

MAC Address Randomization in Windows 10

MAC Address Randomization

- Windows 10 privacy feature for Wi-Fi interfaces
 - Prevents entities from tracking user's movements using their unique Wi-Fi hardware address (MAC Address)
- Configurable through the Settings App
 - Prerequisite - Wi-Fi NIC hardware and driver support
- Two controls:
 - Global - per Wi-Fi interface for all networks
 - **Start > Settings > Network & Internet > Wi-Fi .**
 - Turn on **Use random hardware addresses.**
 - Per network – when connected to a specific network
 - **Start > Settings > Network & Internet > Wi-Fi > Manage known networks <Select a network> >**
 - **Properties > Use random hardware addresses for this network.**

What the settings do

- Global setting
 - Applies to scans for nearby networks between connections and if on, Wi-Fi probe request frames use a random MAC address
 - Address changes every time user connects and disconnects from a network and upon device restart
 - Applies to new connections only
 - Same address used for all connections to an SSID by default unless user “forgets” network and reconnects
 - Good for Captive Portals that authenticate using device MAC address (e.g. Hotels)
 - Existing connections are not affected (e.g. Office, home)
- Per Network setting
 - Applies to currently connected network
 - Three options:
 - Off: Use permanent hardware MAC address
 - On: Use same Random MAC Address every time
 - Change daily: Use a new Random MAC address every day

Specifics

- Random MAC Address calculation
 - Hash(Secret, SSID, connection ID)
 - Uses Crypto API to make sure address is truly random
 - Sets most significant byte of address to generate locally administered, unicast address
- Not enabled by default yet in Windows
 - Some networks not compatible with randomization (e.g., networks with MAC Address filtering, HotSpots)
- Not configurable via MDM/Group Policy
 - IT managers can deploy Wi-Fi profiles with randomization turned off or on
- More details: <https://huitema.wordpress.com/2015/12/31/mac-address-randomization-in-windows-10/>