Wired Equivalent Privacy (WEP)

Wired Equivalent Privacy (WEP) is a security standard for wireless networks or WiFi. It was a part of the original IEEE 802.11 protocol. As wireless networks transmit data over radio waves, eavesdropping on wireless data transmissions is relatively easier than in wired networks connected by cables. WEP aims to provide the same level of security and confidentiality in wireless networks as in wired counterparts.

How WEP Works

WEP uses a data encryption scheme that is based on a combination of user- and system-generated key values. The original implementations of WEP supported encryption keys of 40 bits plus 24 additional bits of system-generated data, leading to keys of 64 bits in total length. To increase protection, these encryption methods were later extended to support longer keys, including 104-bit (128 bits of total data), 128-bit (152 bits total), and 232-bit (256 bits total) variations.

When deployed over a Wi-Fi connection, WEP encrypts the data stream using these keys so that it is no longer human-readable but can be processed by receiving devices. The keys are not sent over the network but are stored on the wireless network adapter or in the Windows registry.

Features of WEP

WEP was introduced as a part of IEEE 802.11 standard

It was available for 802.11a and 802.11b devices.

WEP uses encryption of data to make it unrecognizable to eavesdroppers

WEP operates at the data link and physical layer.

STEPS:

Creating connections using Ethernet and serial cable between devices

Configuring all the devices

PC0

IP configuration in desktop

192.168.1.2

Default Gateway: 192.168.1.1

PC1

IP configuration in desktop : 192.168.2.2

Default Gateway: 192.168.2.1

Router0

FastEthernet0/0 : 192.168.1.1

FastEthernet0/1 : 20.0.0.1

Serial0/0/0 : 10.0.0.1

Clock rate: 64000

Router1

FastEthernet0/0 : 192.168.2.1

Serial0/0/0 : 10.0.0.2

Clock rate: 64000

PC2

IP Config in desktop Set to DHCP

Configuring wireless router

Click on wireless router > GUI and set the address

192.168.1.2

Adding security mode as WEP and setting up key as 2a2a2a2a2a