Wireless Protection Setup (WPS)

Introduction

WPS stands for **Wi-Fi Protected Setup**. It is a wireless network security standard that tries to make connections between a router and wireless devices faster and easier. WPS works only for wireless networks that use a password that is encrypted with the WPA Personal or WPA2 Personal security protocols. WPS doesn't work on wireless networks that are using the deprecated WEP security, which can be cracked easily by any hacker with a basic set of tools and skills. Wi-Fi Users don't want to know the broadcasting ssid and password.

Methods

PIN method

In which a PIN has to be read from either a sticker or display on the new wireless device. This PIN must then be entered at the "representant" of the network, usually the network's access point. Alt access point may be entered into the new device. This method is the mandatory baseline mode and everything must support it. The Wi-Fi Direct specification supersedes this requirement by stating that all devices with a keypad or display must support the PIN method.

Push button method

In which the user has to push a button, either an actual or virtual one, on both the access point and the new wireless client device. On most devices, this discovery mode turns itself off as soon as a connection is established or after a delay (typically 2 minutes or less), whichever comes first, thereby minimizing its vulnerability. Support of this mode is mandatory for access points and optional for connecting devices. The Wi-Fi Direct specification supersedes this requirement by stating that all devices must support the push button method.

TR-181 Data Model Parameter for WPS Feature

Module	Data Model Parameter
CcspWifiAgent(TR181-WiFi-USGv2.XML)	For 2.4G Device.WiFi.AccessPoint.1.WPS.Enable Device.WiFi.AccessPoint.1.WPS.ConfigMethodsSupported Device.WiFi.AccessPoint.1.WPS.ConfigMethodsEnabled Device.WiFi.AccessPoint.1.WPS.X_CISCO_COM_WpsPushButton Device.WiFi.AccessPoint.1.WPS.X_CISCO_COM_Pin Device.WiFi.AccessPoint.1.WPS.X_CISCO_COM_ActivatePushButton Device.WiFi.AccessPoint.1.WPS.X_CISCO_COM_ClientPin Device.WiFi.AccessPoint.1.WPS.X_Comcast_com_Configured Device.WiFi.AccessPoint.1.WPS.X_CISCO_COM_CancelSession For 5G Device.WiFi.AccessPoint.2.WPS.Enable Device.WiFi.AccessPoint.2.WPS.ConfigMethodsSupported Device.WiFi.AccessPoint.2.WPS.ConfigMethodsEnabled Device.WiFi.AccessPoint.2.WPS.X_CISCO_COM_WpsPushButton Device.WiFi.AccessPoint.2.WPS.X_CISCO_COM_Pin Device.WiFi.AccessPoint.2.WPS.X_CISCO_COM_ActivatePushButton Device.WiFi.AccessPoint.2.WPS.X_CISCO_COM_ClientPin Device.WiFi.AccessPoint.2.WPS.X_Comcast_com_Configured Device.WiFi.AccessPoint.2.WPS.X_CISCO_COM_CancelSession

Set Parameter Work Flow

Configuration through Ccsp-WiFi-Agent Module

? Unknown Attachment

Sequence Diagram

Sequence Diagram through Ccsp-Wifi-Agent

SetParameterFlow

? Unknown Attachment

GetParameterFlow

? Unknown Attachment

Reference

- https://en.wikipedia.org/wiki/Wi-Fi_Protected_Setup