

More MitM Makes
Mana Mostly Mediate
Mischievous Messages

we
[hack, build, train, scan|]
stuff


@singe
@cablethief

dominic@sensepost.com
michael@sensepost.com



SENSEPOST

Tracking Scenarios

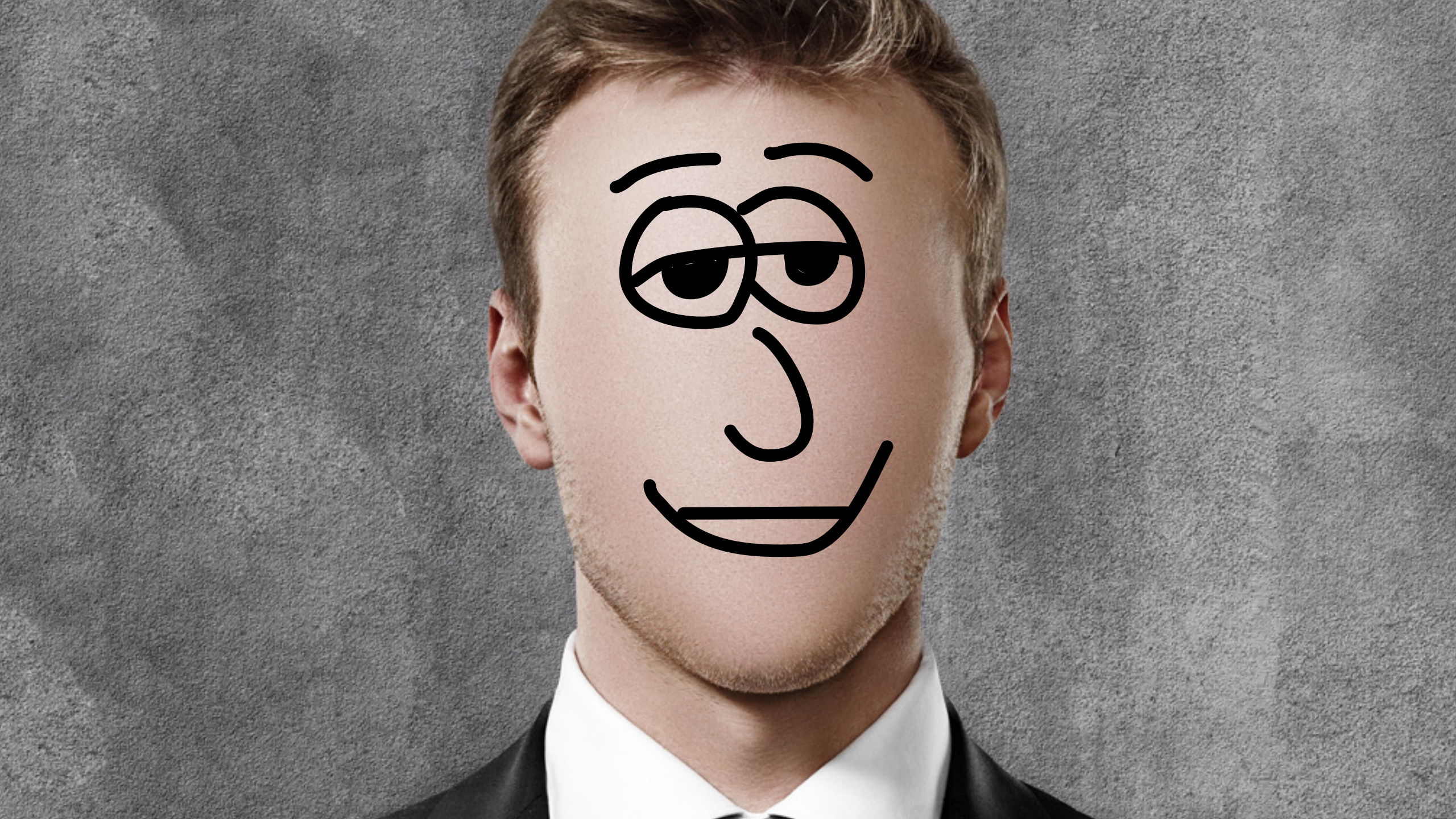
Scenario 1 Snoopy

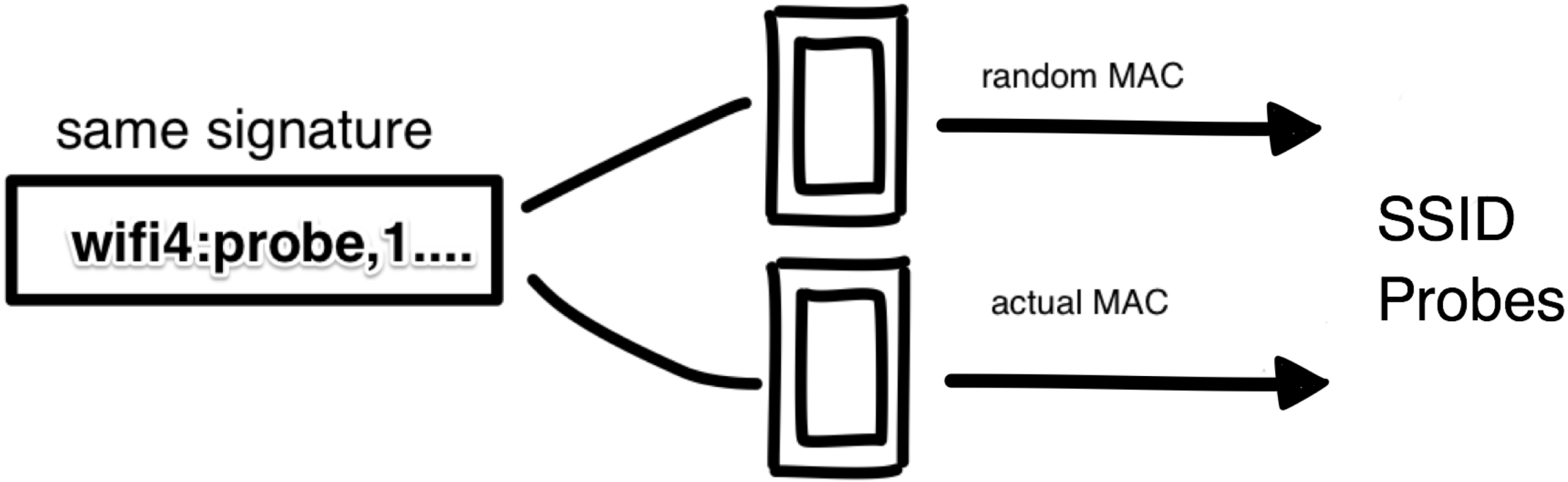


Don't go to them
Make them come to you





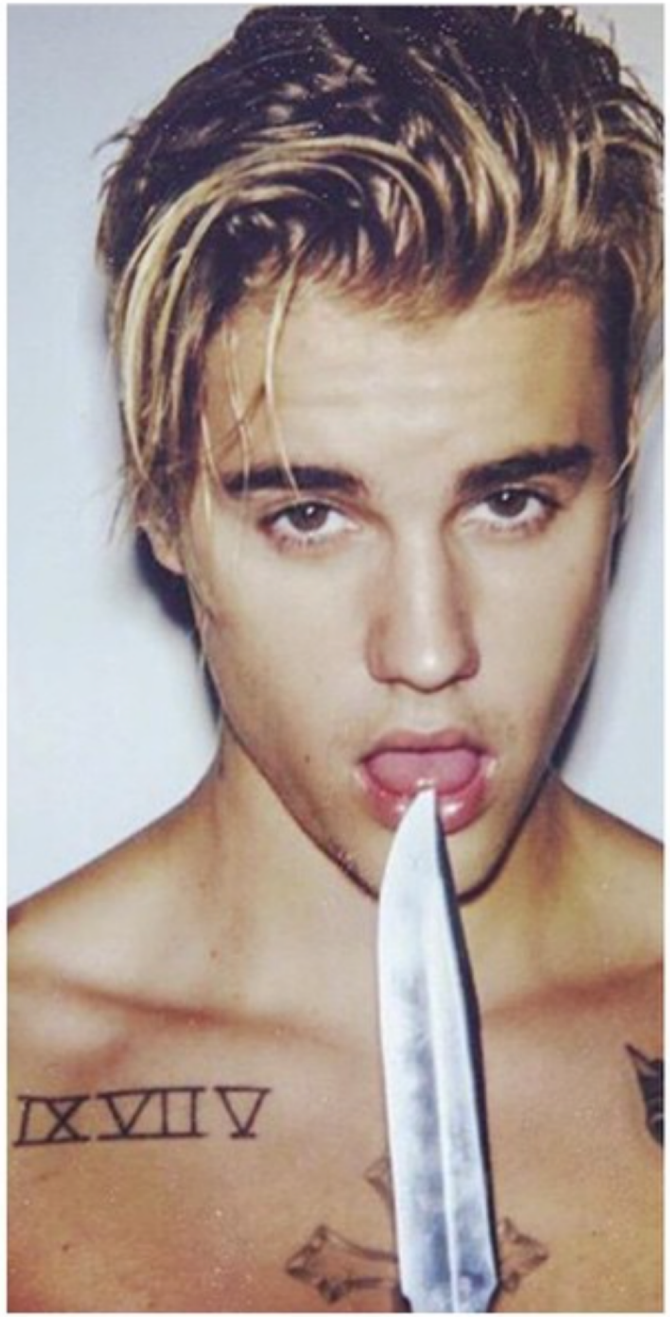


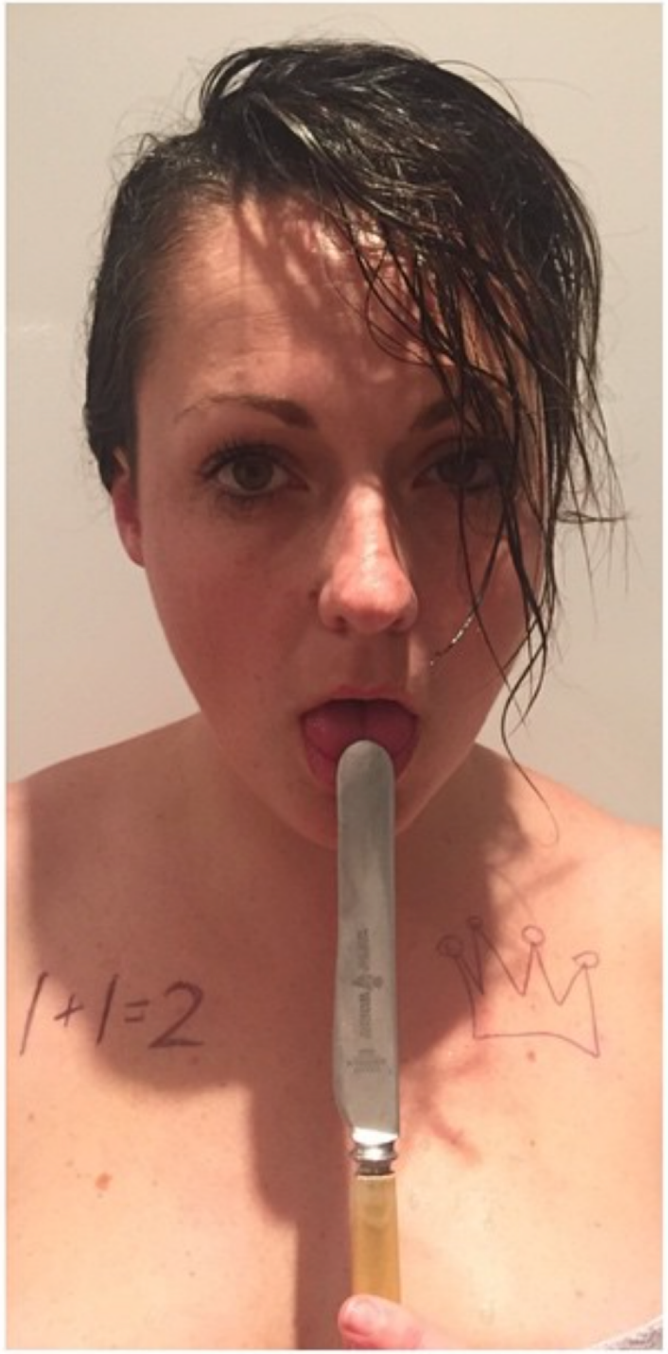

same signature
wifi4:probe,1....
random MAC
actual MAC
SSID
Probes

Enterprise EAP Networks

Scenario 2 EAP







celestebarber • Follow

celestebarber Cutting edge #celestechallengeaccepted #justinbieber #nailedit #funny @dailymail

Load more comments

kmcghehey @kitkatya123 tats

biankabazso @mtimejja

ardita.sokolii @afoortm

megancmcg @abrock11 I feel like you'll find this as entertaining as I do! The whole account meaning.

maxx.headroom @rebeccamorgan10

tefi_salazar "1+1=2" JAJAJAJAJA @juanisaldago @ipj_32

isajaramilloh JAJAJJAJAJAJAJA @tefi_salazar

olaaatz21 @martin_el_dios_del_sexo

8,315 likes

AUGUST 15, 2015

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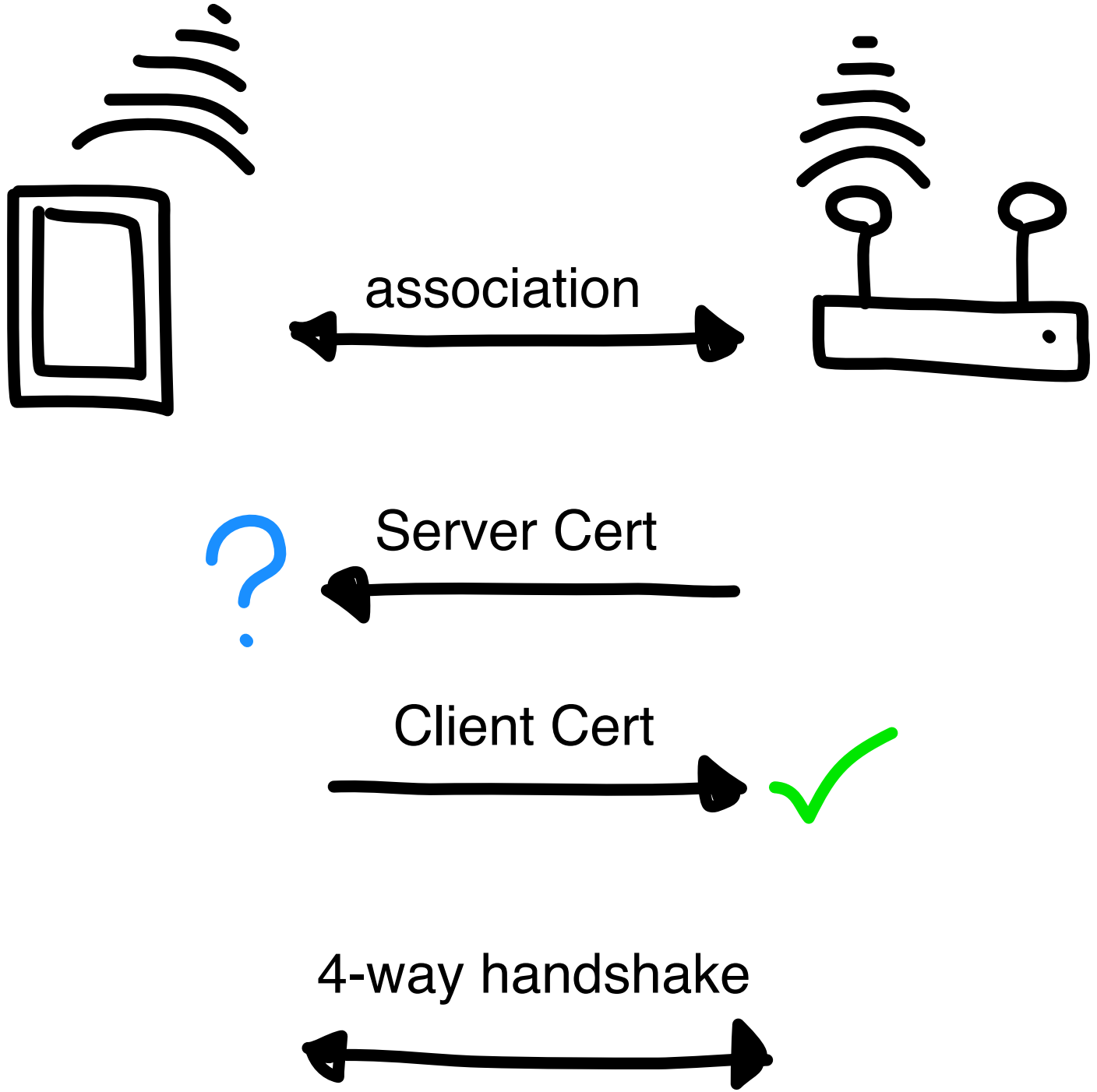
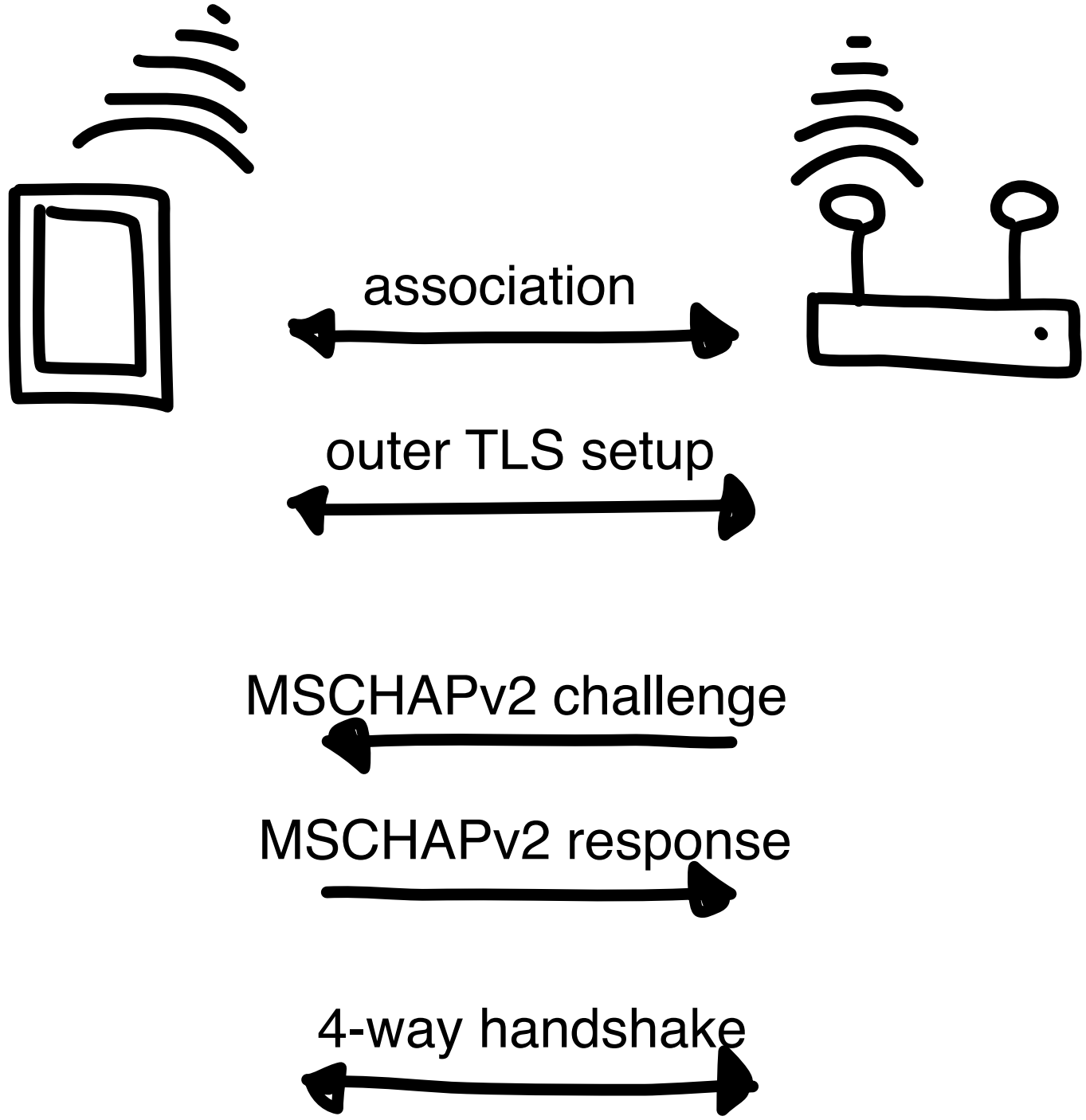
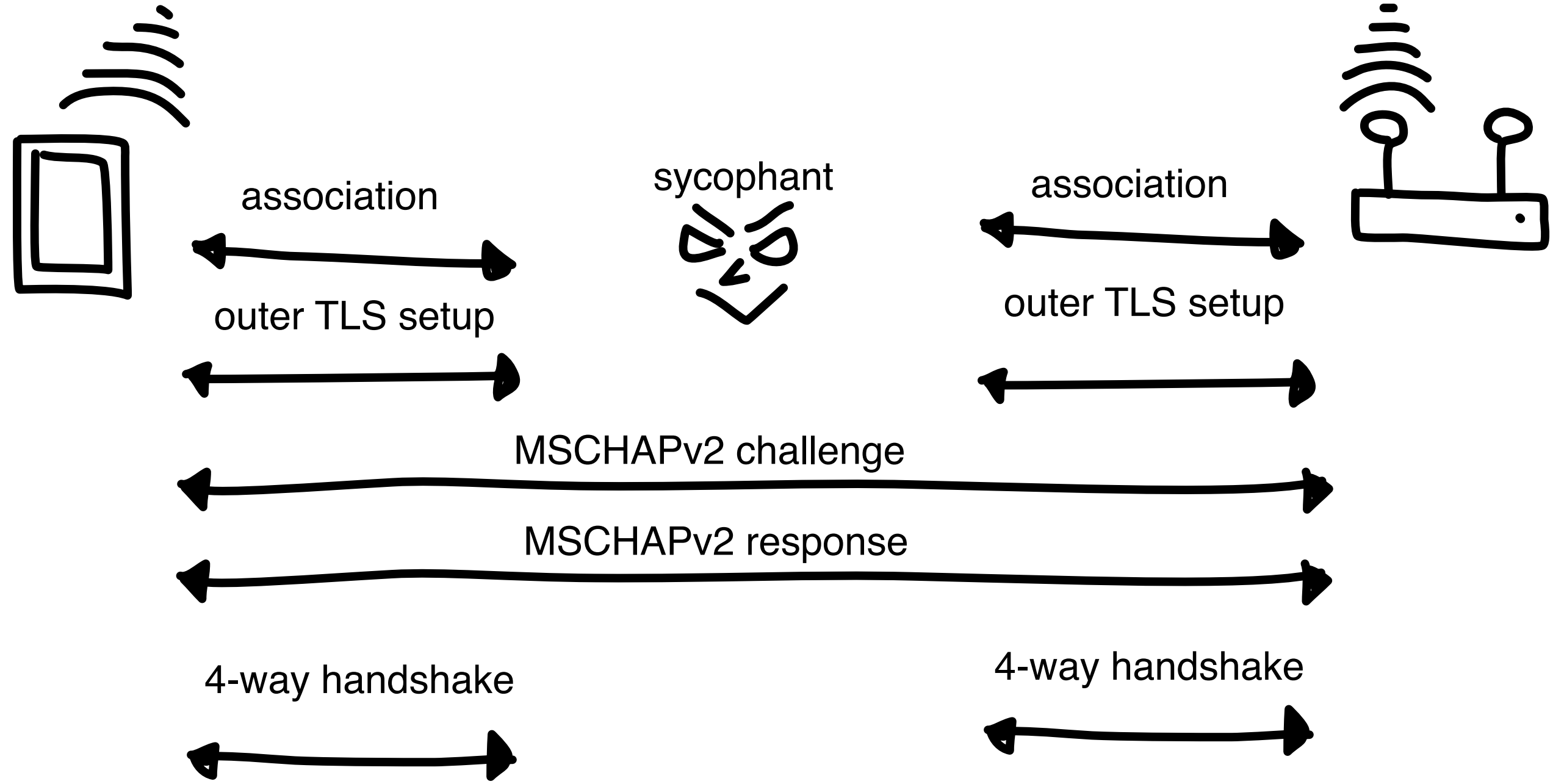

association
Server Cert
Client Cert
4-way handshake

EAP Relay with Sycophant



By @cablethief


association
outer TLS setup
MSCHAPv2 challenge
MSCHAPv2 response
4-way handshake


association
sycophant
association
outer TLS setup
outer TLS setup
MSCHAPv2 challenge
MSCHAPv2 response
4-way handshake
4-way handshake

7.4. Man-in-the-Middle Attacks

Where EAP is tunneled within another protocol that omits peer authentication, there exists a potential vulnerability to a man-in-the-middle attack. For details, see [BINDING] and [MITM].

As noted in Section 2.1, EAP does not permit untunneled sequences of authentication methods. Were a sequence of EAP authentication methods to be permitted, the peer might not have proof that a single entity has acted as the authenticator for all EAP methods within the sequence. For example, an authenticator might terminate one EAP method, then forward the next method in the sequence to another party without the peer's knowledge or consent. Similarly, the authenticator might not have proof that a single entity has acted as the peer for all EAP methods within the sequence.

Tunneling EAP within another protocol enables an attack by a rogue EAP authenticator tunneling EAP to a legitimate server. Where the tunneling protocol is used for key establishment but does not require peer authentication, an attacker convincing a legitimate peer to connect to it will be able to tunnel EAP packets to a legitimate server, successfully authenticating and obtaining the key. This allows the attacker to successfully establish itself as a man-in-the-middle, gaining access to the network, as well as the ability to decrypt data traffic between the legitimate peer and server.

This attack may be mitigated by the following measures:

[a] Requiring mutual authentication within EAP tunneling mechanisms.

[b] Requiring cryptographic binding between the EAP tunneling protocol and the tunneled EAP methods. Where cryptographic binding is supported, a mechanism is also needed to protect against downgrade attacks that would bypass it. For further details on cryptographic binding, see [BINDING].

[c] Limiting the EAP methods authorized for use without protection, based on peer and authenticator policy.

[d] Avoiding the use of tunnels when a single, strong method is available.

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[d] Avoiding the use of tunnels when a single, strong method is available.

Allow access only to those clients that authenticate with the specified methods.

EAP types are negotiated between NPS and the client i
listed.

EAP Types:

Microsoft: Protected EAP (PEAP)

Add... Edit... Remove

Less secure authentication methods:

Microsoft Encrypted Authentication version 2 (MS-CH

User can change password after it has expired

Microsoft Encrypted Authentication (MS-CHAP)

User can change password after it has expired

Encrypted authentication (CHAP)

Unencrypted authentication (PAP, SPAP)

Allow clients to connect without negotiating an authe

Edit Protected EAP Properties

Select the certificate the server should use to prove its identity to the client. A certificate that is configured for Protected EAP in Connection Request Policy will override this certificate.

Certificate issued to: WIN-JQGTT06ARK9.wifidomain.local

Friendly name: WIN-JQGTT06ARK9.wifidomain.local

Issuer: wifidomain-WIN-JQGTT06ARK9-CA

Expiration date: 2019/06/30 5:06:48 PM

Enable Fast Reconnect

Disconnect Clients without Cryptobinding

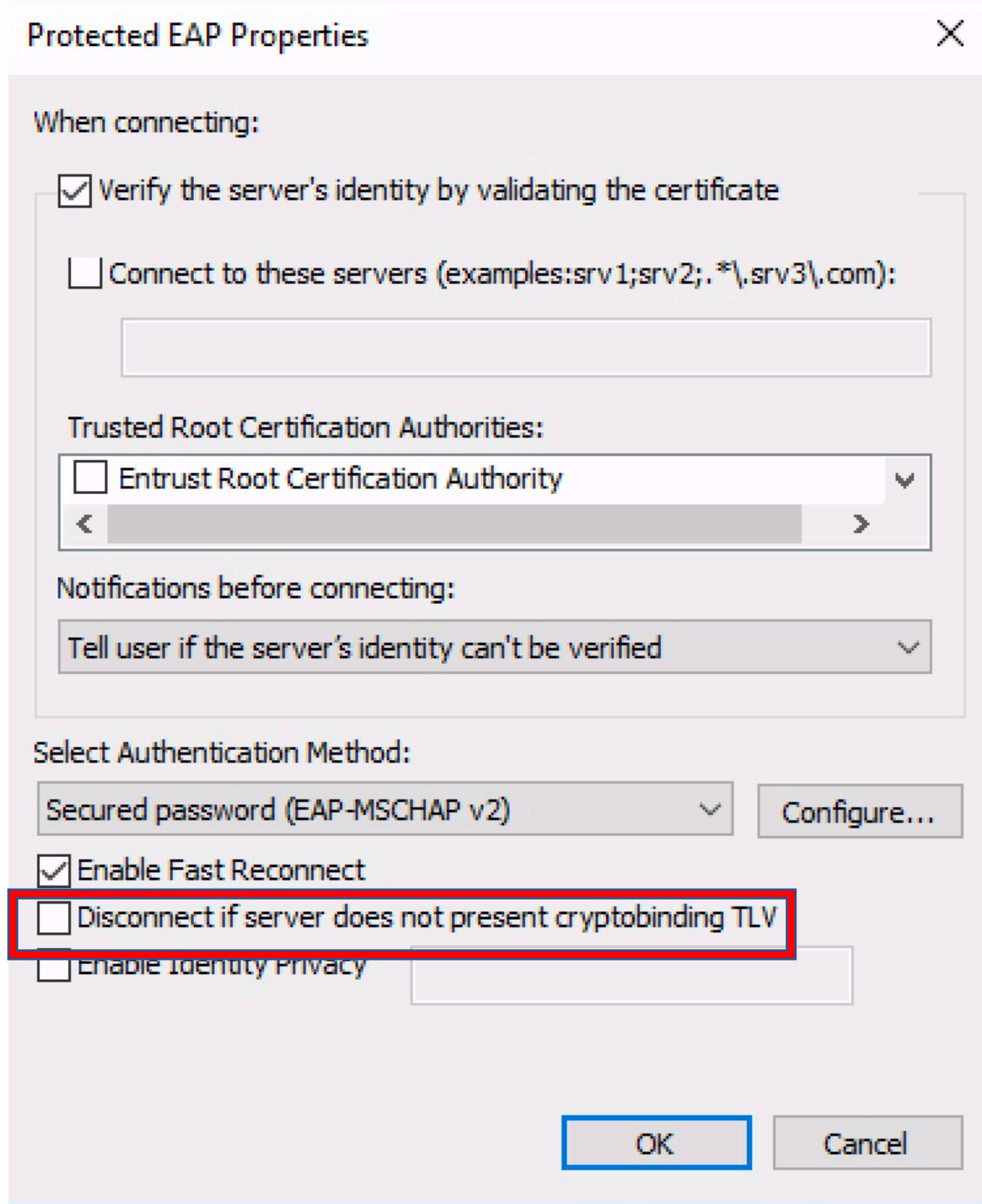
Eap Types

Secured password (EAP-MSCHAP v2)

Move Up

Move Down

Add Edit Remove OK Cancel


Protected EAP Properties
When connecting:
Verify the server's identity by validating the certificate
Connect to these servers (examples:srv1;srv2;.*\.srv3\.com):
Trusted Root Certification Authorities:
Entrust Root Certification Authority
Notifications before connecting:
Tell user if the server's identity can't be verified
Select Authentication Method:
Secured password (EAP-MSCHAP v2)
Configure...
Enable Fast Reconnect
Disconnect if server does not present cryptobinding TLV
Enable Identity Privacy
OK
Cancel

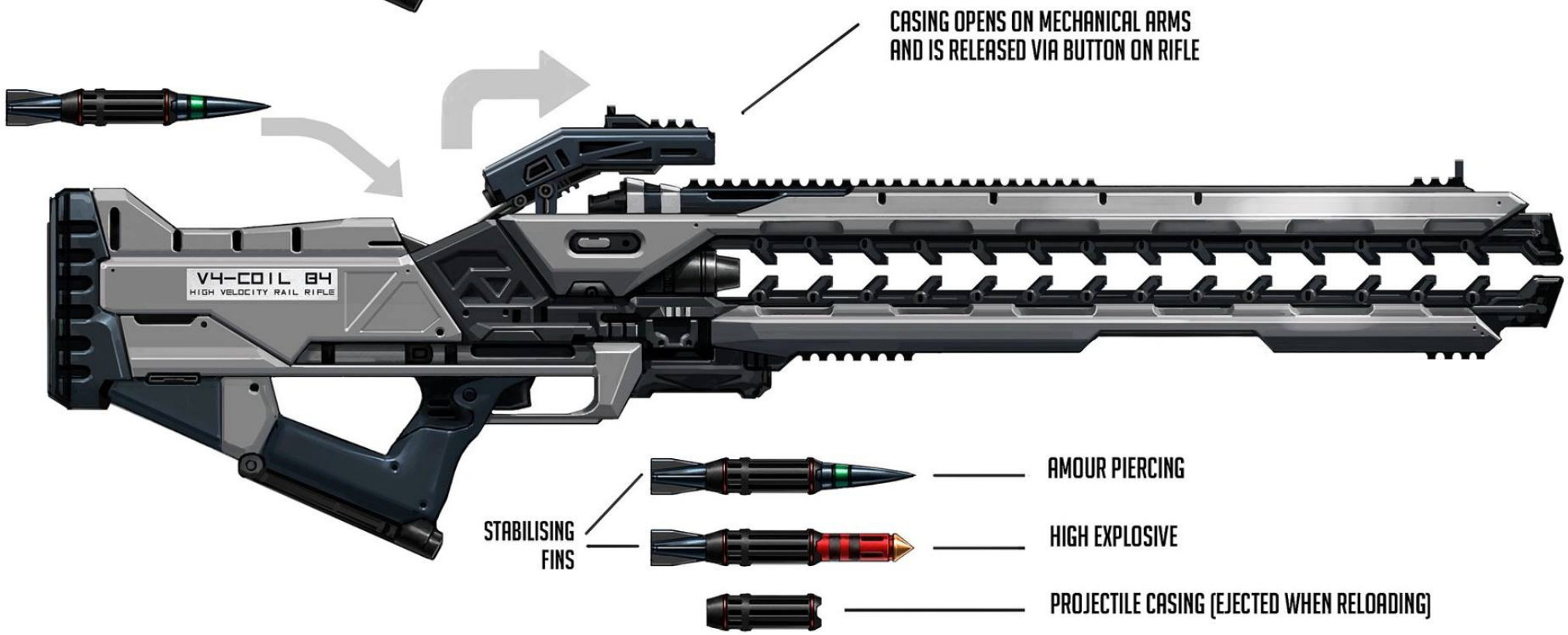
Mallory in the Middle

Scenario 3 MitM


MANA




V4-COIL 84
HIGH VELOCITY RAIL RIFLE


CASING OPENS ON MECHANICAL ARMS
AND IS RELEASED VIA BUTTON ON RIFLE
V4-COIL 84
HIGH VELOCITY RAIL RIFLE
STABILISING
FINS
AMOUR PIERCING
HIGH EXPLOSIVE
PROJECTILE CASING (EJECTED WHEN RELOADING)

RAIL GUN

Practise

HW-less CTFs



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