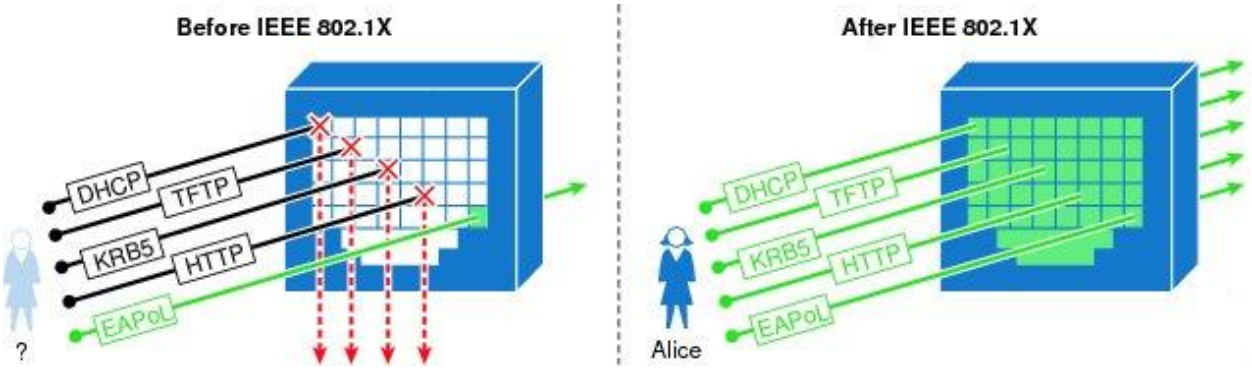
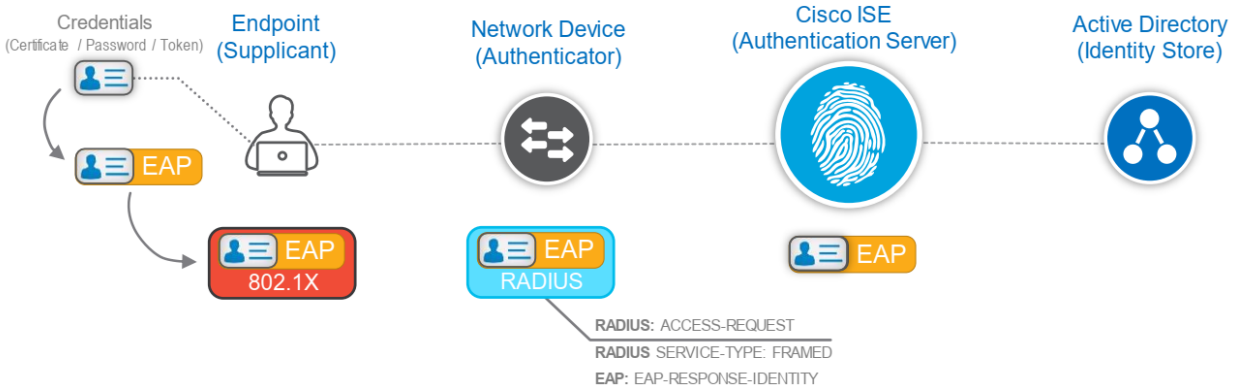
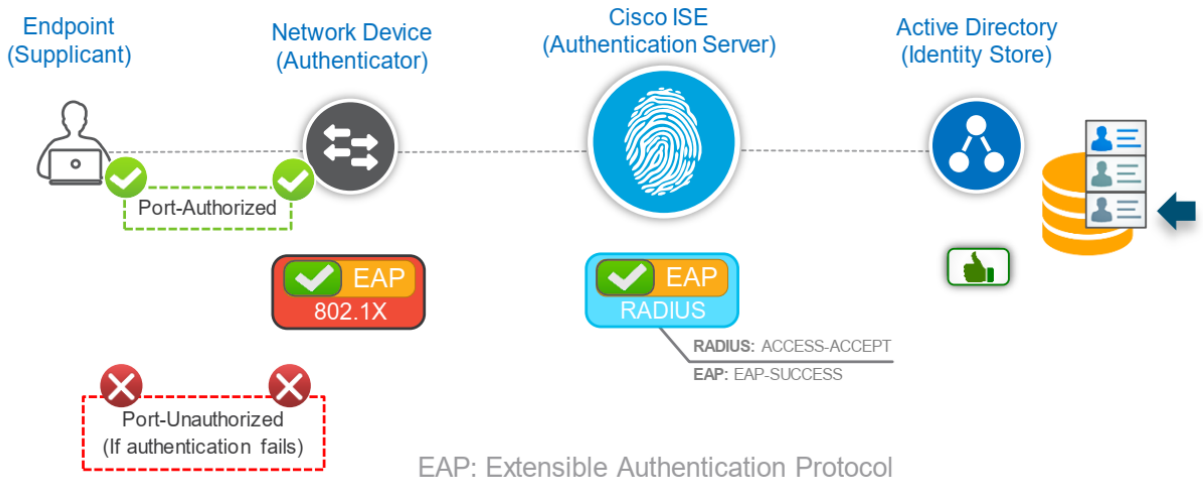
Introduction to 802.1X:

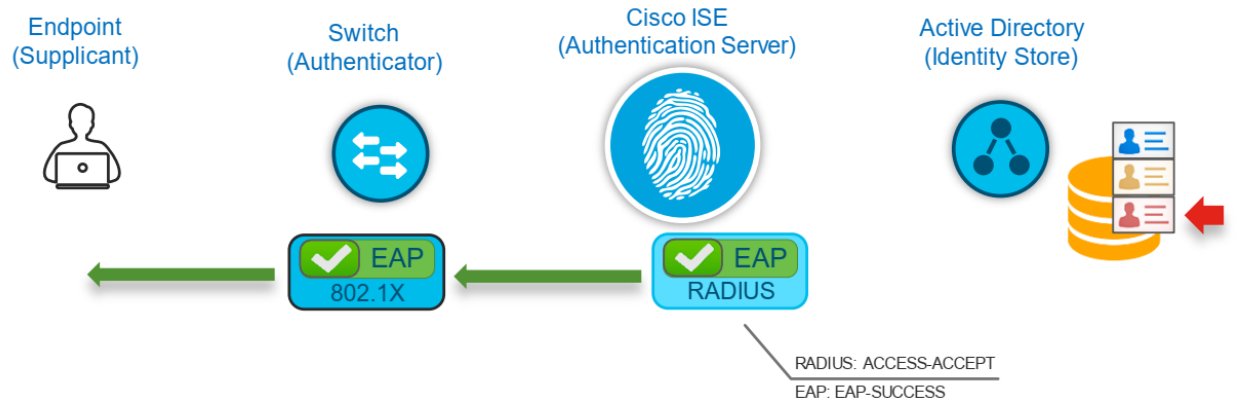
- IEEE 802.1x (Dot1x) is a standard set by the IEEE 802.1 working group Organization.
- IEEE 802.1X (Dot1x) commonly referred or called Dot1x Port Based Authentication.
- IEEE 802.1X (Dot1x) authentication is an OSI Model Data Link Layer (Layer 2) protocol.
- IEEE 802.1X (Dot1x) provide port-based network access control using authentication.
- IEEE 802.1X (Dot1x) authentication method service is called port-level authentication.
- IEEE 802.1x (Dot1x) is defined as a standard for "Port-Based Network Access Control".
- The protocol used in IEEE 802.1x (Dot1x) is called EAP Encapsulation over LANs (EAPOL).
- IEEE 802.1x (Dot1x) uses Extensible Authentication Protocol (EAP) to exchange messages.
- IEEE 802.1x (Dot1x) which referred Dot1x is used mainly for port-based authentication.
- Dot1x can be used to prevent unauthorized devices from gaining access to the network.
- Dot1x standards provide authentication & authorization services at network port level.
- IEEE 802.1x (Dot1x) provide real security for wired and wireless networks at layer two.
- IEEE 802.1x (Dot1x) authentication is a Client and Server based authentication protocol.
- Before authentication, identity of endpoint is unknown & all traffic is block except EAPoL.
- Once the user credentials are successfully verified, then the other user traffic is permitted.

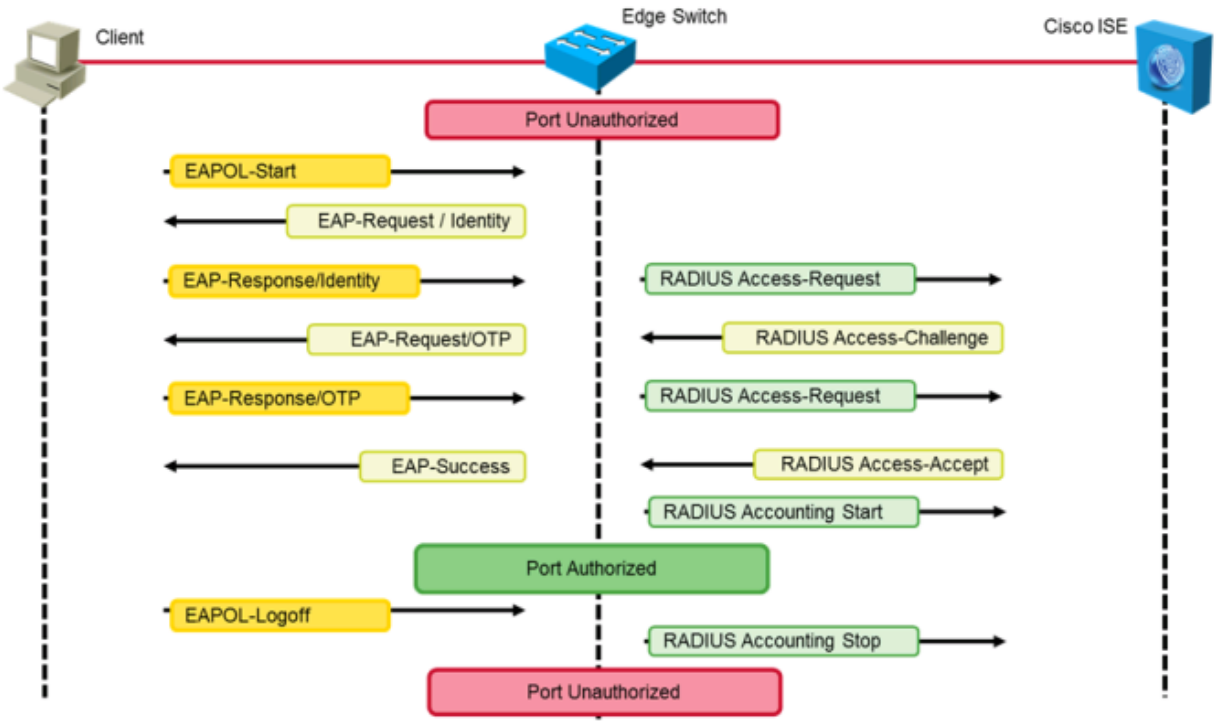






EAP: Extensible Authentication Protocol





SW2_e0/2

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eapol

No.	Time	Source	Destination	Protocol	Length	Info
79	159.579157443	aa:bb:cc:00:06:20	50:01:00:07:00:00	EAP	60	Request, Identity
103	169.839517111	aa:bb:cc:00:06:20	50:01:00:07:00:00	EAP	60	Request, Identity
111	180.121826492	aa:bb:cc:00:06:20	50:01:00:07:00:00	EAP	60	Request, Identity
120	190.375756362	aa:bb:cc:00:06:20	50:01:00:07:00:00	EAP	60	Failure

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radius

No.	Time	Source	Destination	Protocol	Length	Info
172	49.266959066	192.168.100.254	192.168.100.210	RADIUS	445	Access-Request id=90
181	49.346329610	192.168.100.210	192.168.100.254	RADIUS	236	Access-Challenge id=90
183	49.393812743	192.168.100.254	192.168.100.210	RADIUS	385	Access-Request id=91
184	49.397977730	192.168.100.210	192.168.100.254	RADIUS	200	Access-Challenge id=91
185	49.518942005	192.168.100.254	192.168.100.210	RADIUS	394	Access-Request id=92
195	49.629976836	192.168.100.210	192.168.100.254	RADIUS	327	Access-Accept id=92
196	49.631753803	192.168.100.254	192.168.100.210	RADIUS	346	Accounting-Request id=61
197	49.636654996	192.168.100.254	192.168.100.210	RADIUS	292	Accounting-Request id=62
198	49.640871017	192.168.100.210	192.168.100.254	RADIUS	62	Accounting-Response id=62
199	49.648583801	192.168.100.210	192.168.100.254	RADIUS	62	Accounting-Response id=61
420	210.168851087	192.168.100.254	192.168.100.210	RADIUS	318	Accounting-Request id=63