MT7986 8021xd Application Notes

Version: 1.0

Release date: 2021-08-13

Version History

Version	Date	Author	Description
0.1	2021-8-13	Cheery Chen	Initial draft
1.0	2021-8-20	Cheery Chen	Add command to open 8021xd
1.1	2022-2-2	Micheal Su	Official release

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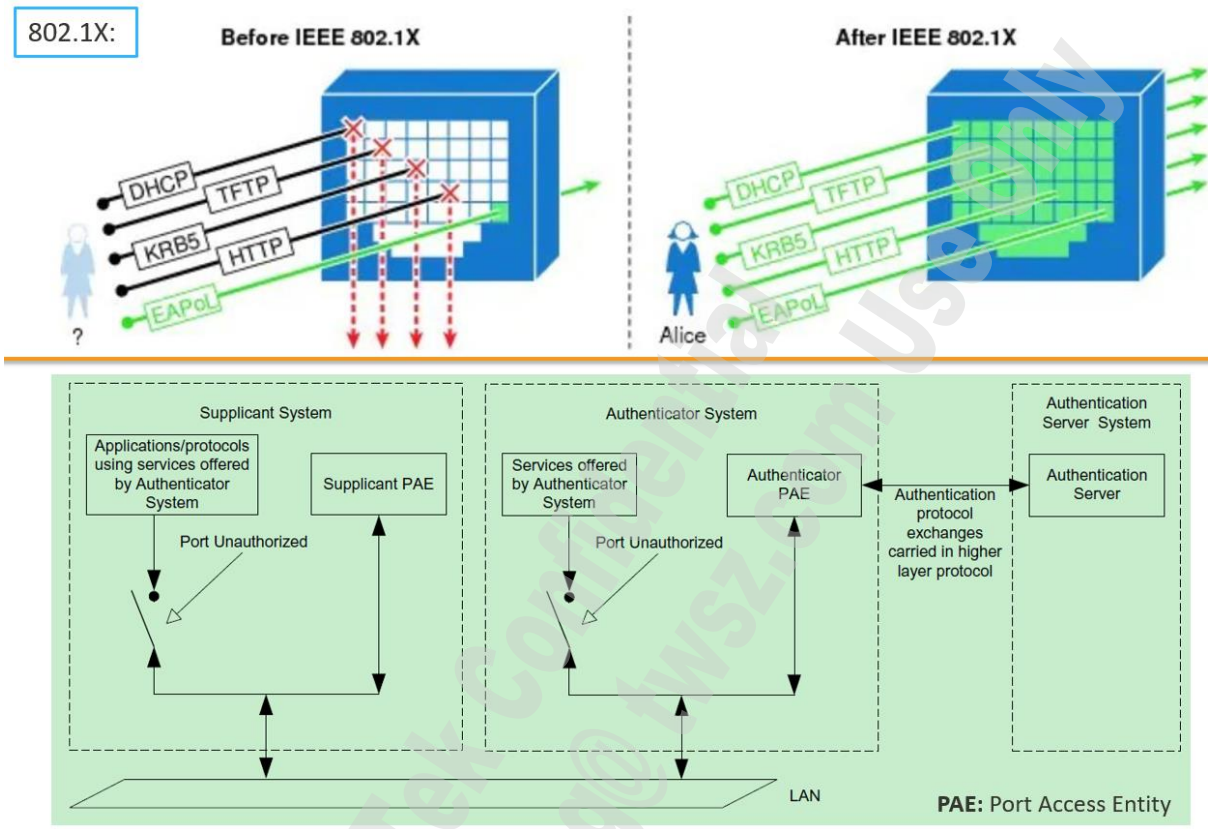
1 Introduction



IEEE 802.1X-2001: an IEEE Standard for port-based Network Access Control (PNAC). It is part of the IEEE 802.11 group of networking protocols. It provides an authentication mechanism to devices wishing to attach to a LAN or WLAN.

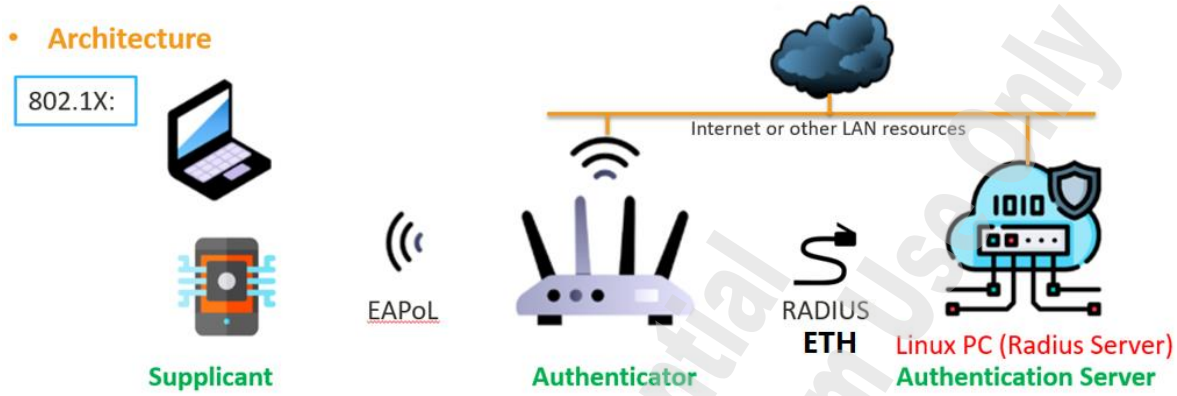
IEEE 802.1X-2004: it was clarified to suit other IEEE 802 LAN technologies such as IEEE 802.11 wireless and Fiber Distributed Data Interface (ISO 9314-2).

IEEE 802.1X-2010: The EAPOL was also modified for use with IEEE 802.1AE ("MACsec") and IEEE 802.1AR (Secure Device Identity, DevID) in 802.1X-2010 to support service identification and optional point to point encryption over the internal LAN segment.

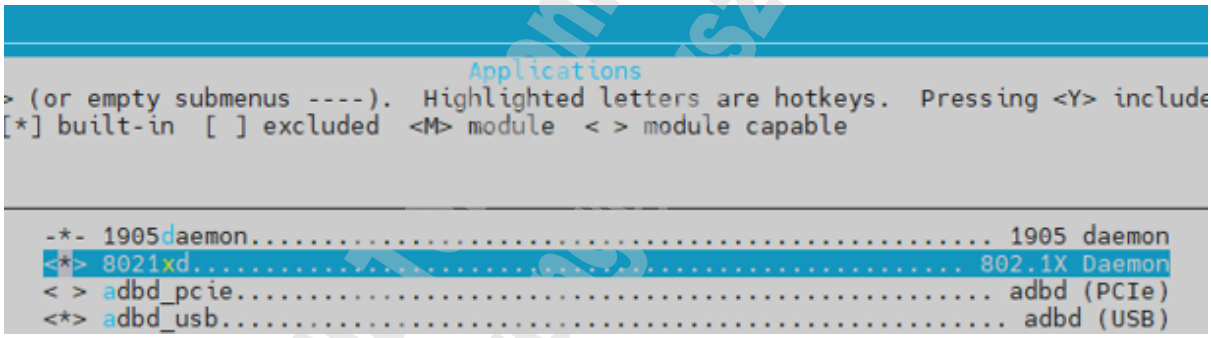
By default, 8021xd support for IEEE 802.1X-2001, about the other two version, just extend application range.

2 Architecture

8021xd only run at Authenticator. It is responsible for enterprise anthentication and an important role at AP.



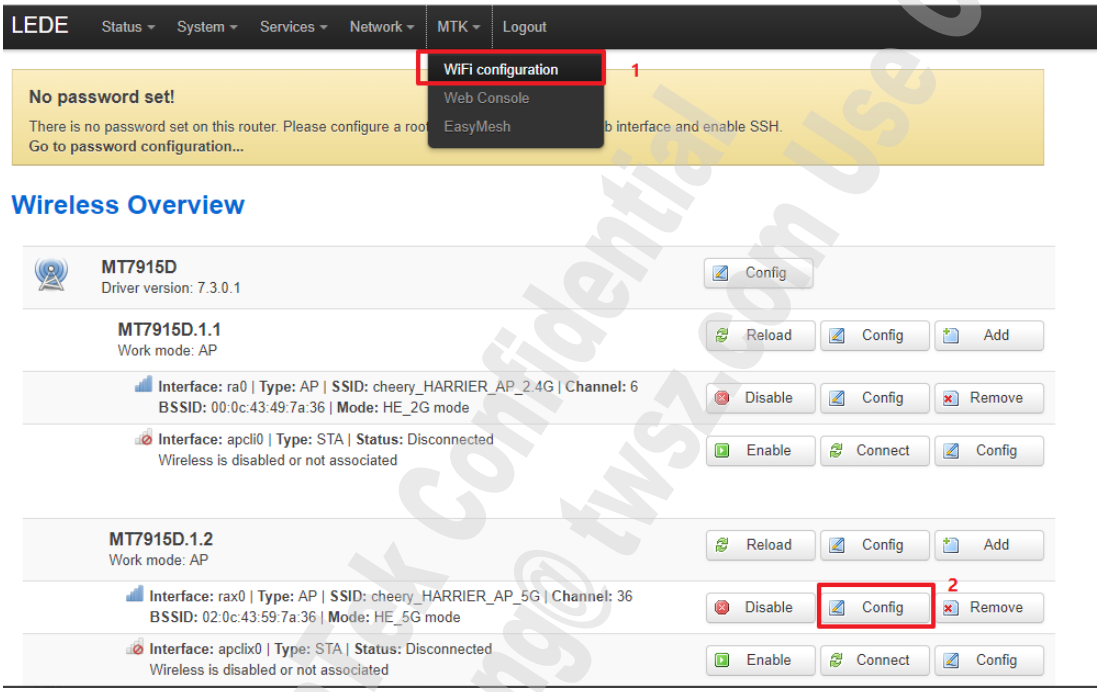
2.1 SDK Configuration



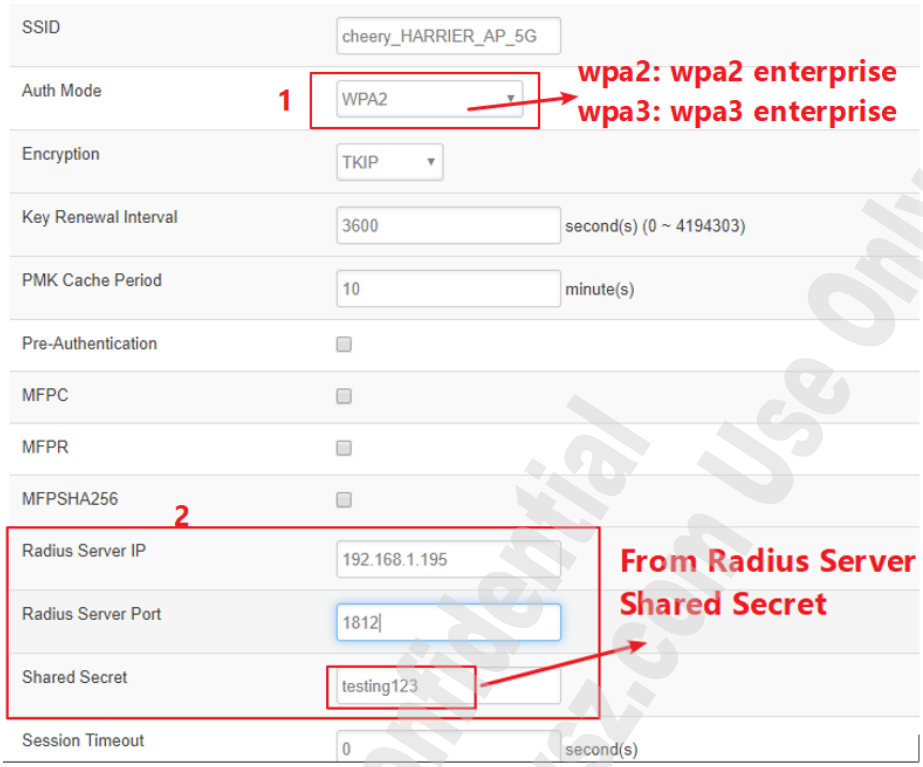
3 Getting Started with 8021xd

3.1 Enable 8021xd at WebUI

Step 1:



Step 2:



Save and apply

- *Use command: "ps"to check "8021xd" is existed. If not, try to use cmd "8021xd -i ra0 -p ra -d 3" to bring up 8021xd manually.*

3.2 Radius Server Setting up

3.2.1 Prerequisites

Tool	OS	Other
freeRadius	Ubuntu or Ubuntu Core 10.04+ *and* Linux kernel 3.0+ 1GB storage space 4GB memory x86 processor	

3.2.2 Install freeRadius

- Install software:
  - sudo apt-get install freeradius
- Change the limits of authority:
  - sudo chmod 755 -R /etc/freeradius

- Test software
  - sudo service freeradius stop
  - sudo freeradius -X

3.2.3 FreeRadius Configuration

Example:

1. Open /etc/freeradius/3.0/client.conf
2. Add
   client 192.168.1.1 {
   secret = testing123
   shortname = lede
   }
3. Open /etc/freeradius/3.0/users
4. Add
   Cheery Cleartext-Password := “123456”

3.2.4 Run FreeRadius

- sudo service freeradius stop
- sudo freeradius –X

3.3 Radius Server Setting up

Example:

1. EAP method: PEAP
2. Phase 2 authentication : None
3. CA Certification : None
4. Identity : cheery
5. Password : 123456

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