo='.'

(get-wmiobject -class win32_operatingsystem -computername $equipo).win32shutdown(12)