



Virtual Machine Optimizations



This job aid represents a list of recommended optimizations to make for Virtual Machines (VMs) when deploying them in Lab on Demand. There may be times when some of these options are not required or appropriate depending on the lab requirements. No guarantees are offered and it is up to each organization to understand their use case scenario and implement the settings needed.

General Virtual Machine Optimizations

This section lists settings that should be considered for all operating systems. Some options would only apply to graphical based operating systems.

- Passwords are set to not expire
- Set VM resolution to 1024x768
- Hyper-V/vSphere services/tools installed
- Wallpaper is solid color Consider using BG Info (Windows) or Conky (Linux) for background text
- Empty recycle bins and clear browser history
- Set browser home page to blank or a specific site Set keyboard to US (ensures best keyboard mapping in multiple languages)

Windows Optimizations

Windows operating systems have some additional features and tools that might be considered.

- Notification area should have clock and network icon only
- Disable new network popup.
HKLM\System\CurrentControlSet\Control\Network\NewNetworkWindowOff
- Power Settings set to High Performance in the Control Panel
- System Performance set to Best Performance in the Control Panel
- Ensure OS/Office is re-armed
- Optimize Windows 10 VM with VDI Script. <https://github.com/The-Virtual-Desktop-Team/Virtual-Desktop-Optimization-Tool>. Please note this script is highly configurable and makes substantial changes to a Windows machine so all documentation should be read and the product should be modified based on requirements.



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Linux Optimizations

The main Linux specific consideration is that Linux has a command history that services a reboot. In some courses you might need to make sure the command history has been cleared.

- Clear command history
- Default history files are ~/.history or ~/.bash_history
- Check using echo \$HISTFILEHistory cleared using history -c

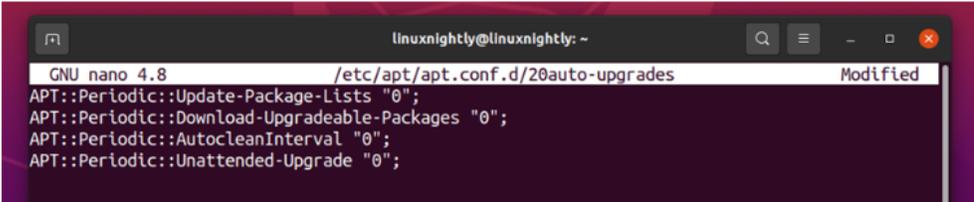
Disable automatic updating

Today, all operating systems automatically update and this feature should be disabled for most lab environments for the following reasons:

- Updating impacts machine performance
- It could potentially require a system to reboot in the middle of a lab
- It can make changes that could break the labs instructions, especially for graphical systems

Windows 10

- Set registry key
HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate\AU
- DWORD(32-Bit) NoAutoUpdate = 1
- Linux Mint - Disable in Startup Applications from Control Panel
- Ubuntu Desktop – Disable in Software & Updates from control Panel
- Ubuntu command line – Edit/etc/apt/apt.conf.d/20auto-upgrades
- Centos – Disable and remove the package packageit

A terminal window screenshot showing the GNU nano 4.8 editor editing the file /etc/apt/apt.conf.d/20auto-upgrades. The terminal output displays the following configuration lines:

```
APT::Periodic::Update-Package-Lists "0";  
APT::Periodic::Download-Upgradeable-Packages "0";  
APT::Periodic::AutocleanInterval "0";  
APT::Periodic::Unattended-Upgrade "0";
```