Hes·so VALAIS WALLIS

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OT Security

Presentation and choice of attack scenarios

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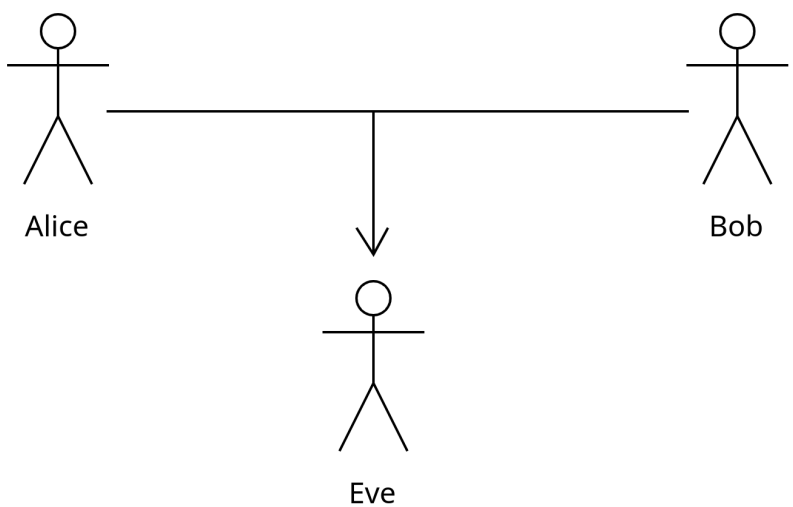
OT attacks

Sniffing

- Intercept packets and analyze them
- For other attacks or industrial spying
- Wifi usually with password
  - Or assume password is known

SOL : Use encryption like modbus over TLS



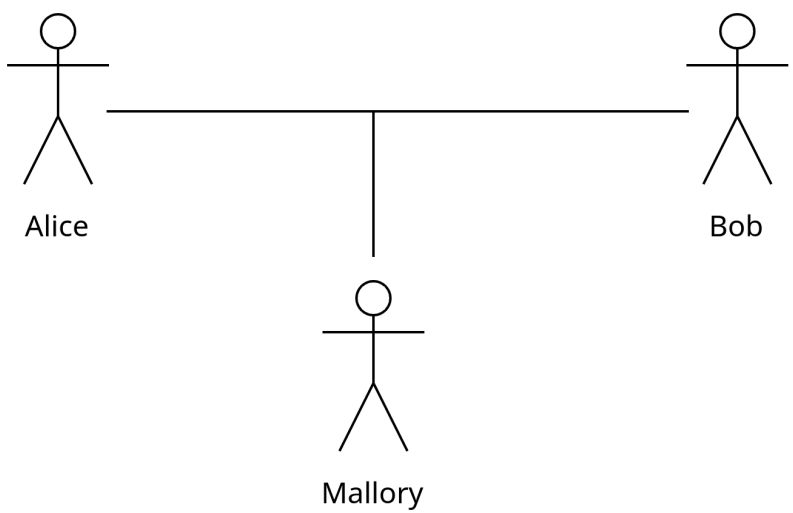
Spoofing

- Create a fake WiFi hotspot
- Easy way for do a get information for succed a MitM
- More IT world

DoS

- Denial of Service
- Spam or Ping of Death
- DDoS more IT world

SOL : Ban IP by the transport layer (or lower)

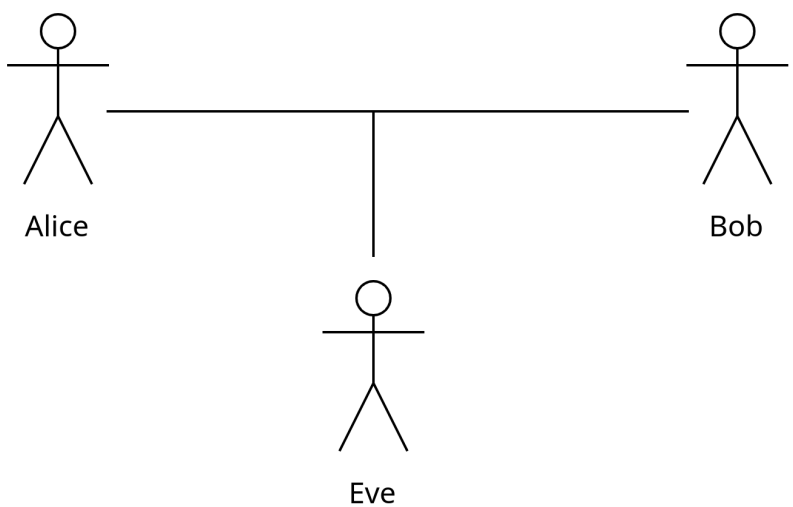


Replay attack

- Replay a packet
- Need sniffing
- Understand or not the packet

SOL : Add a signed timestamp

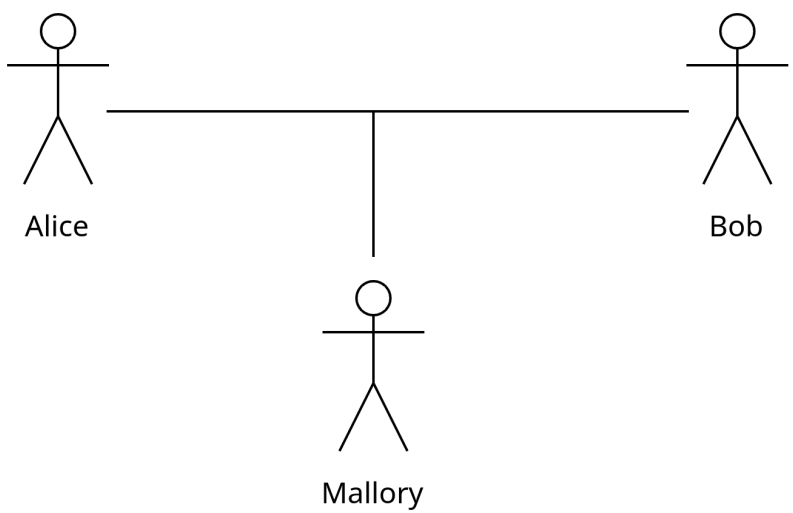
SOL : Rolling code



Man in the middle - Connected

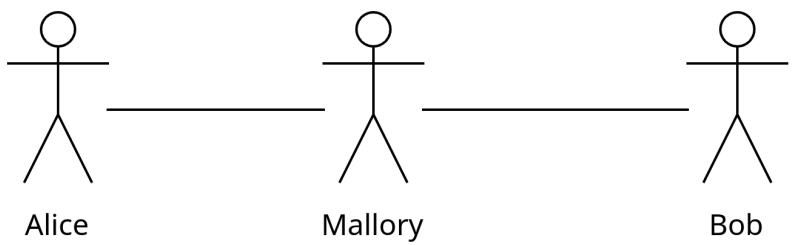
- Send custom packets
- Better with sniffing

SOL : Use encryption with symetric key. Keys exchange with Diffie-Hellman



Man in the middle - Full interception

- Send custom packets
- Intercept everything
- Better with sniffing



SOL : Use encryption like modbus over TLS

Attack scenarios

- DoS by external sensor (external temp by example)
- Wireless Replay attack (433-868 MHz)
- Man in the middle on Modbus over TCP
- Man in the middle on Modbus over TCP with standard encryption

Simulation environnement

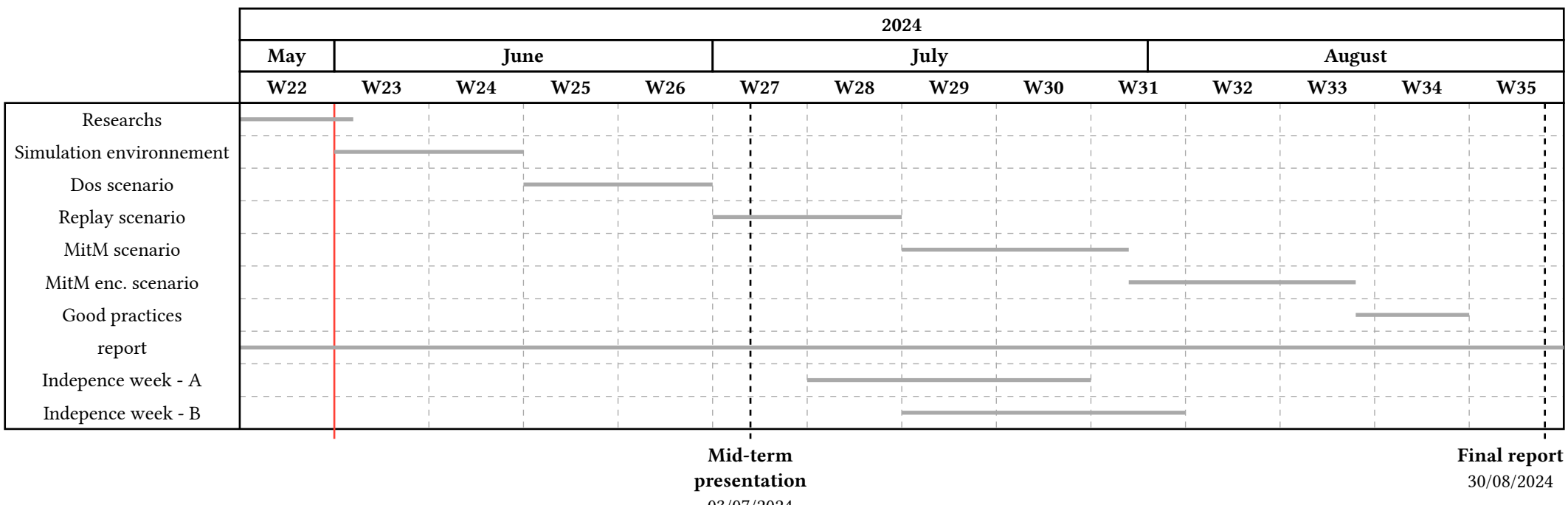
Factory I/O

- Simulation of a factory
- Realistic
- No integreted security

Minecraft

- Simulation of anything
- Cross platforms
- Security in Open Computer

Planning


2024
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Researchs
Simulation environnement
Dos scenario
Replay scenario
MitM scenario
MitM enc. scenario
Good practices
report
Indepence week - A
Indepence week - B
Mid-term presentation
03/07/2024
Final report
30/08/2024