

System Hardening Lab

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Hardening Step 1: Require Sign-in

Windows 10 doesn't require you to sign-in again after the computer has been put to sleep. Most devices by default are set to go into sleep mode when not used for a specified amount of time. Using the setting "Require sign-in" When PC wakes up from sleep ensures that when you have been away from your PC for a while a person would need to sign-in to use your PC.

Require sign-in

If you've been away, when should Windows require you to sign in again?

When PC wakes up from sleep ▾

Hardening Step 2: Turn on your Firewall

While Windows 10 has the built-in Firewall on by default, it can be turned off manually or by other applications. Other OS may not have one at all or have it on by default. A Firewall examines data passing through your network and blocks any not meeting specified security criteria.

(🔒) Firewall & network protection

Who and what can access your networks.

Domain network

Firewall is on.

Private network

Firewall is on.

Public network (active)

Firewall is on.

Hardening Step 3: Disable Remote Access

Remote access is as it sounds, enabling this feature allows access to the computer via the network remotely through other devices such as a phone or other PC. It is a feature utilized by hackers to gain access to install malicious code or even steal data.

Remote Desktop

Remote Desktop lets you connect to and control this PC from a remote device by using a Remote Desktop client (available for Windows, Android, iOS and macOS). You'll be able to work from another device as if you were working directly on this PC.

Enable Remote Desktop



Hardening Step 4: Up to date

Ensuring that updates have been downloaded and installed ensures that you have the most up to date security improvements and that all firmware and software is more likely to continue performing optimally. Some professionals recommend waiting about a week after an update has been released to ensure that no bugs are involved but always keep informed in case the update has a security patch that may secure you from a well known and actively used flaw.

Windows Update



You're up to date

Last checked: Today, 7:51 AM

Check for updates

Hardening Step 5: Antivirus Installed and Updated

An antivirus can help in the prevention of viruses and other malicious code and the most recent versions of Windows have one pre-installed called Windows Defender. Keeping it up to date and allowing it to scan your PC periodically will have in the prevention and detection of malicious attacks.

Virus & threat protection

Protection for your device against threats.

Current threats

No current threats.

Last scan: 1/29/2022 7:58 AM (quick scan)

0 threats found.

Scan lasted 27 seconds

41922 files scanned.

Quick scan

[Scan options](#)

[Allowed threats](#)

[Protection history](#)

Virus & threat protection settings

No action needed.

[Manage settings](#)

Virus & threat protection updates

Security intelligence is up to date.

Last update: 1/30/2022 7:51 AM

[Check for updates](#)

Ransomware protection

No action needed.

[Manage ransomware protection](#)

Hardening Step 6: Encrypting your drive

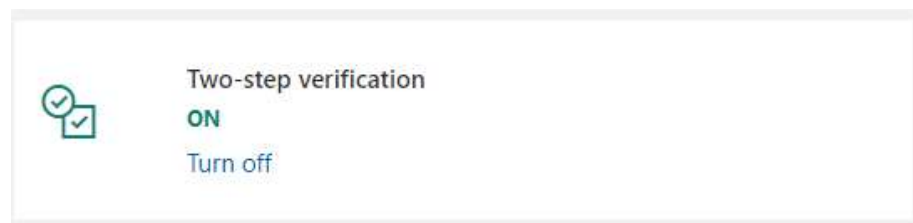
Encrypting your drive offers an extra layer of protection and Bitlocker is an included tool for this in Windows 10 Pro. With your drive encrypted if the drive is stolen the information on it would be unusable and only users with the correct authorization can change, copy, or view your data.

Operating system drive



Hardening Step 7: Using 2 Factor Authentication

Two Factor Authentication called Two-step verification in the Windows account settings makes it to where you must use two methods in order to log-in or make important changes to the account. An example of this is to require a Pin to be typed in and using a separate device with an Authenticator app verify that it was you who entered the correct pin. This means if someone gets ahold of your pin they can't just get access.



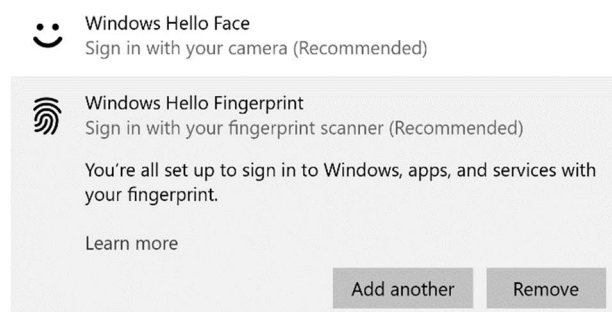
Hardening Step 8: Biometric Log-in

Using biometrics to log in means that one must use something like a fingerprint or face to log-in. You can do this by using the included Windows Hello Face or Fingerprint options in conjunction with a webcam or fingerprint reader.

Sign-in options

Manage how you sign in to your device

Select a sign-in option to add, change, or remove it.



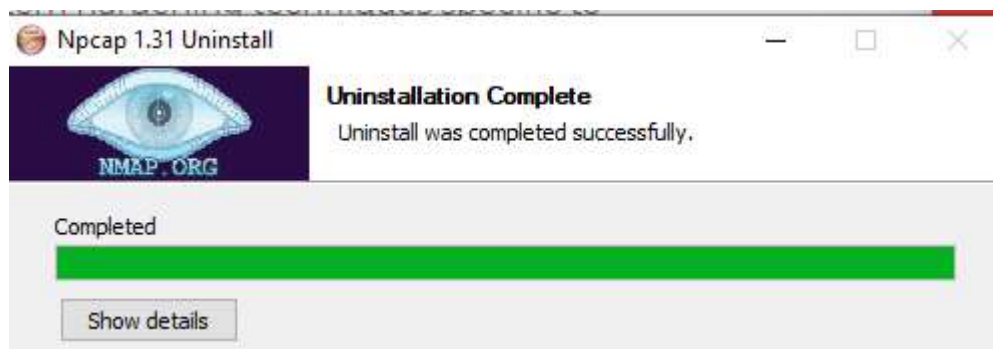
Hardening Step 9: Account Lockout Policy

Changing this policy can help prevent brute force attacks. By restricting how many attempts a person has to get the password right it limits how many passwords they can try before it locks the attempt for a set amount of time.

Policy	Security Setting
Account lockout duration	30 minutes
Account lockout threshold	5 invalid logon attempts
Reset account lockout counter after	5 minutes

Hardening Step 10: Remove unused applications and software

This not only frees up space on your drive but is also a security tool. We tend to ignore updates on applications we don't use and they therefore go become a vulnerability. Security patches don't get installed and they become a way for malicious attacks.



References

- Daniel, B. (2021, April 14). *System hardening: An easy-to-understand overview*. Trusted Computing Innovator. Retrieved January 30, 2022, from <https://www.trentonsystems.com/blog/system-hardening-overview>
- McFarland, S. (2021, May 21). *Security best practices for your windows 10 computer*. Securicy. Retrieved January 30, 2022, from <https://www.securicy.com/blog/security-best-practices-hardening-windows-10/>
- Popp, M. (2020, November 4). *How to set up two step authentication in Windows 10*. TechNorms. Retrieved January 31, 2022, from <https://www.technorms.com/46293/enable-microsoft-two-step-authentication-in-windows-10#:~:text=Turning%20On%20Microsoft%20Two%2DFactor%20Authentication&text=Click%20on%20%E2%80%9CSecurity%20%26%20privacy.,turn%20on%20two%2Dfactor%20authentication.>
- Tladi, M. (2021, March 22). *How to limit the number of failed login attempts on Windows 10*. MUO. Retrieved January 31, 2022, from <https://www.makeuseof.com/how-limit-number-failed-login-attempts-windows-10/>