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/