

IT Security course

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802.1x

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Contents

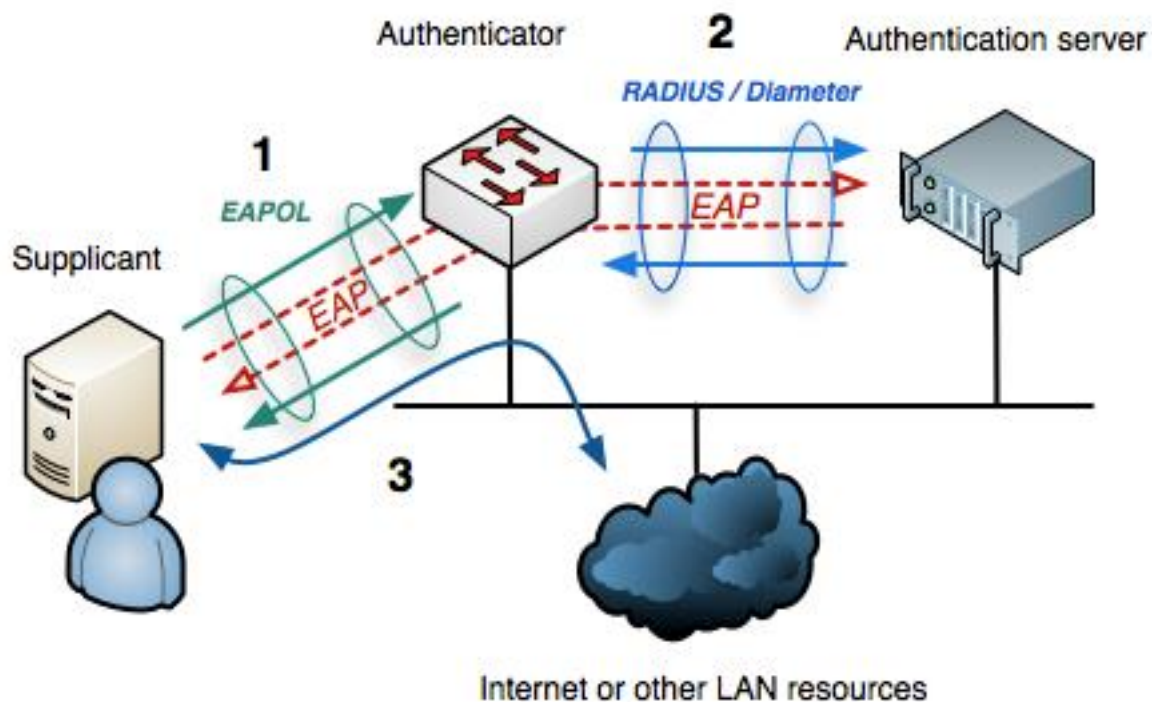
- 1. Cours : 802.1x Port-Based Network Access Control..... 3
 - 1.1 Introduction 3
 - 1.2 Rendu..... 4
 - 1.3 Exercice 1 5
 - 1.4 Exercice 2 5
 - 1.5 Exercice 3 5
- 2. License 6
 - 2.1 Definitions..... 6
 - 2.2 Fair Dealing Rights 8
 - 2.3 License Grant 8
 - 2.4 Restrictions 8
 - 2.5 Representations, Warranties and Disclaimer 10
 - 2.6 Limitation on Liability 11
 - 2.7 Termination 11
 - 2.8 Miscellaneous 11

1. Cours : 802.1x Port-Based Network Access Control

1.1 Introduction

Afin de sécuriser les connexions physiques entre les éléments d'un réseau, pour éviter par exemple que n'importe qui ne se connecte n'importe où sur un switch, une solution est le 802.1x.

Cette technologie s'articule comme précisé par le schéma suivant :



Le *Supplicant* fait une demande auprès de l'*Authenticator* (1) qui interroge l'*Authentication server* sur l'identité du *Supplicant* (2). Si celui-ci valide l'identité du *Supplicant*, le port de l'*Authenticator* sur lequel est branché le *Supplicant* est connecté au réseau (3).

Il vous faudra donc au moins 3 machines, virtuelles ou non.

On pourra tester la connexion au réseau en se connectant en ssh à l'*Authentication server* à partir du *Supplicant*.

Vous utiliserez ici l'outil *hostapd* sur l'*Authenticator* et *freeradius* sur l'*Authentication server*.

Vous utiliserez une interface graphique de connexion réseau dans la VM Debian ou bien l'outil *wpa_supplicant* sur le *Supplicant*.

1.2 Rendu

Les modalités de rendu sont les suivantes :

- Le sujet du mail doit être sous le format habituel : « [E4FR][802.1x][HANDIN] your_lastname » par exemple (pour le détails se référer au mail déjà envoyé sur la ML).
- Le rendu en pièce jointe devra être une « tarball » au format tar.bz2 nommée « your_lastname.tar.bz2 », avec *your_lastname* étant un des participant au rendu.
- La tarball doit contenir un dossier à la racine nommé *your_lastname*
- Le fichier README à la racine doit être vide
- Le fichier ANSWERS à la racine doit être vide
- Le fichier AUTHORS à la racine doit être de la forme suivante :

```
$ cat -e AUTHORS
prénom nom$
prénom nom$
```

- Par exercice vous devez créer un dossier nommé exX
- Dans le dossier exX vous devez avoir absolument 3 sous-dossiers :
 - o authenticator : contenant les fichiers de configuration correspondants
 - o server : contenant les fichiers de configuration correspondants
 - o supplicant : contenant les fichiers de configuration correspondants
- L'arborescence de votre rendu doit être de la forme suivante (à adapter, c'est un exemple) :

```
$ tree -a your_lastname
your_lastname
├── ANSWERS
├── AUTHORS
├── ex1
│   ├── authenticator
│   └── server
├── ex2
│   ├── authenticator
│   └── server
└── ex3
    ├── authenticator
    ├── server
    └── supplicant
```

N directories, M files

Pour tout point à préciser, n'oubliez pas la possibilité de poser des questions dans un mail ayant pour sujet :

[E4FR][802.1x][QUESTION] your_lastname

1.3 Exercice 1

Mettre en place une configuration 802.1x en suivant le schéma de l'introduction, où l'identité du *Supplicant* est validée par son adresse MAC.

1.4 Exercice 2

Mettre en place une configuration 802.1x en suivant le schéma de l'introduction, où l'identité du *Supplicant* est validée par certificat en utilisant l'interface graphique pour faire la configuration côté *Supplicant*.

Vous trouverez les certificats en support de cours sur le site web.

1.5 Exercice 3

Mettre en place une configuration 802.1x en suivant le schéma de l'introduction, où l'identité du *Supplicant* est validée par certificat en utilisant `wpa_supplicant` pour faire la configuration côté *Supplicant*.

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