**Overview:**

This article will guide how to addresses the vulnerability of WiFi Protected Setup (WPS) against brute force.

**Resolution:**

Wi-Fi Protected Setup (WPS) is a method for setting up a new wireless router for a home network that includes a way for users to set up the network easily via different methods, which include:

1. Push Button Configuration
2. Register Wireless Client PIN Number
3. Enter AP’s PIN Number in Wireless Client

The WPS standard requires a PIN to be used during the device setup phase. The vulnerability discovered in WPS makes that PIN highly susceptible to brute force attempts. ZyXEL devices will protect themselves after several failed attempts to authenticate by entering a lock-down state.

During the lock-down state, all WPS attempts using the method 3 will not work. The WPS will return from the lock-down state after a predetermined time period or users need to disable and enable WPS again. While the device is in a lock-down state, users can still use the Push Button Configuration method to connect to the wireless network.

Since only the Enter AP’s PIN Number in Wireless Client method is vulnerable to brute force attack, ZyXEL Strongly recommends disabling this function to best protect your network.
**Disable SOP**

Below are some step by step SOP that shown how to disable WPS for ZyXEL devices.

- VMG8324/VMG8924-Bx0A series and VMG1312-Bx0A series
- AMG1202/AMG1302/AMG1312-T10B series
- NBG Series devices
- SBG3x00 series
- LTE6101 series
To disable the Router WPS method for VMG8924 series and VMG1312 Series:

Below figures are using VMG8924 as example.

1. Login to the router GUI by typing [http://192.168.1.1](http://192.168.1.1) on an Internet browser's address bar.

2. Go to **Network Setting Icon** at the bottom and select **Wireless**.
3. Go to WPS Tab, Select **Disable** to disable the WPS function.

4. Hit **Apply** button to save settings.
To disable the Router WPS method for AMG1202, AMG1302 and AMG1312 series:

Below figures are using AMG1312-T10B as example.

1. Login to the router GUI by typing http://192.168.1.1 on an Internet browser's address bar.

2. Go to **Network Setting Icon** at the bottom and select **Wireless**.
3. Go to WPS Tab, Select **Disable** to disable the WPS function.

4. Hit **Apply** button to save settings.
To disable the Router WPS method for NBG Series devices.
Using NBG419Nv2 as an example:

1. Login to the router GUI (the default password is 1234) by typing http://192.168.1.1 on an Internet browser's address bar.

2. Click on the Expert Mode on the top right of the Webpage.
3. Go to **Configuration** menu on the left side of the navigation bar.

4. Select the **WPS** tab
5. Click off the **Enable WPS** check box to disable the WPS function.

![ZyXEL NBG-419N v2 configuration interface](image)

6. Hit **Apply** button to save settings.
To disable the Router WPS method for SBG3x00 series:

1. Login to the router GUI by typing \texttt{http://192.168.1.1} on an Internet browser's address bar.

2. Go to \textbf{Network Setting} menu and select \textbf{Wireless}.
3. Go to WPS Tab, Select **Disable** to disable the WPS function.

4. Hit **Apply** button to save settings.
LTE6101: What is the procedure to check whether WPS is disabled?

1. Login to the web GUI of the device by entering 192.168.1.1 in an Internet browser. The username is “admin” and the password is “1234”.

2. Go to Network Setting, Wireless, WPS.
3. In WPS configuration page, please check whether the function is disabled. If it is enabled, please do step 4. The below image shows the “Enable” configuration.

4. To disable the function, please click on “Disable” and click on “Apply”, as shown in the image below.