Tor

Cenni storici

Tor nasce da un progetto dagli U.S. Naval Research Laboratory, come strumento dedicato alla mirina militare.

Era un servizio primario per la protezione delle comunicazioni governative.

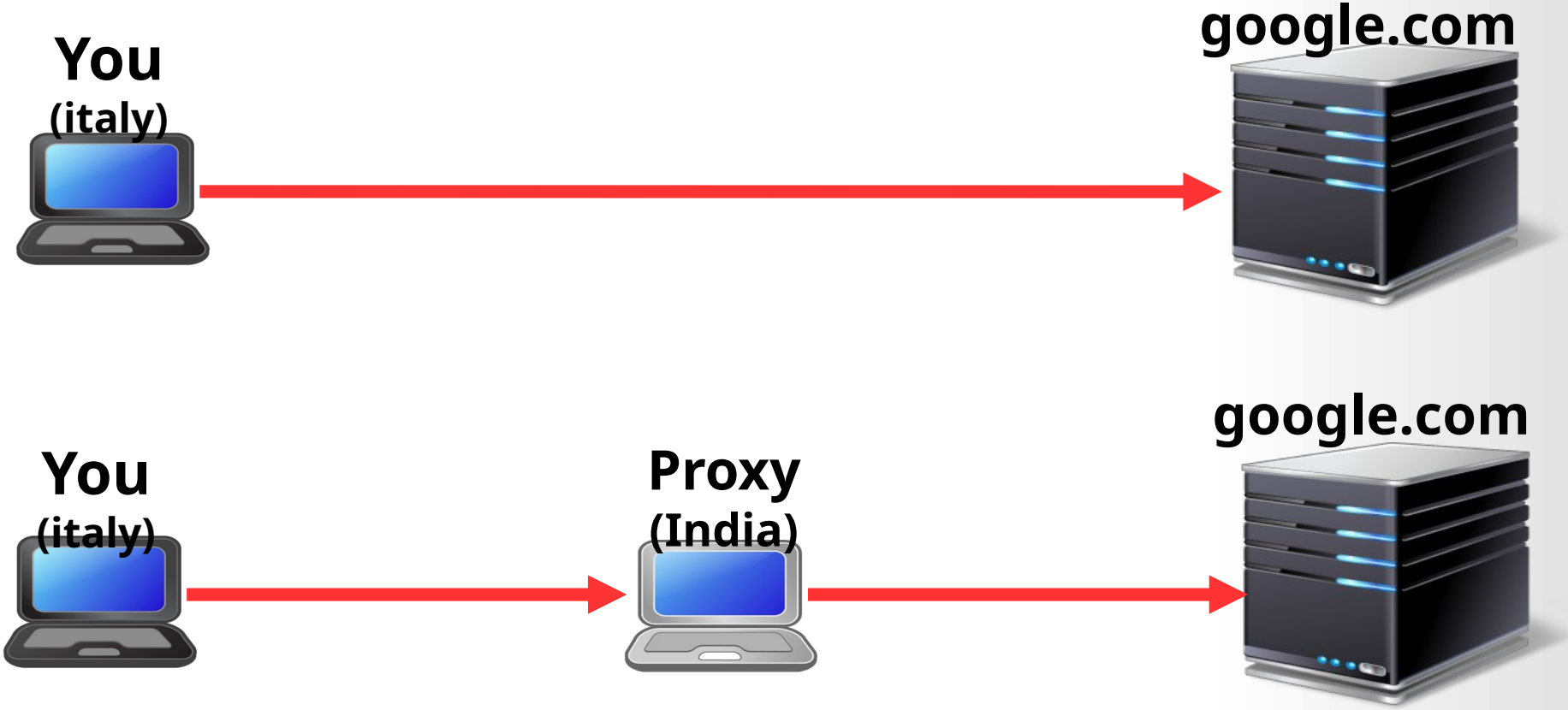
Oggi è un progetto open-source disponibile per chiunque, sviluppato dalla The Tor Project, un' associazione senza scopo di lucro. Viene utilizzato da giornalisti, militari, forze dell'ordine, whistleblower, infiltrati e sopratutto dagli hacktivisti.

Concetti Di Base

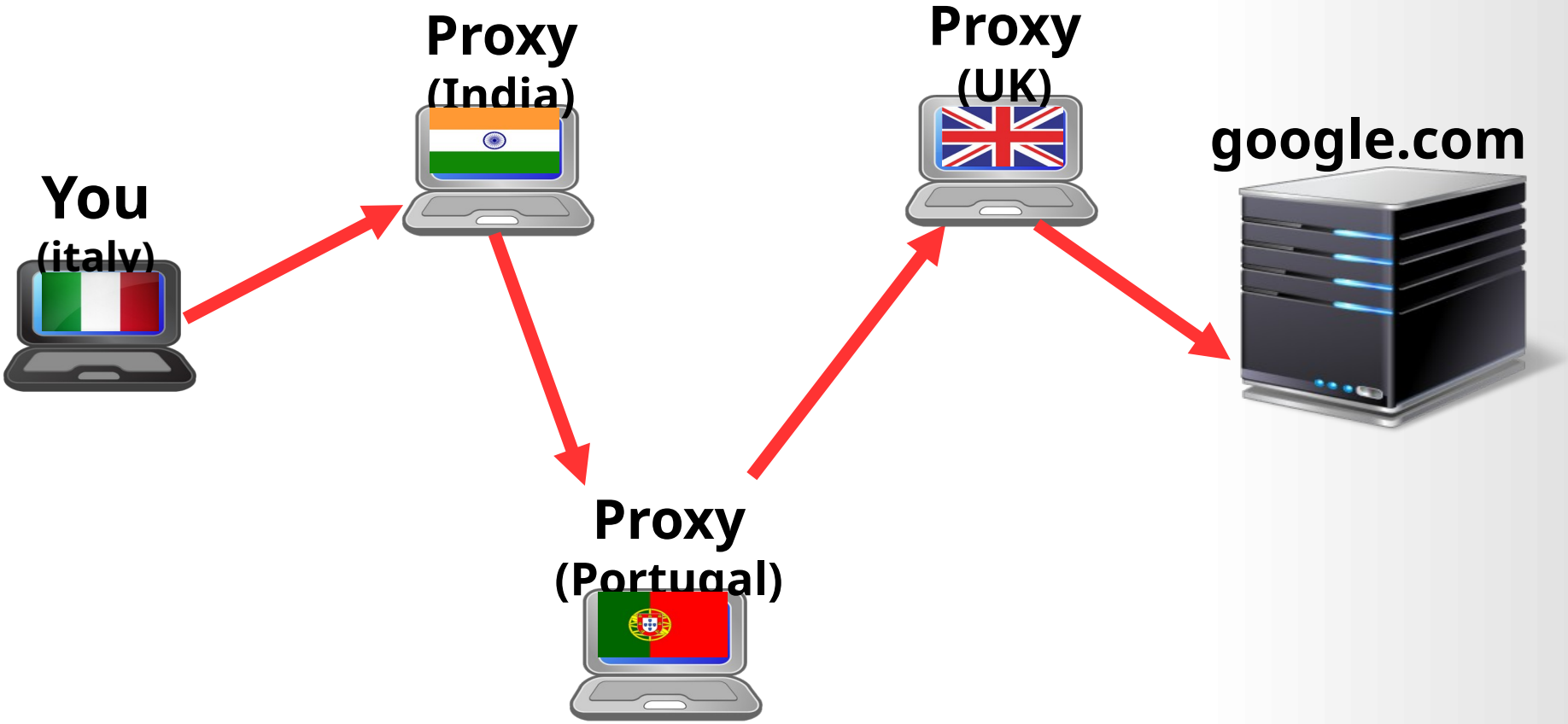
- Proxy
- Crittografia Asimmetrica
- Crittografia Asimmetrica su più livelli

Proxy

Proxy



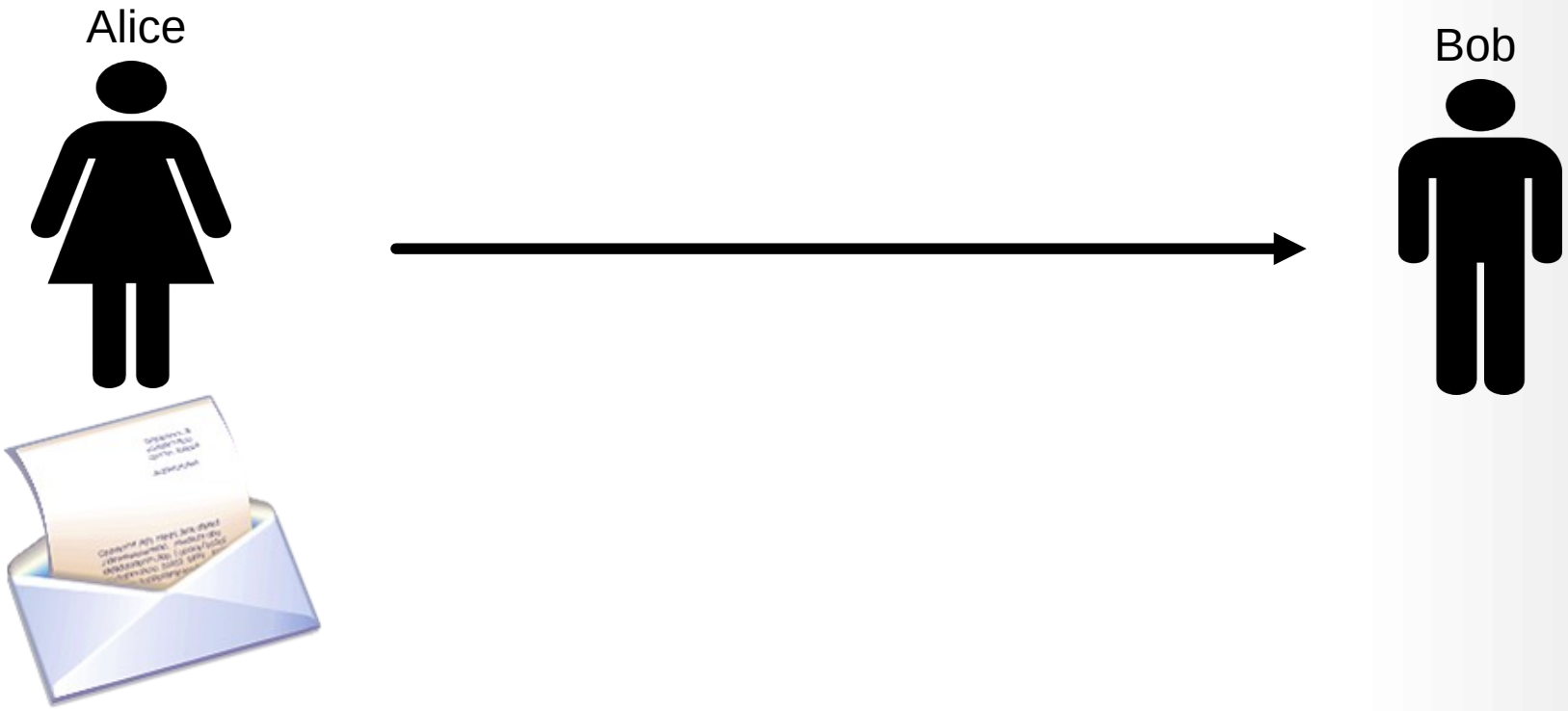
Proxy



Concetti Di Base

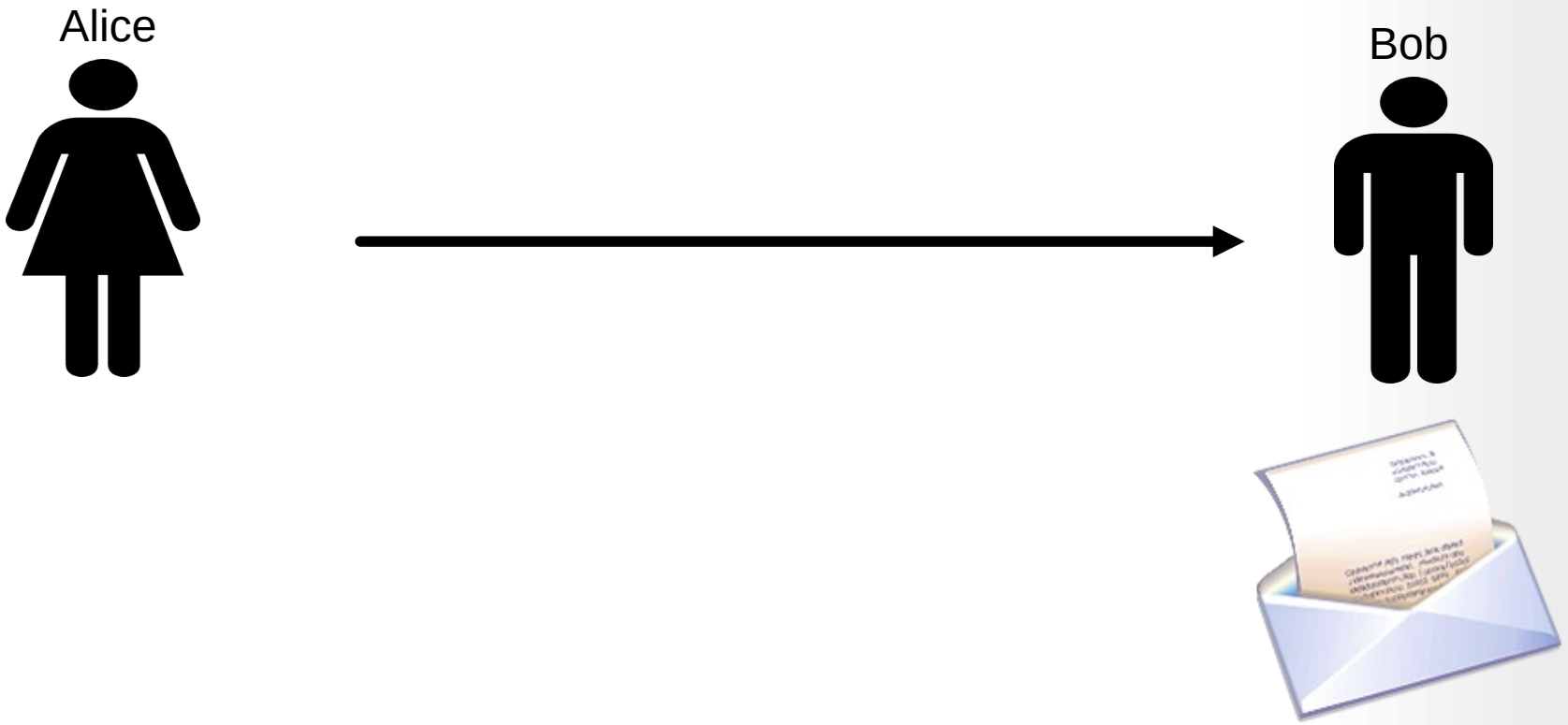
- ~~Proxy~~
- Crittografia Asimmetrica
- Crittografia Asimmetrica su più livelli

Crittografia Asimmetrica

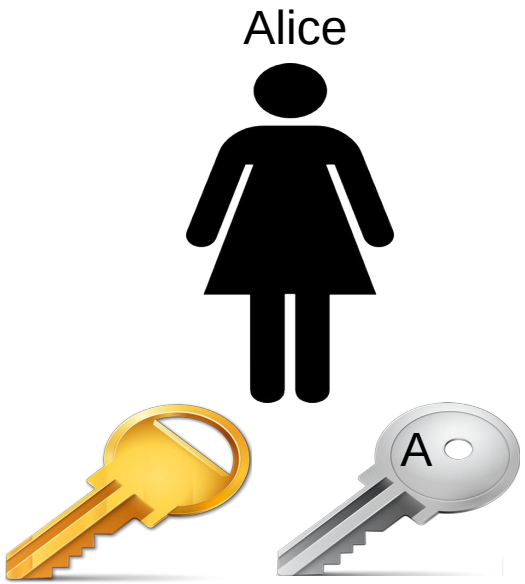


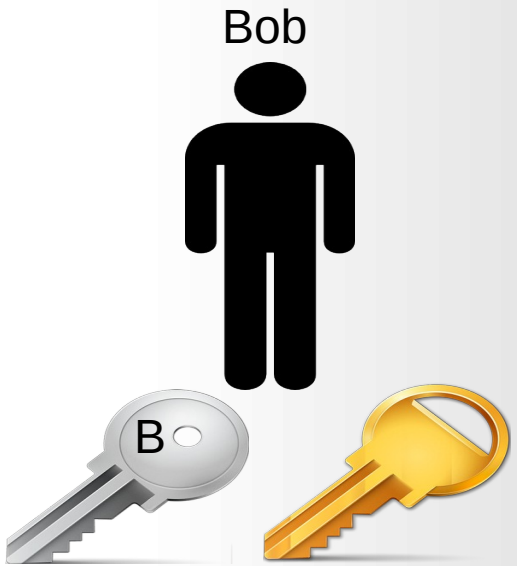
Crittografia Asimmetrica

Crittografia Asimmetrica



Crittografia Asimmetrica





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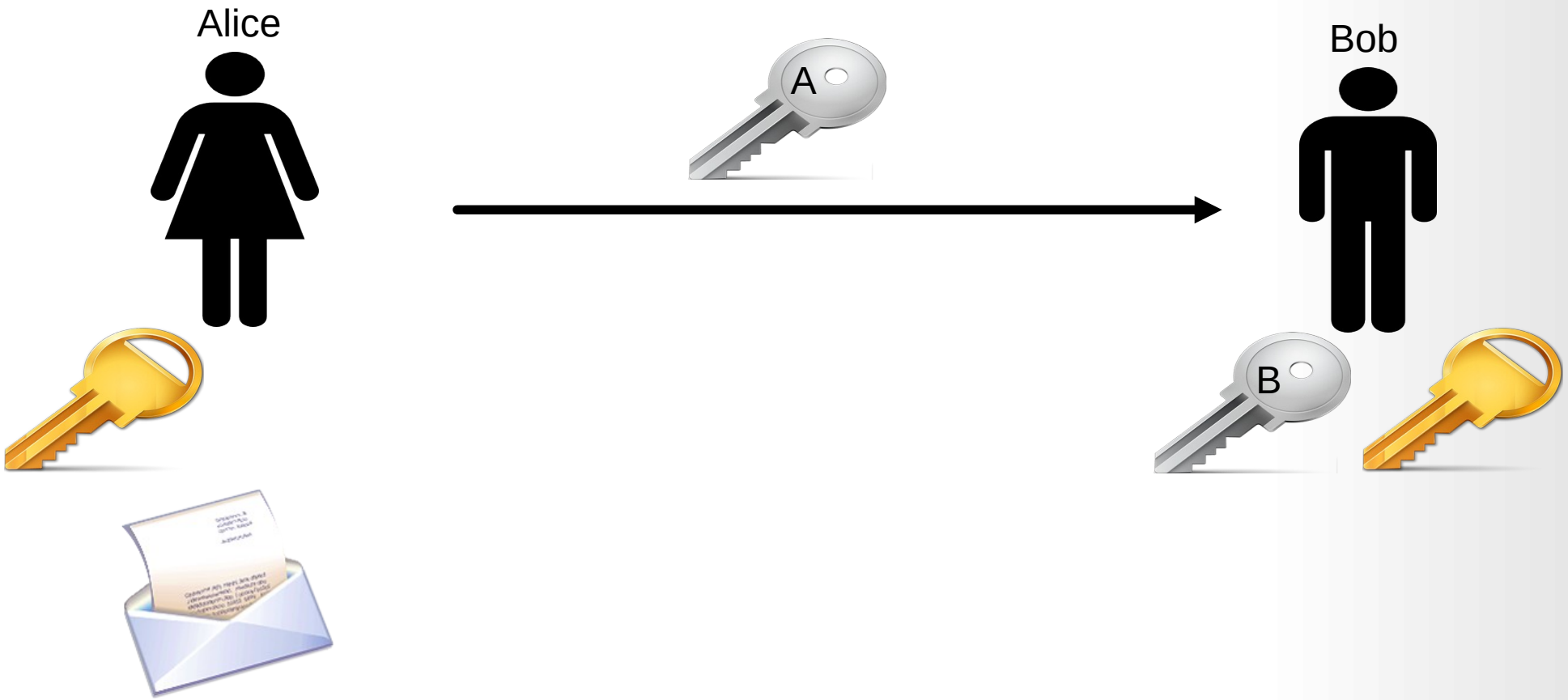

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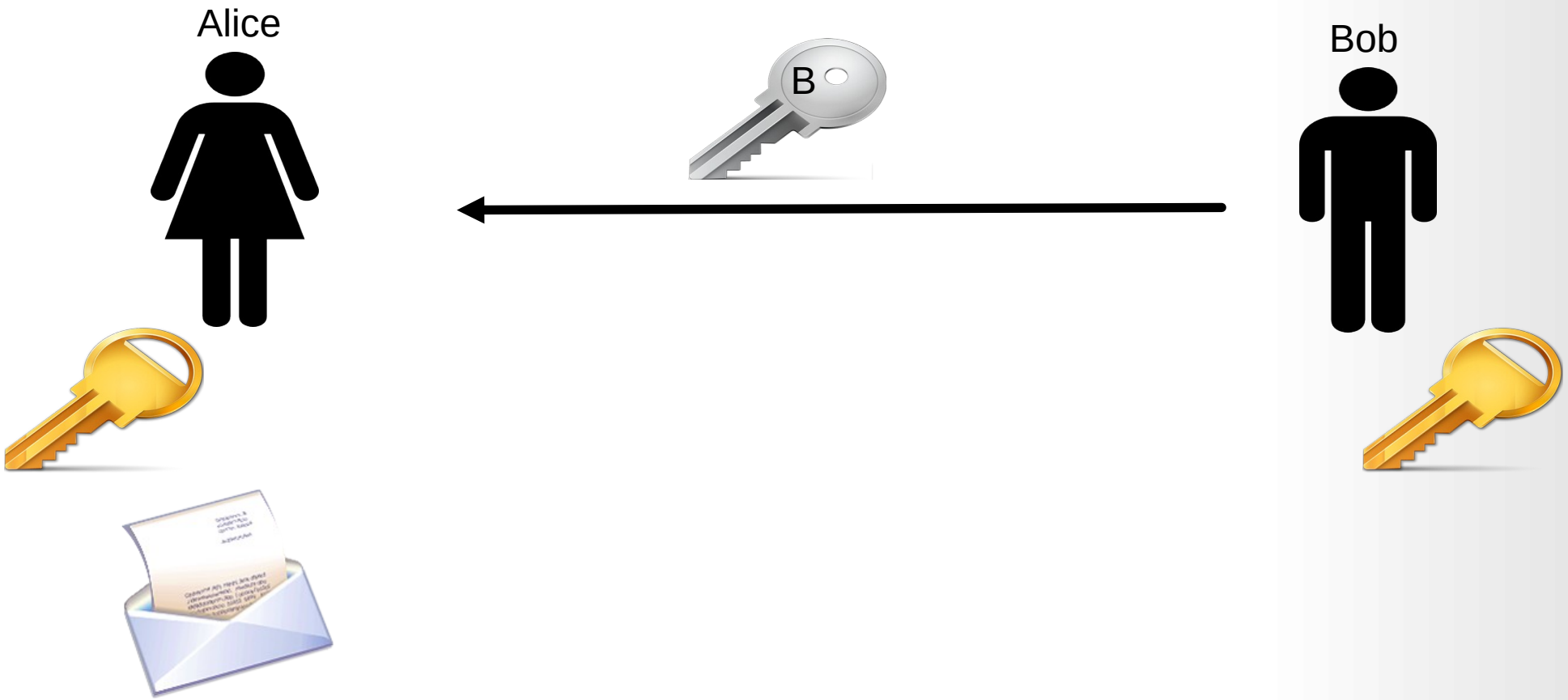
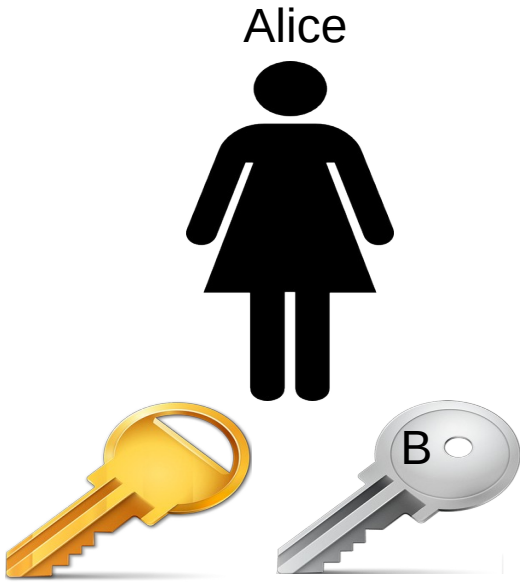
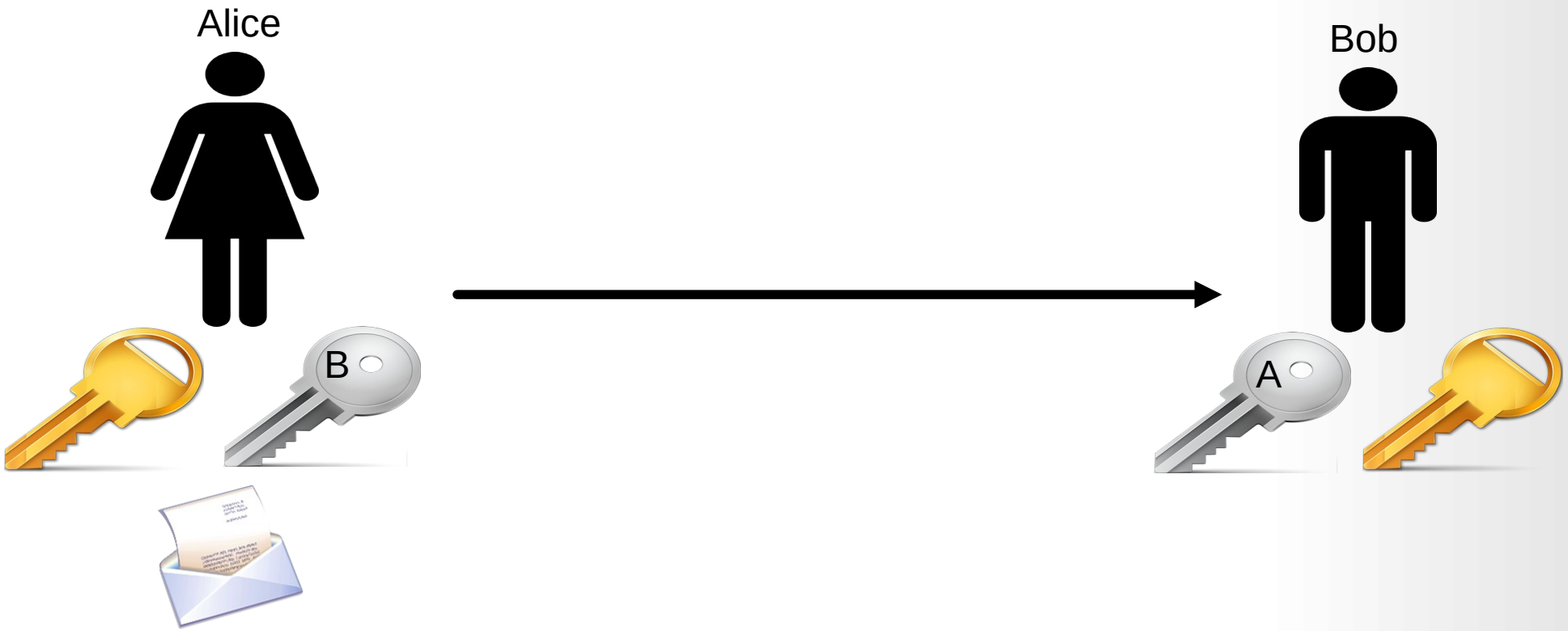


Crittografia Asimmetrica



Crittografia Asimmetrica



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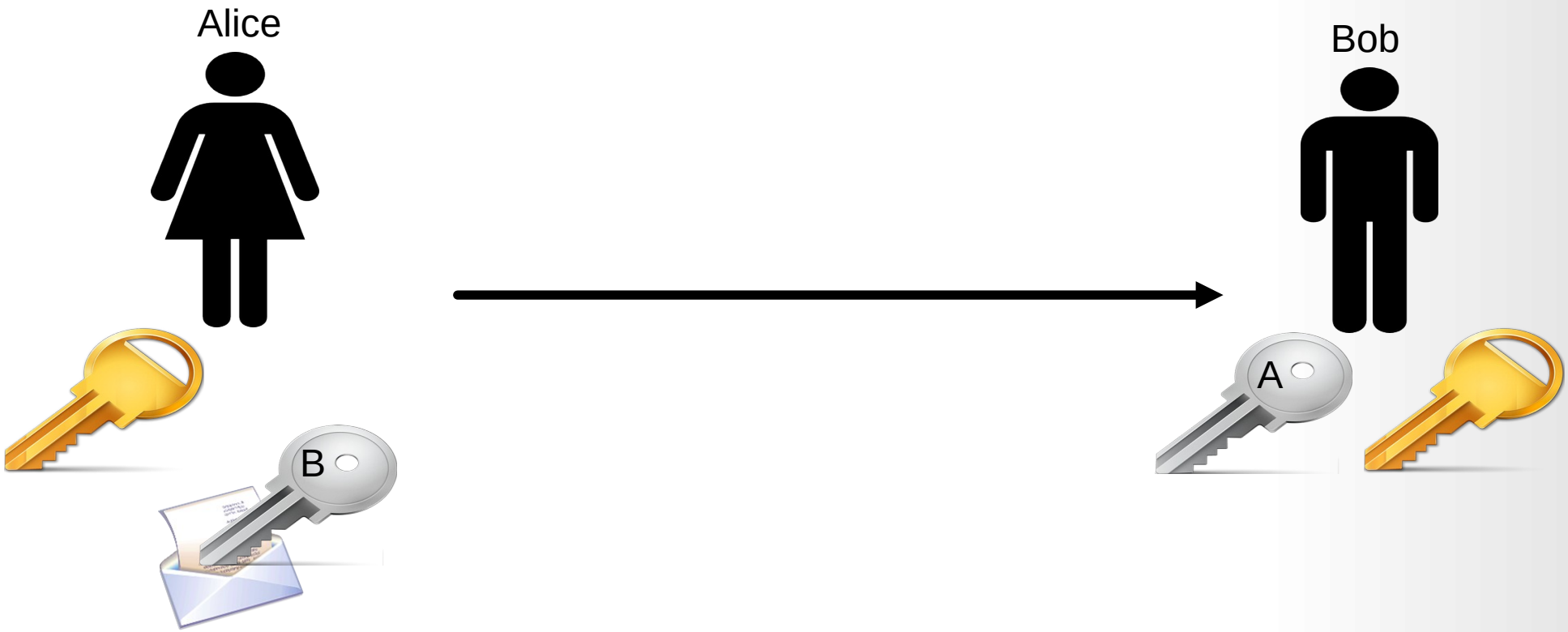
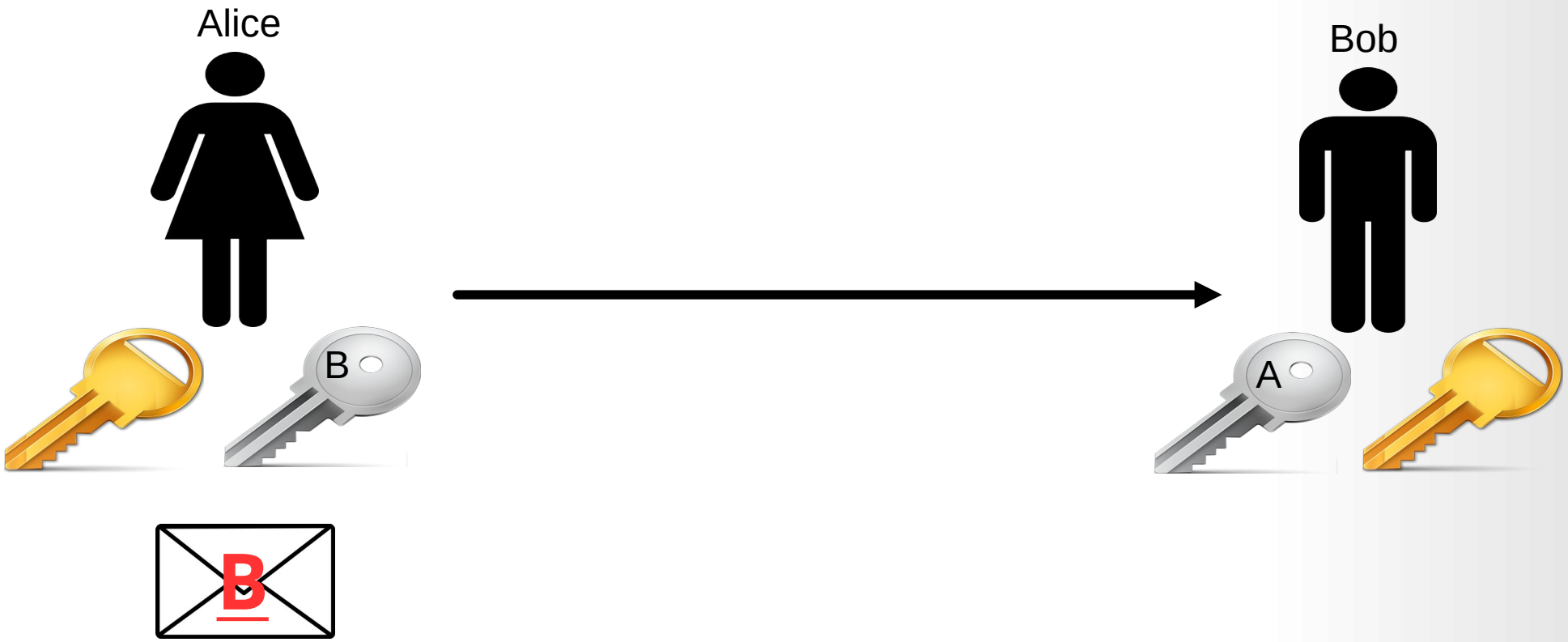


Crittografia Asimmetrica



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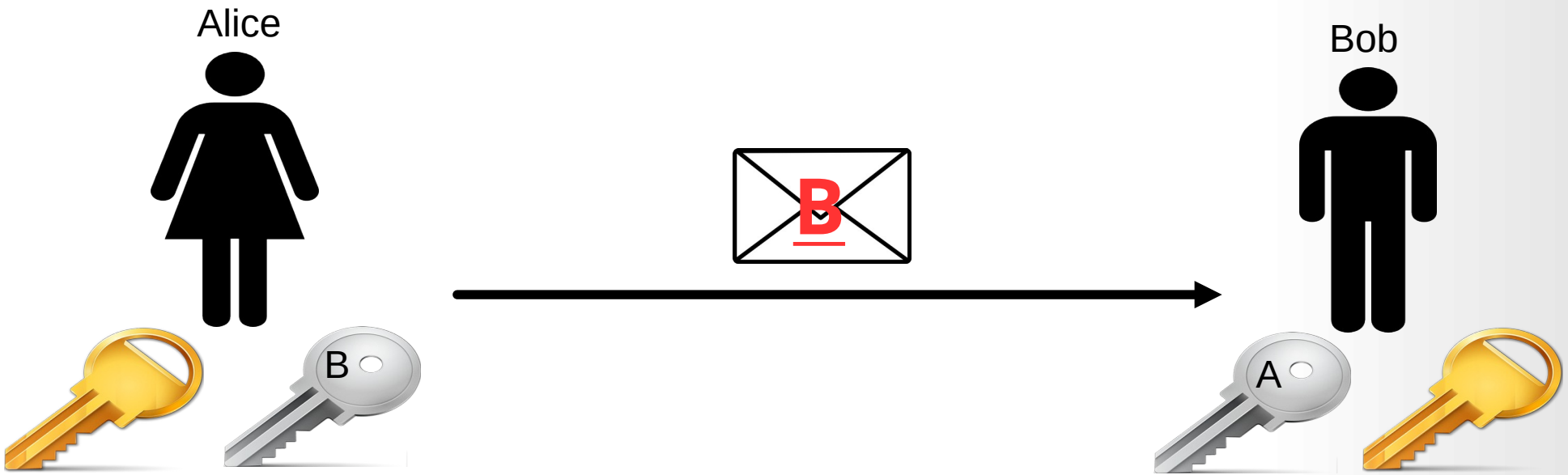
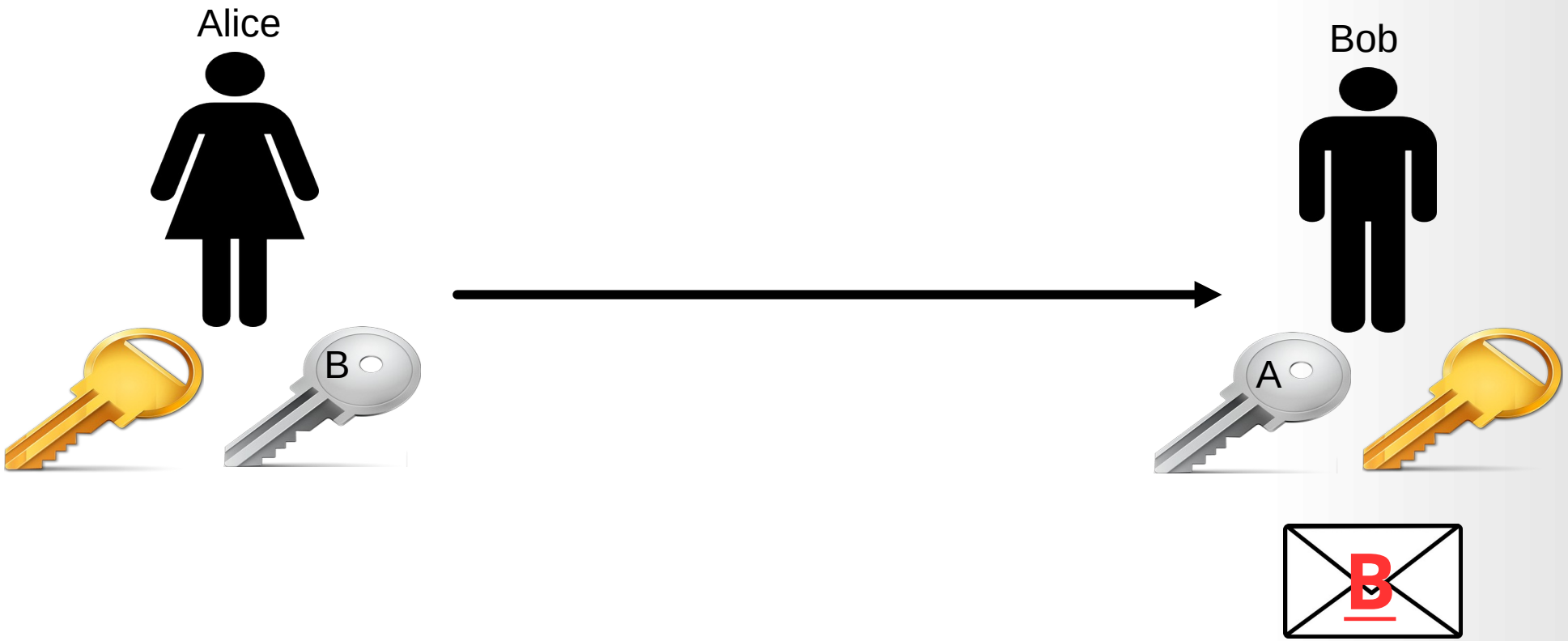
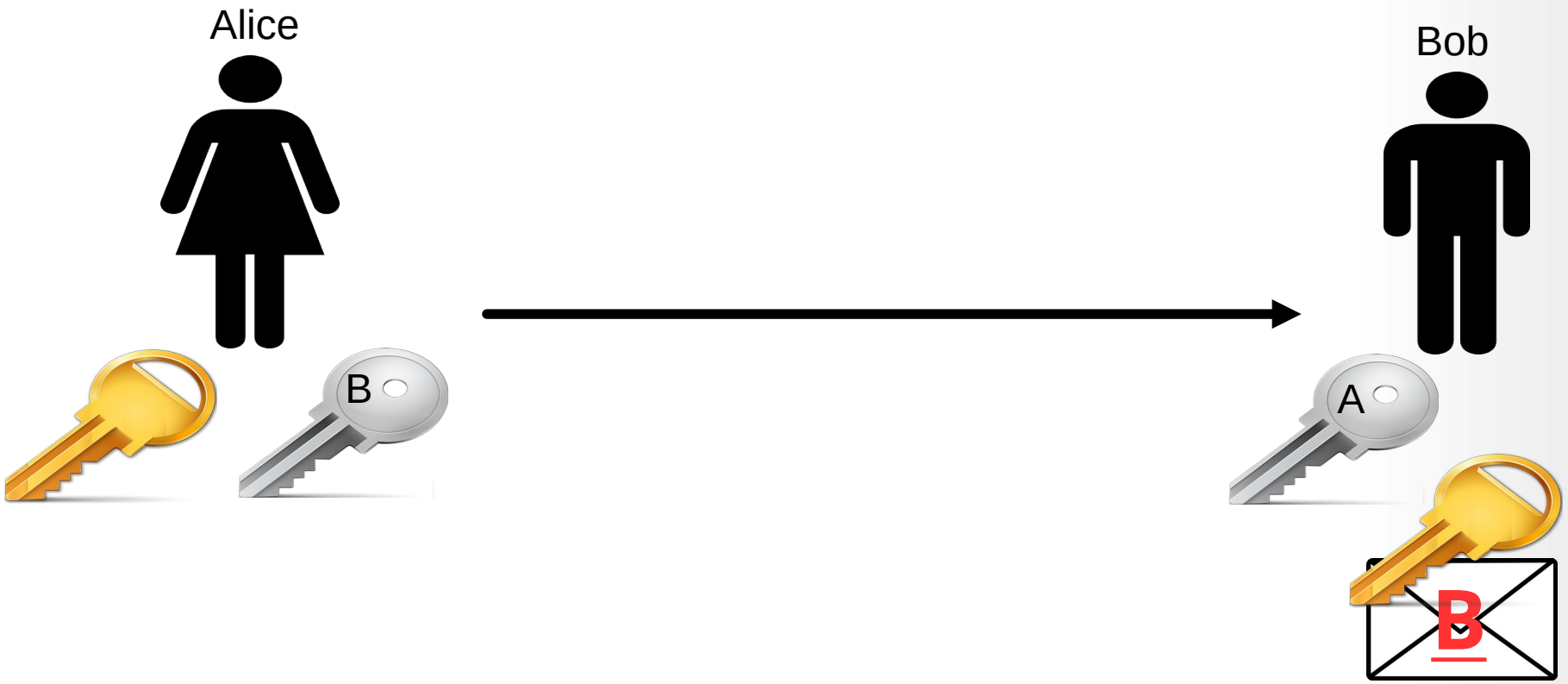


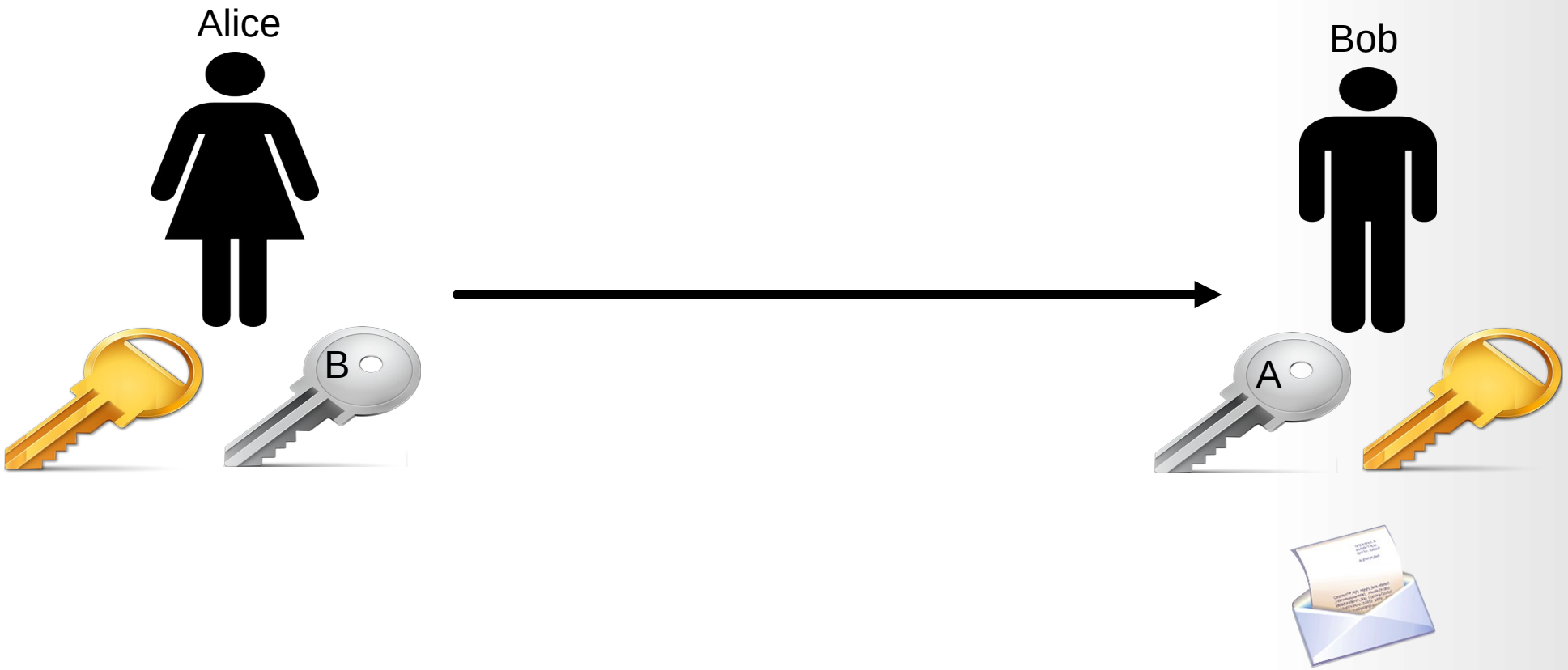
Crittografia Asimmetrica



Crittografia Asimmetrica



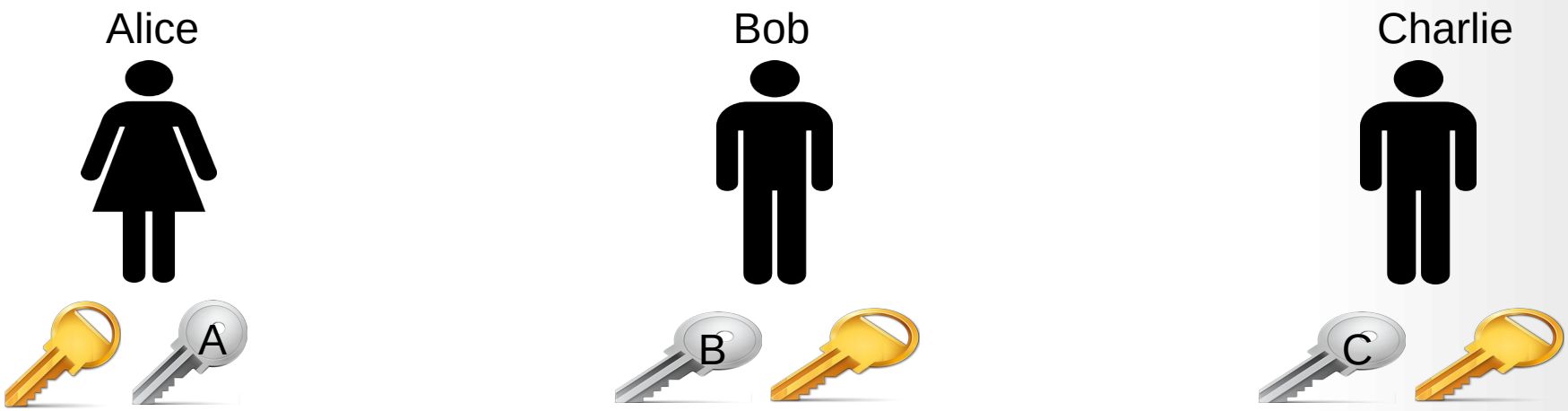
Crittografia Asimmetrica



Concetti Di Base

- ~~Proxy~~
- ~~Crittografia Asimmetrica~~
- Crittografia Asimmetrica su più livelli

Crittografia Asimmetrica++



Crittografia Asimmetrica++

Alice

Bob

Charlie

Crittografia Asimmetrica++

Alice

Bob

Charlie

Crittografia Asimmetrica++

Alice

Bob

Charlie

Crittografia Asimmetrica++

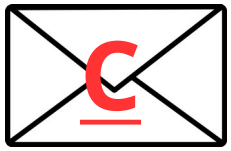
Alice

Bob

Charlie

Crittografia Asimmetrica++

Alice



Bob

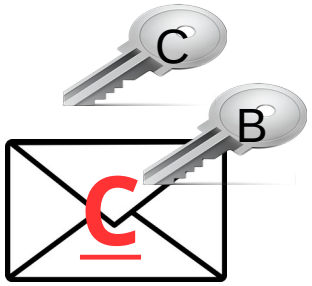
Charlie

Crittografia Asimmetrica++

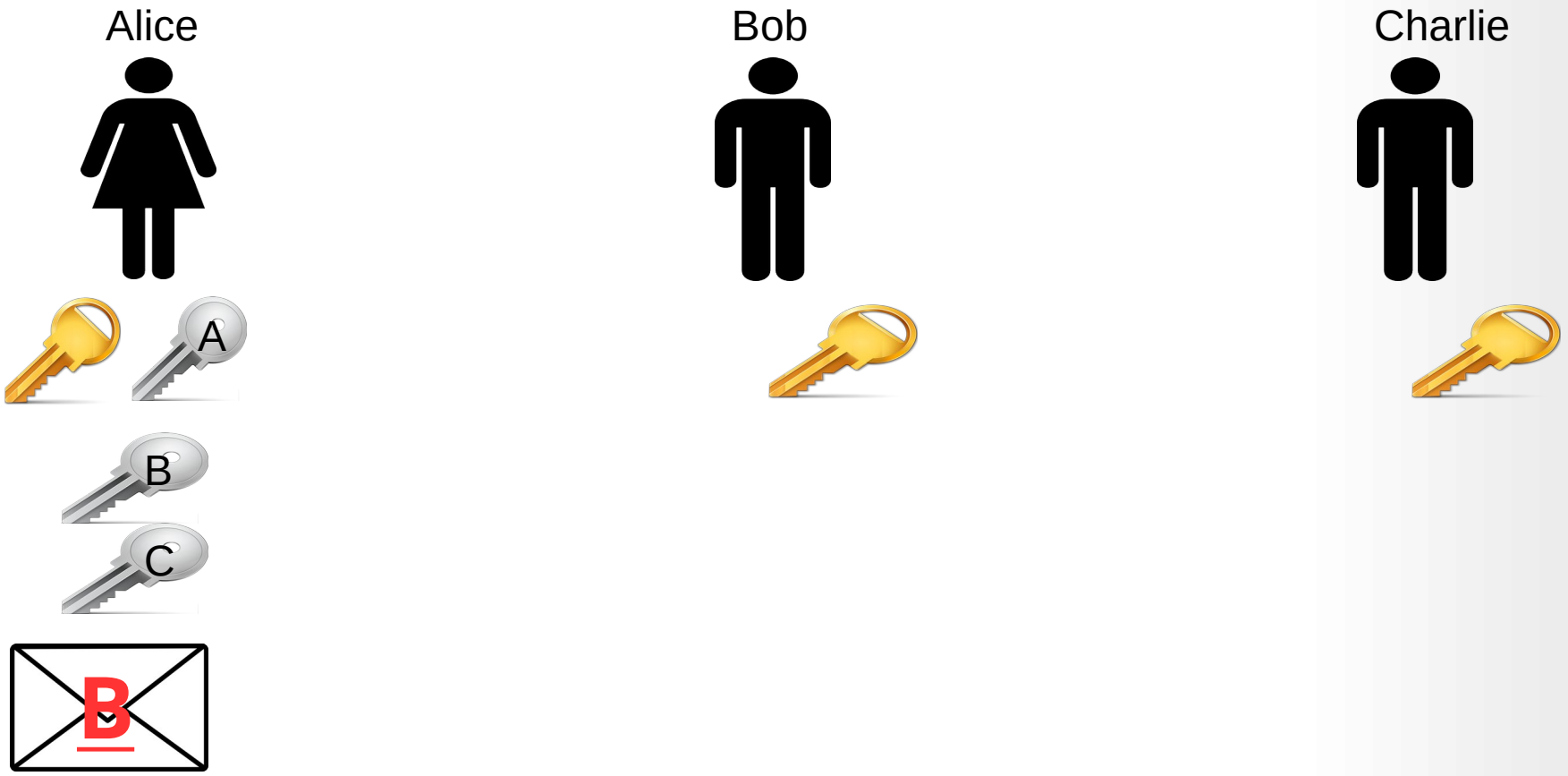
Alice

Bob

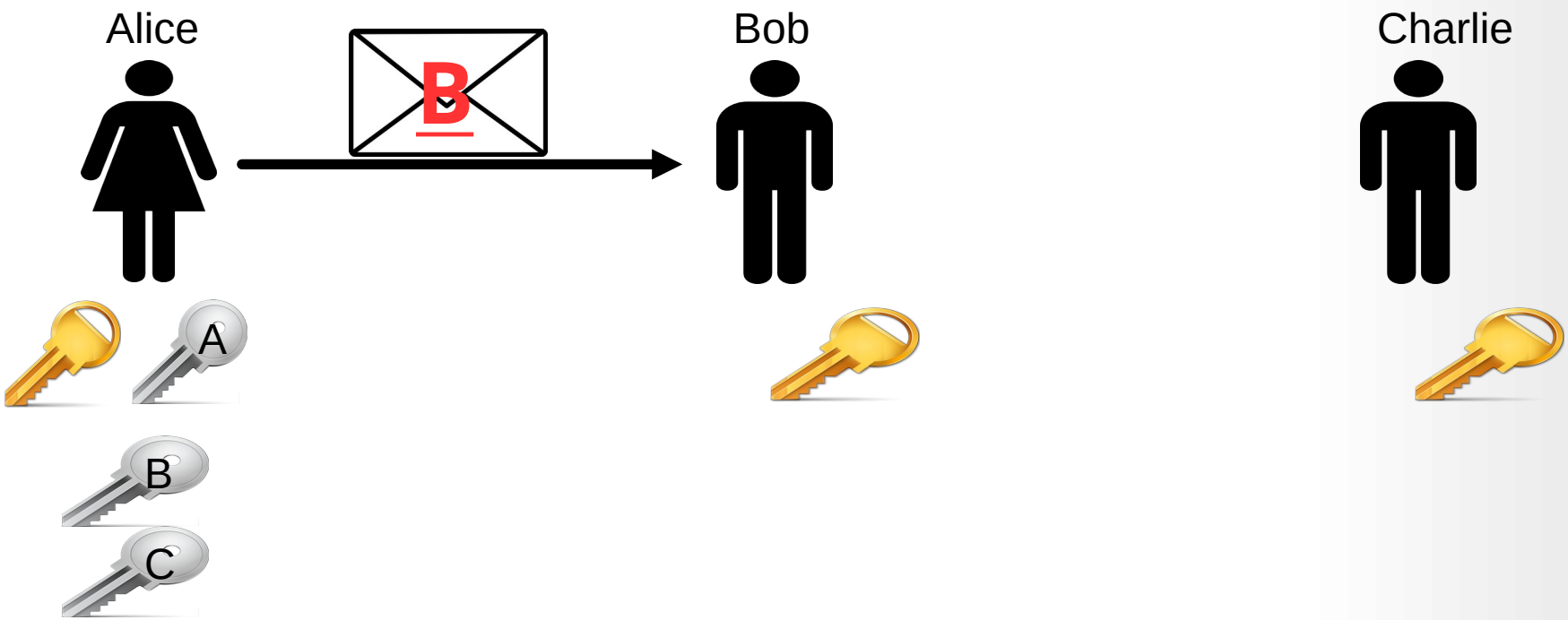
Charlie



Crittografia Asimmetrica++



Crittografia Asimmetrica++



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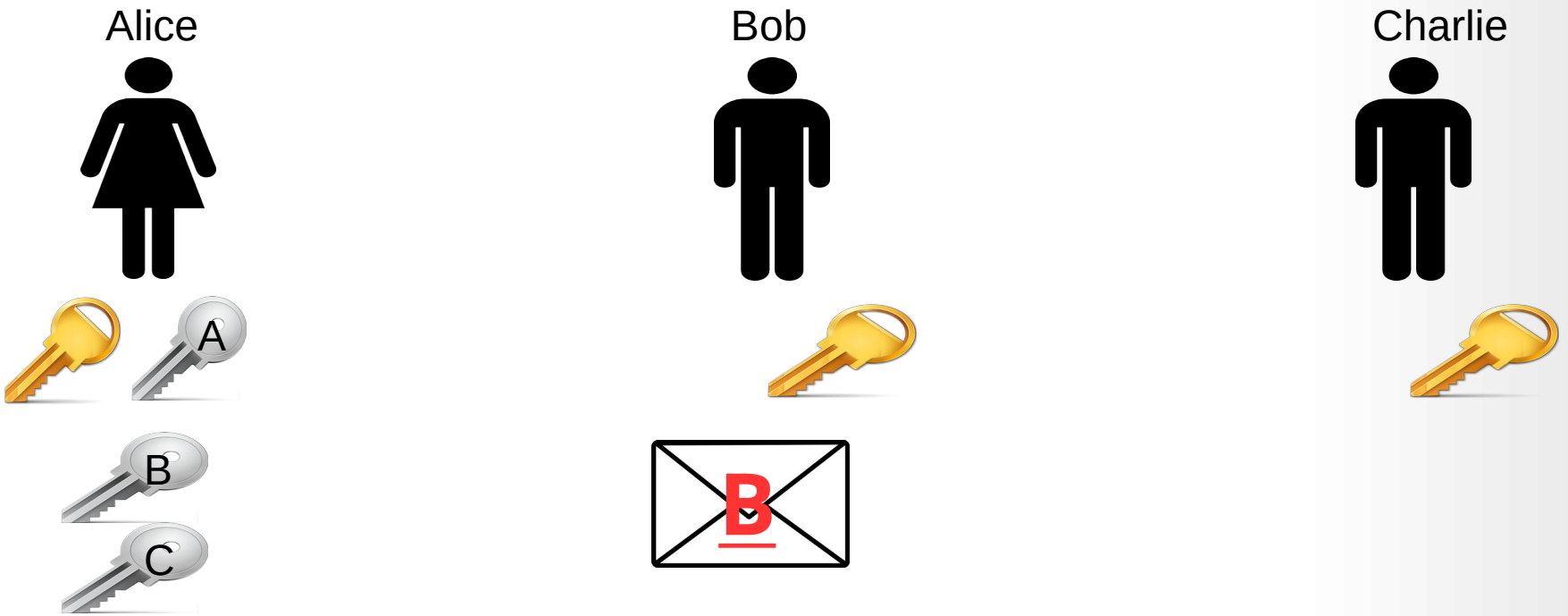
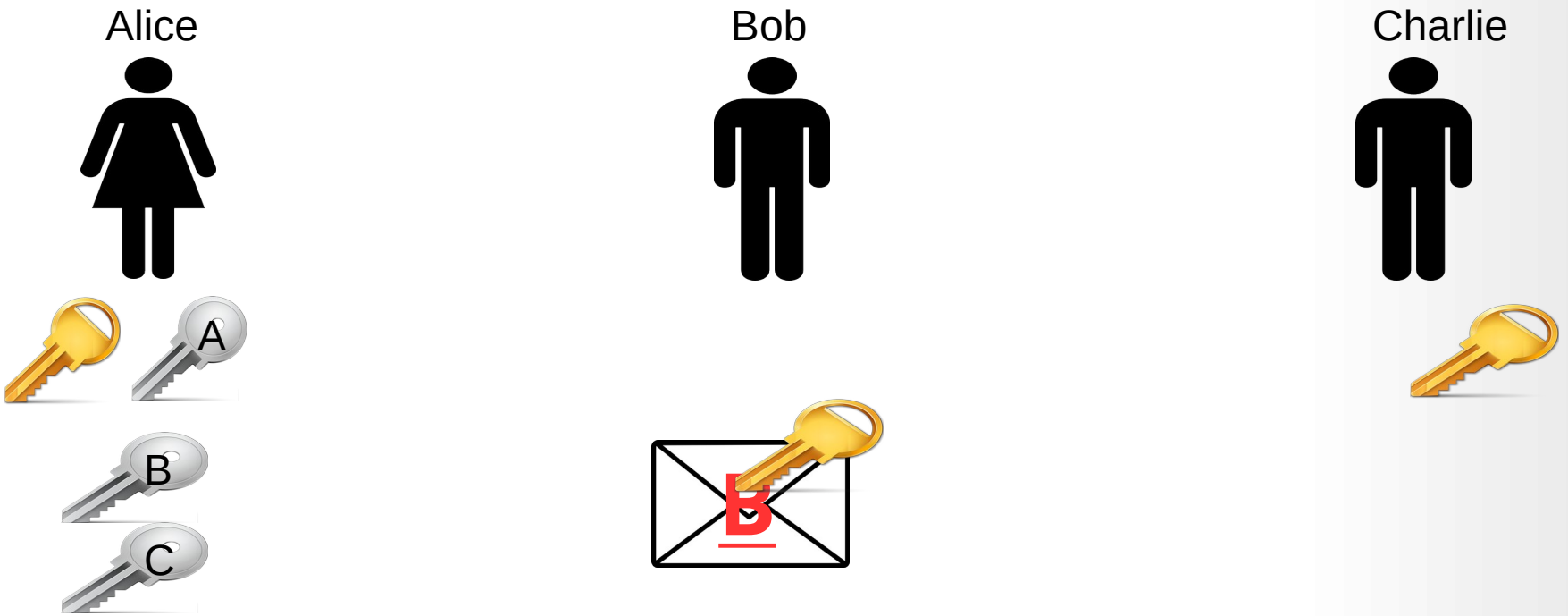


Crittografia Asimmetrica++



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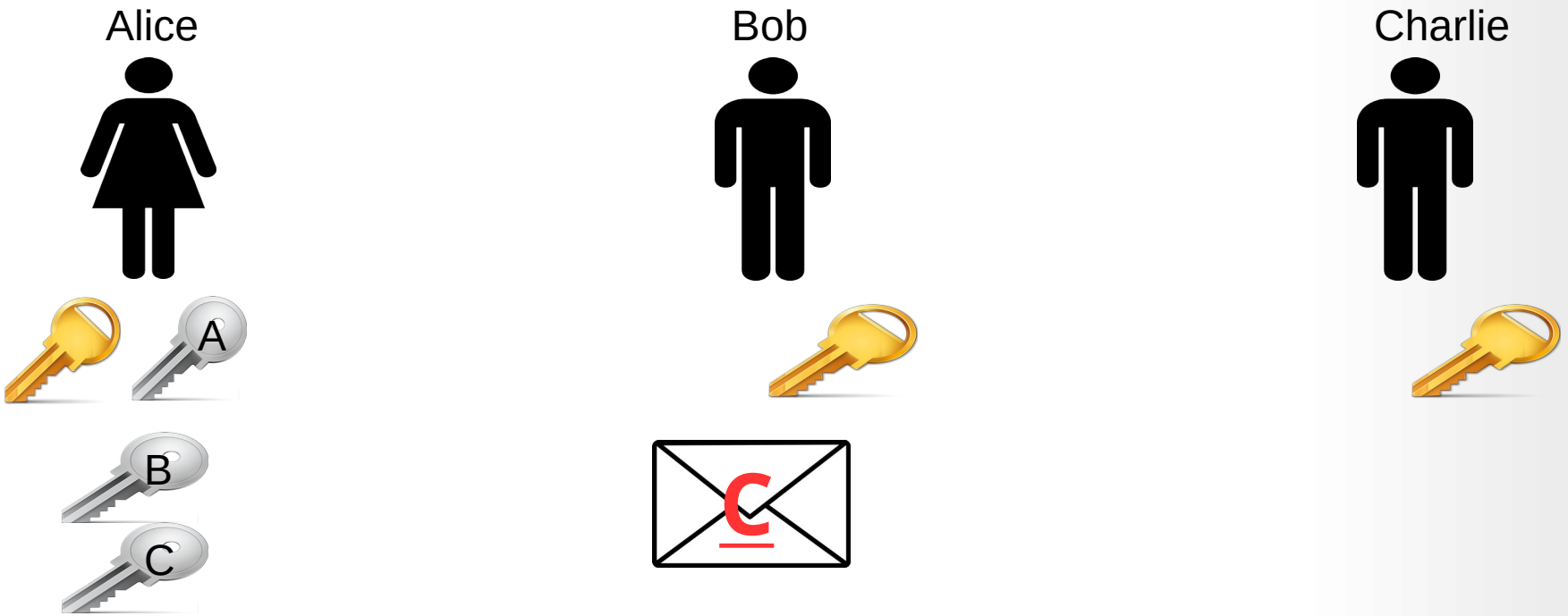

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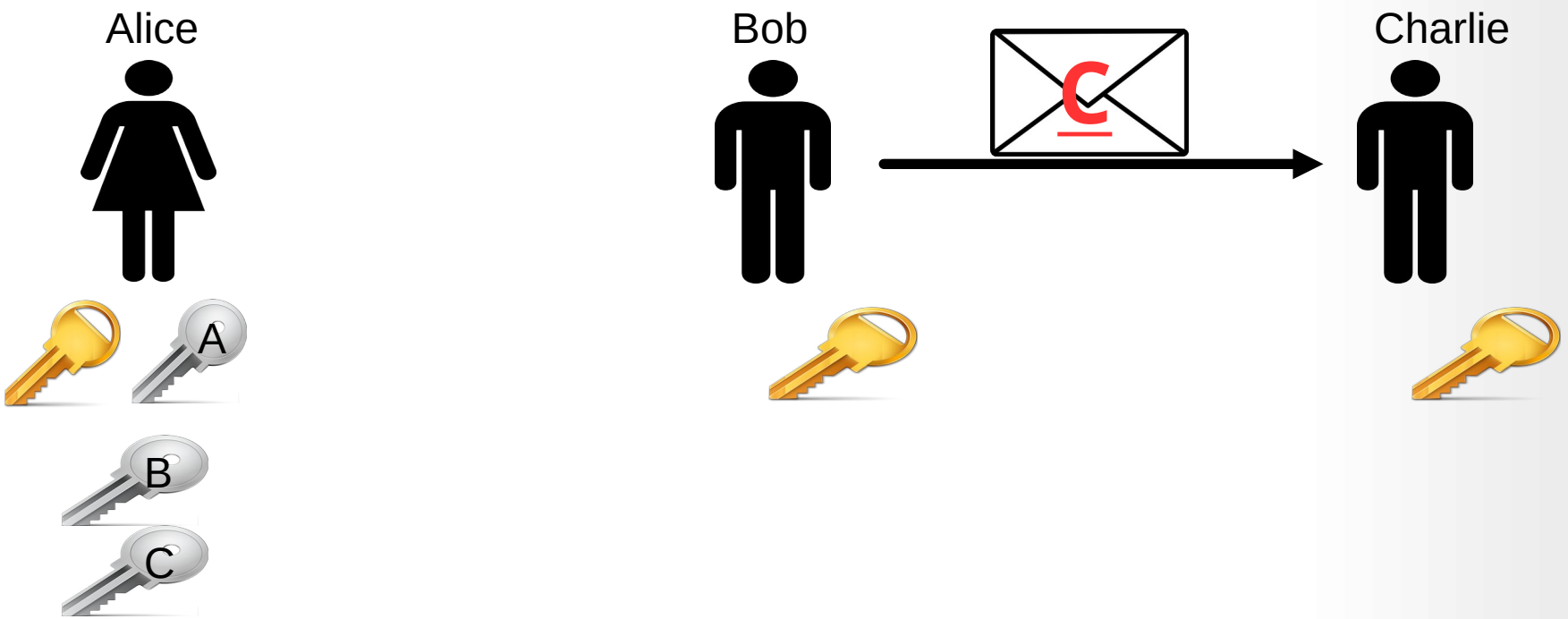
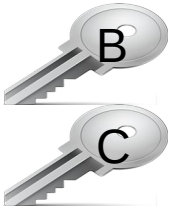


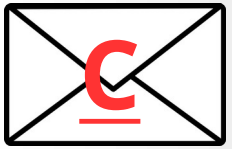
Crittografia Asimmetrica++

Alice

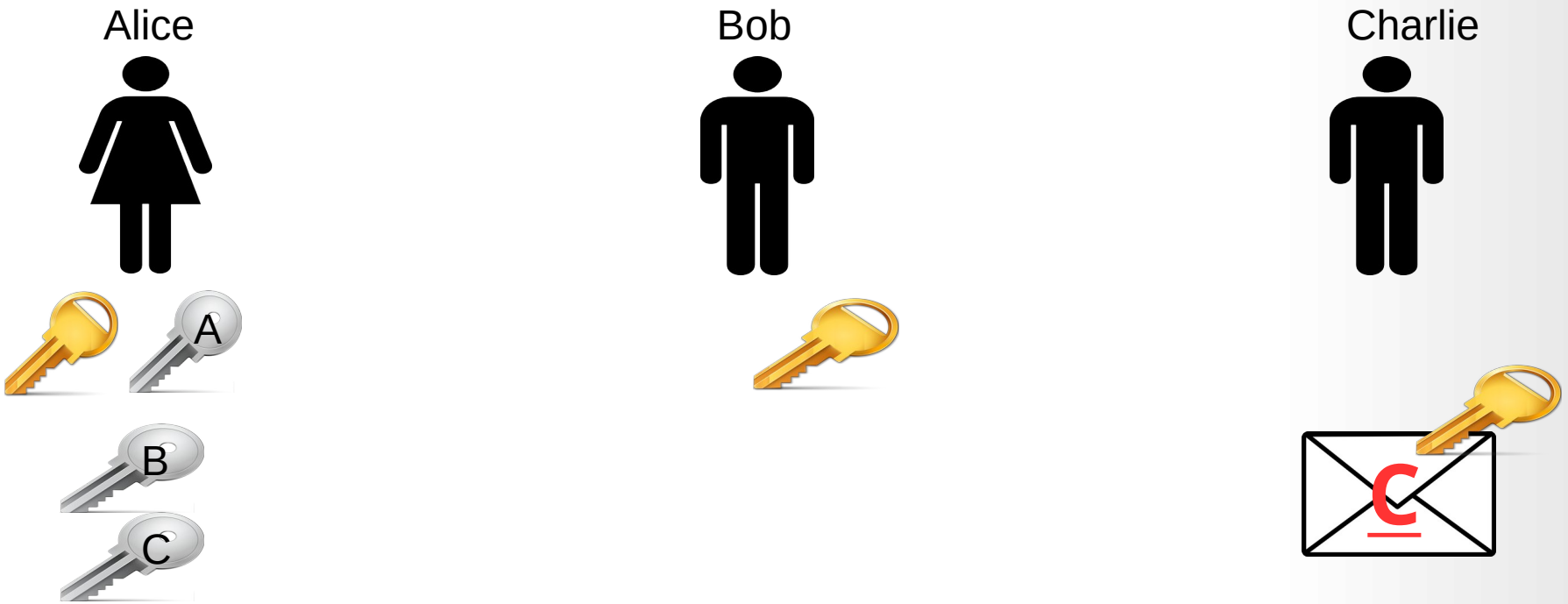


Bob

Charlie

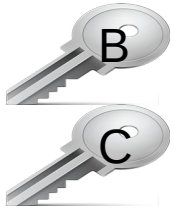


Crittografia Asimmetrica++



Crittografia Asimmetrica++

Alice



Bob

Charlie

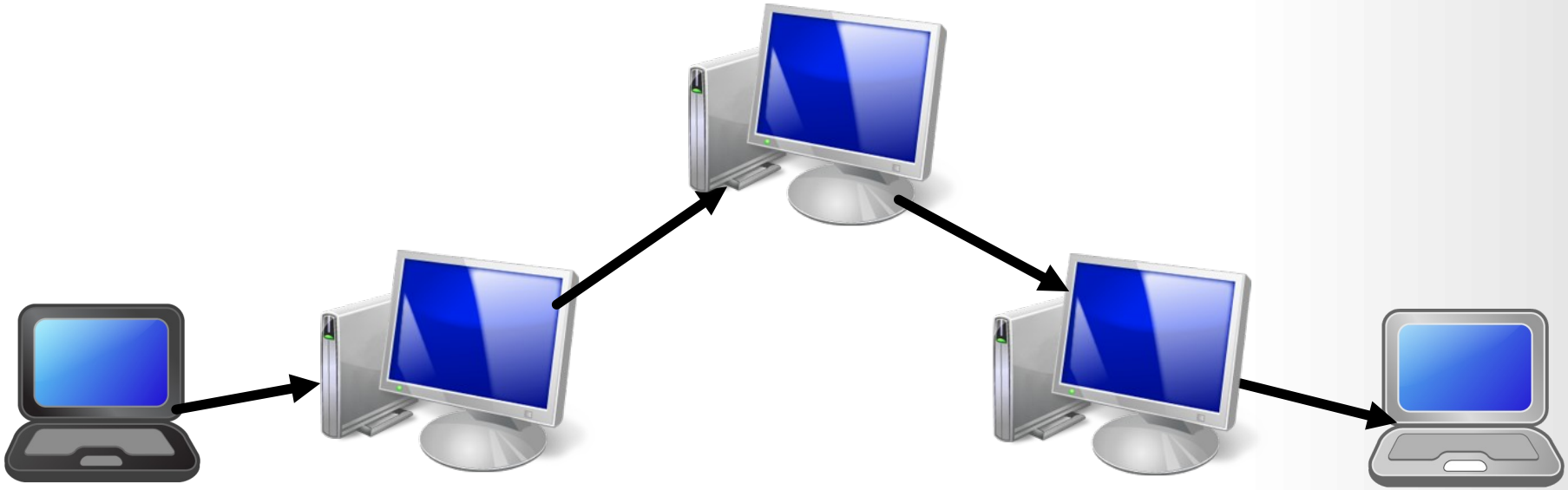
Concetti Di Base

- ~~Proxy~~
- ~~Crittografia Asimmetrica~~
- ~~Crittografia Asimmetrica su più livelli~~

Tor

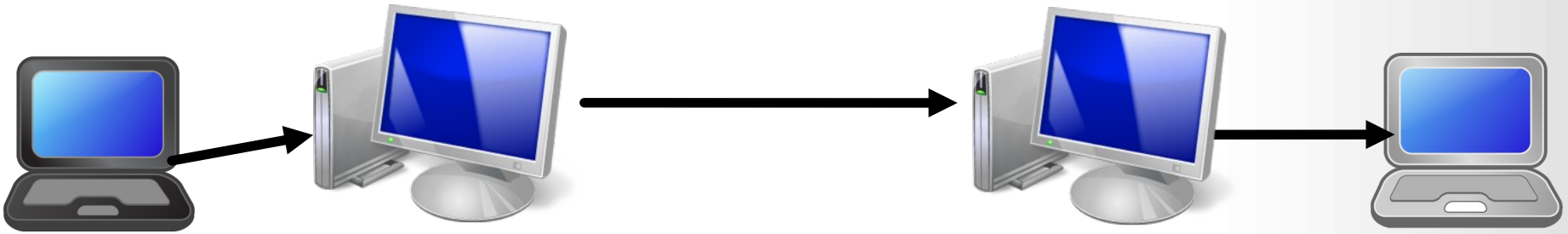
- Il circuito Tor
- Instaurazione di un Hidden Service
- Indirizzi .onion V3
- Connessione ad un Hidden Service
- Bridge
- Pericoli

Circuito Tor



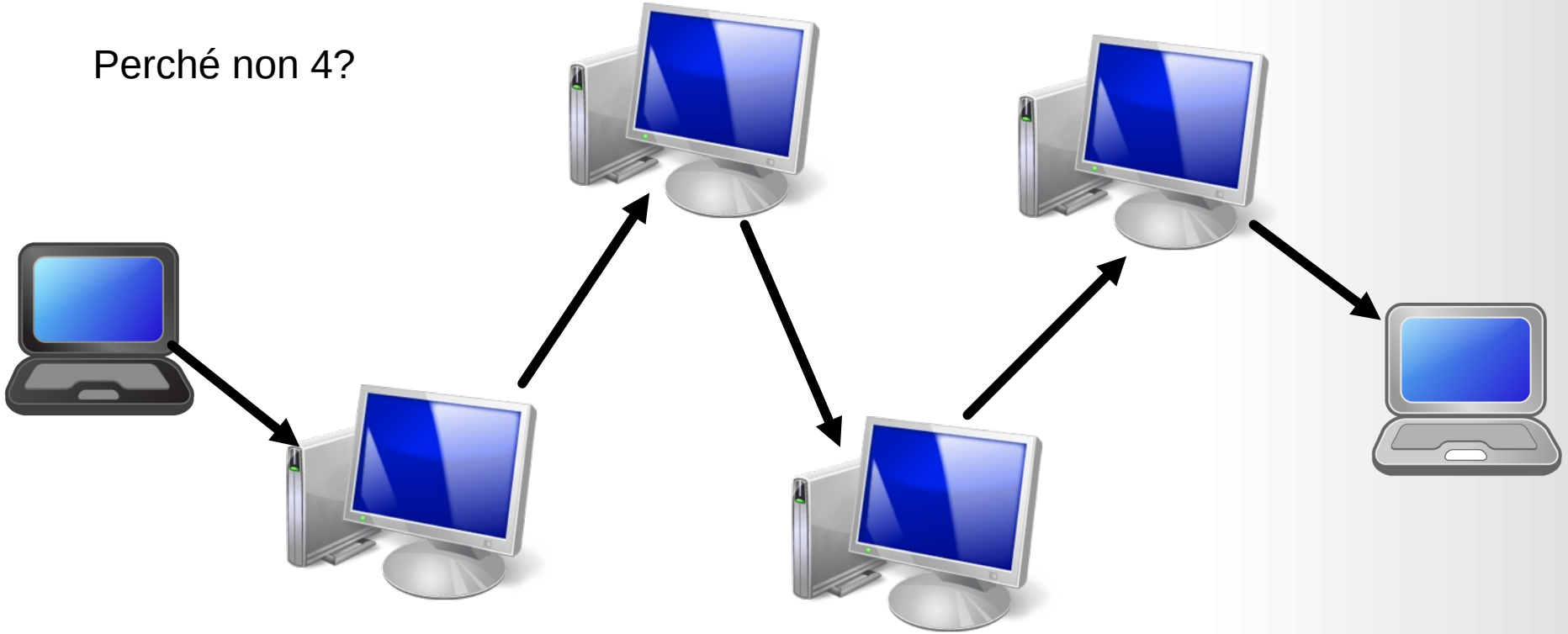
Circuito Tor

Perché non 2?

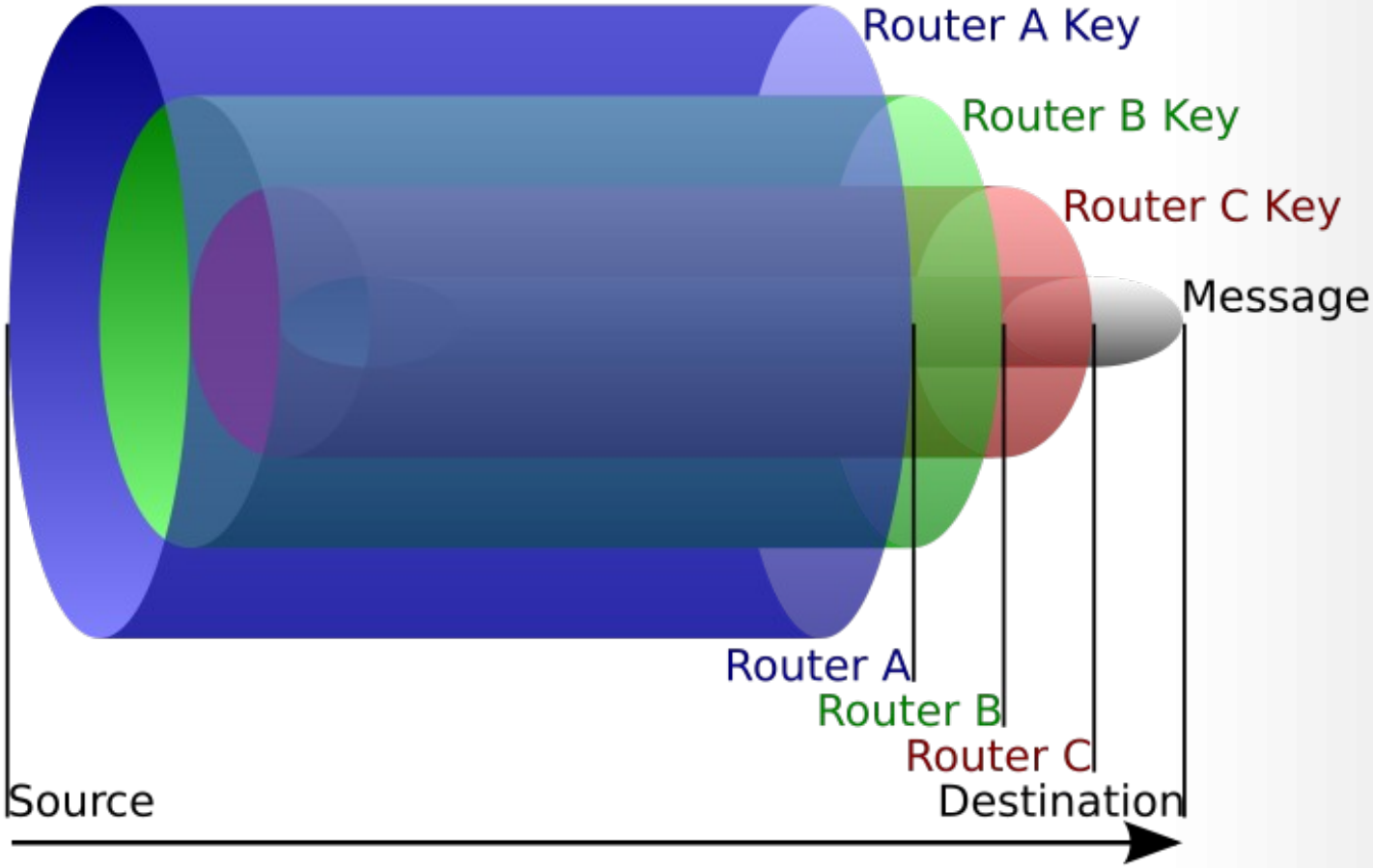


Circuito Tor

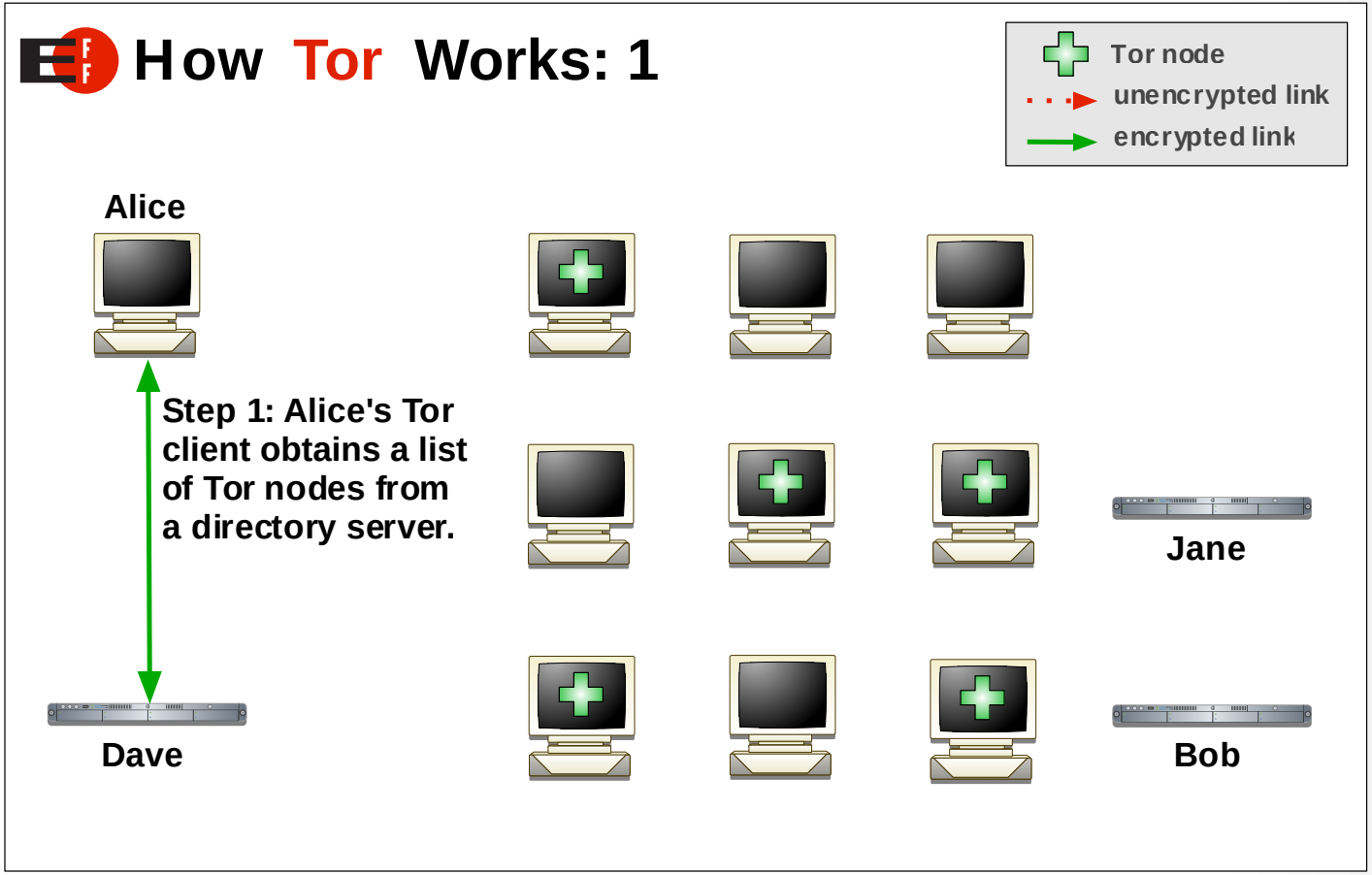
Perché non 4?



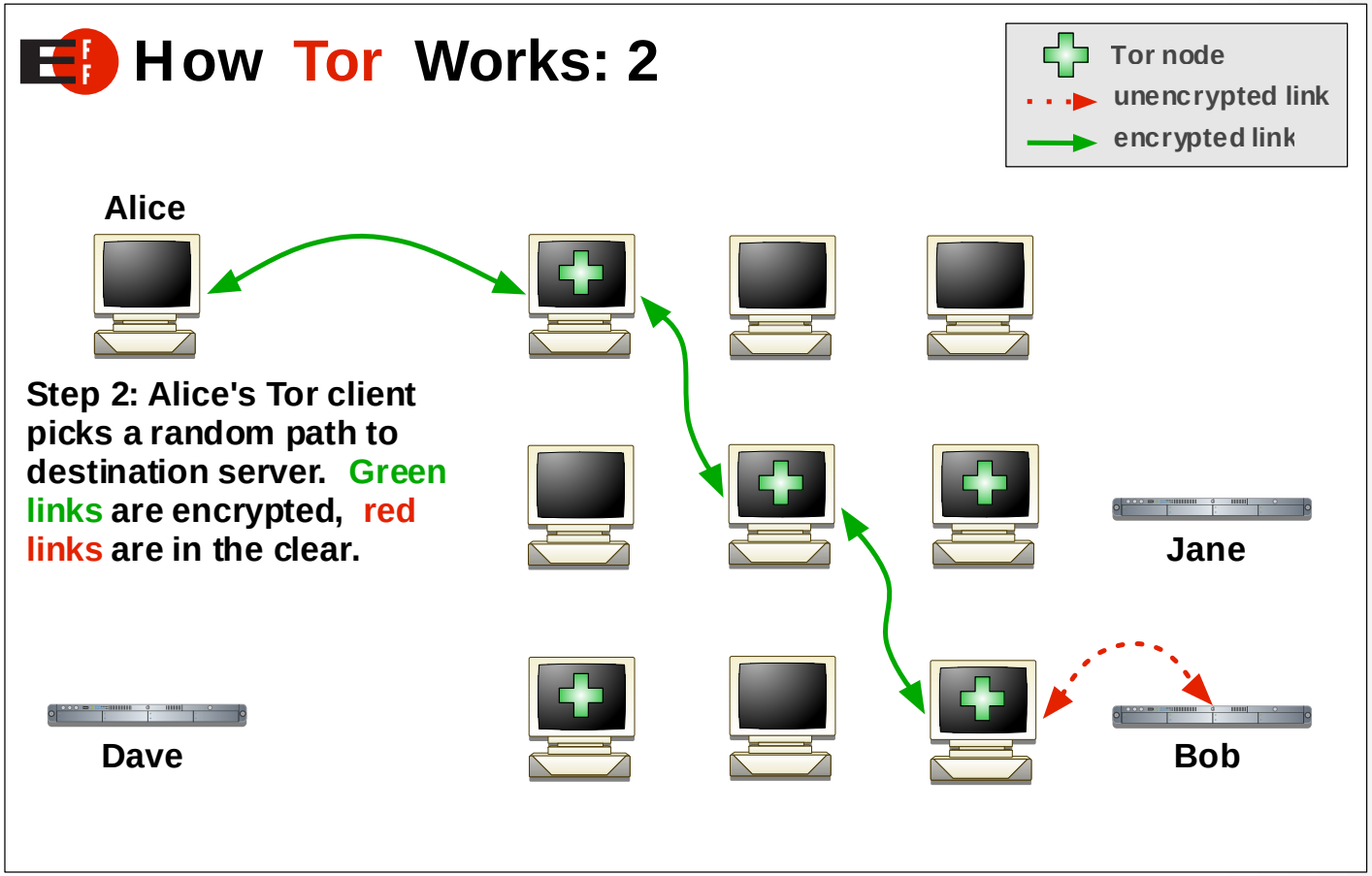
Circuito Tor



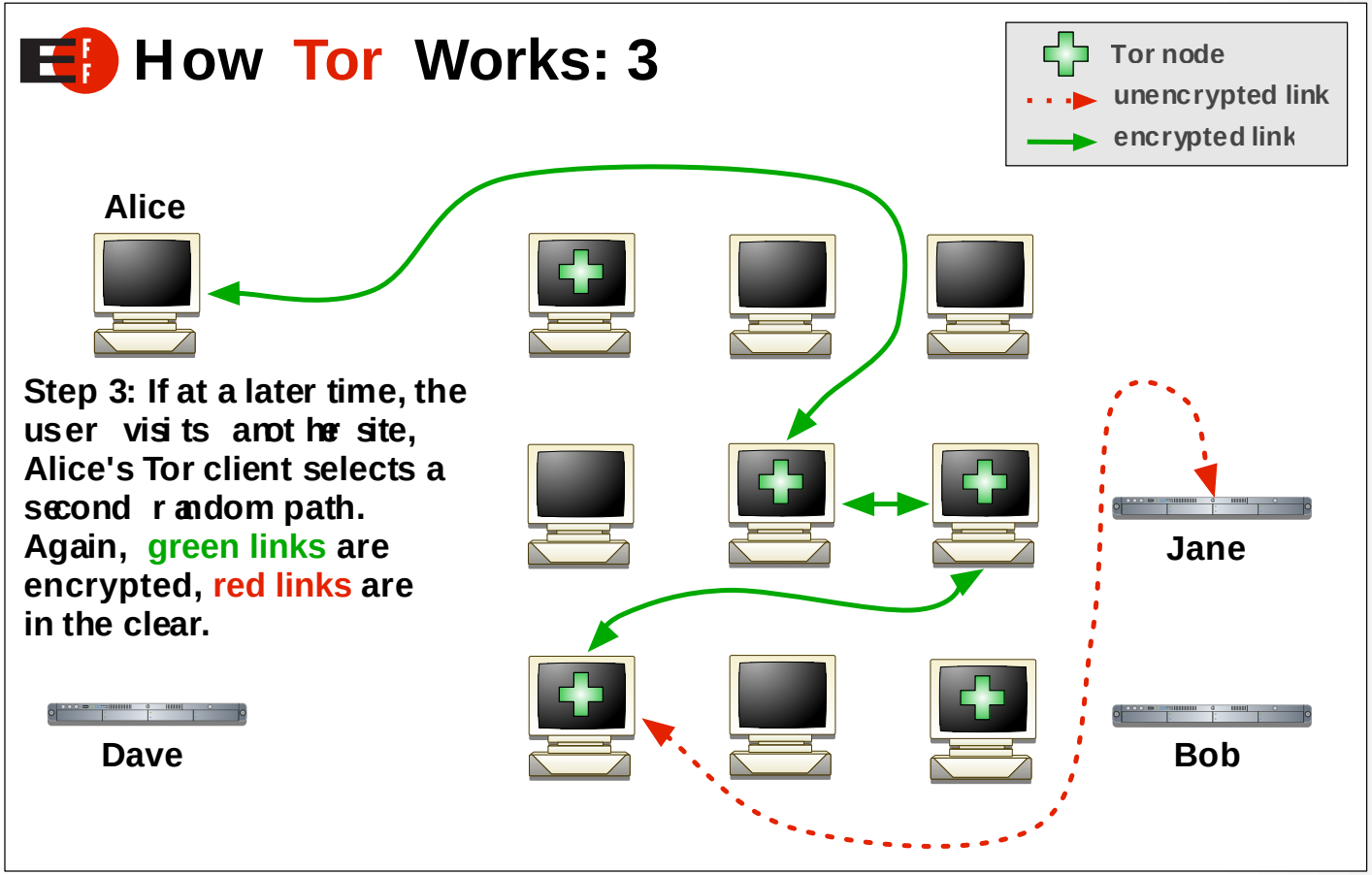
Circuito Tor



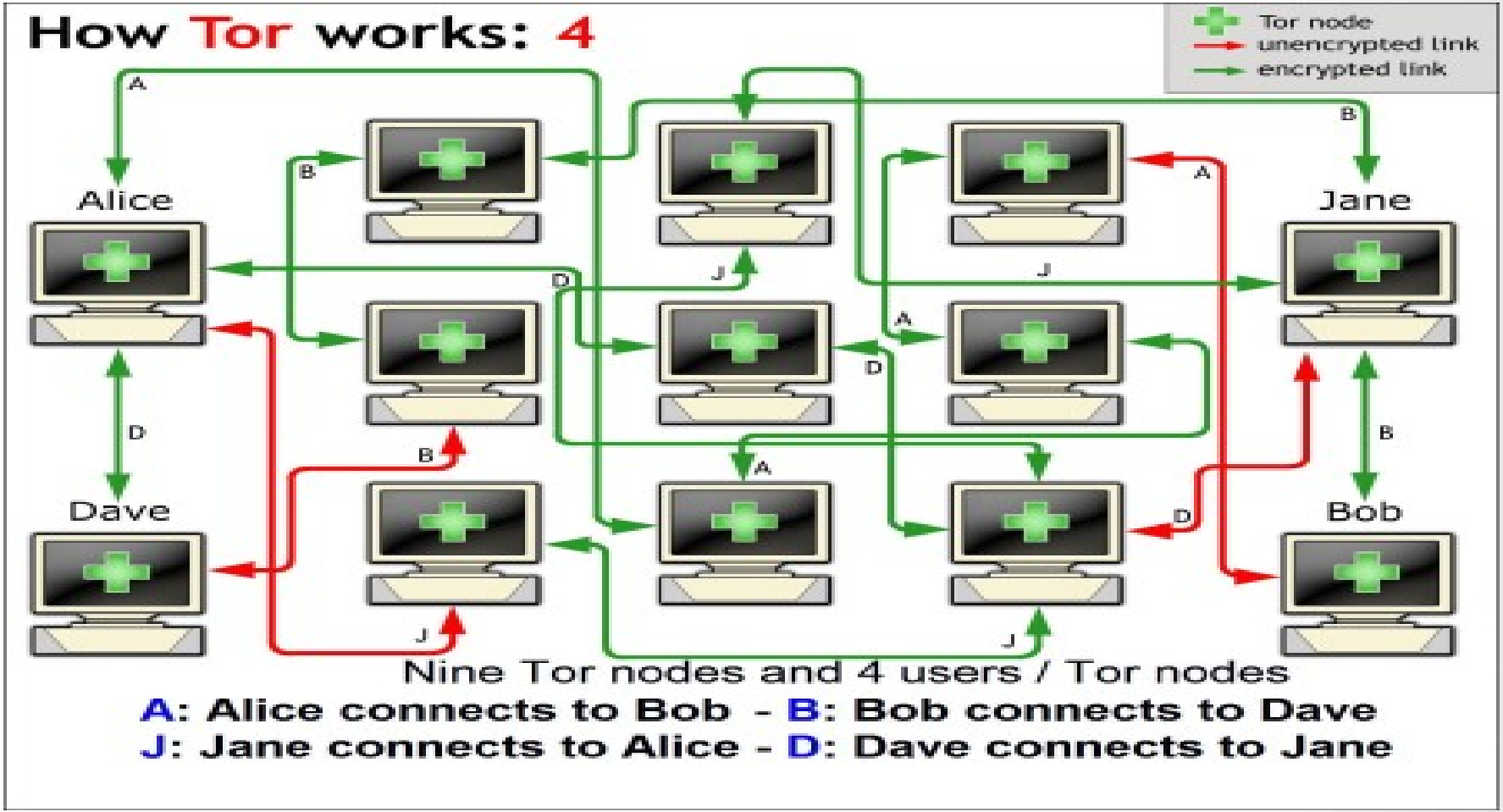
Circuito Tor



Circuito Tor



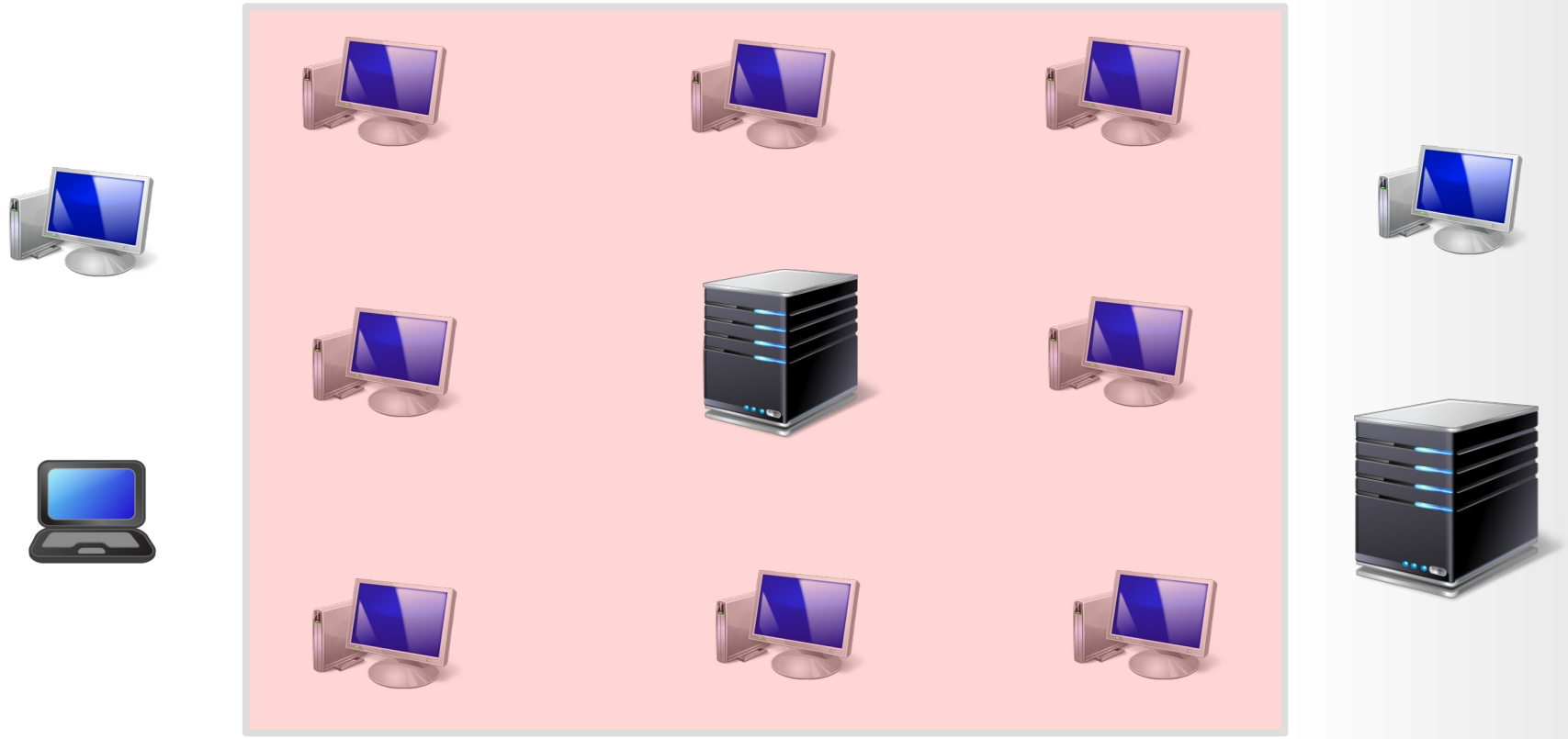
Circuito Tor



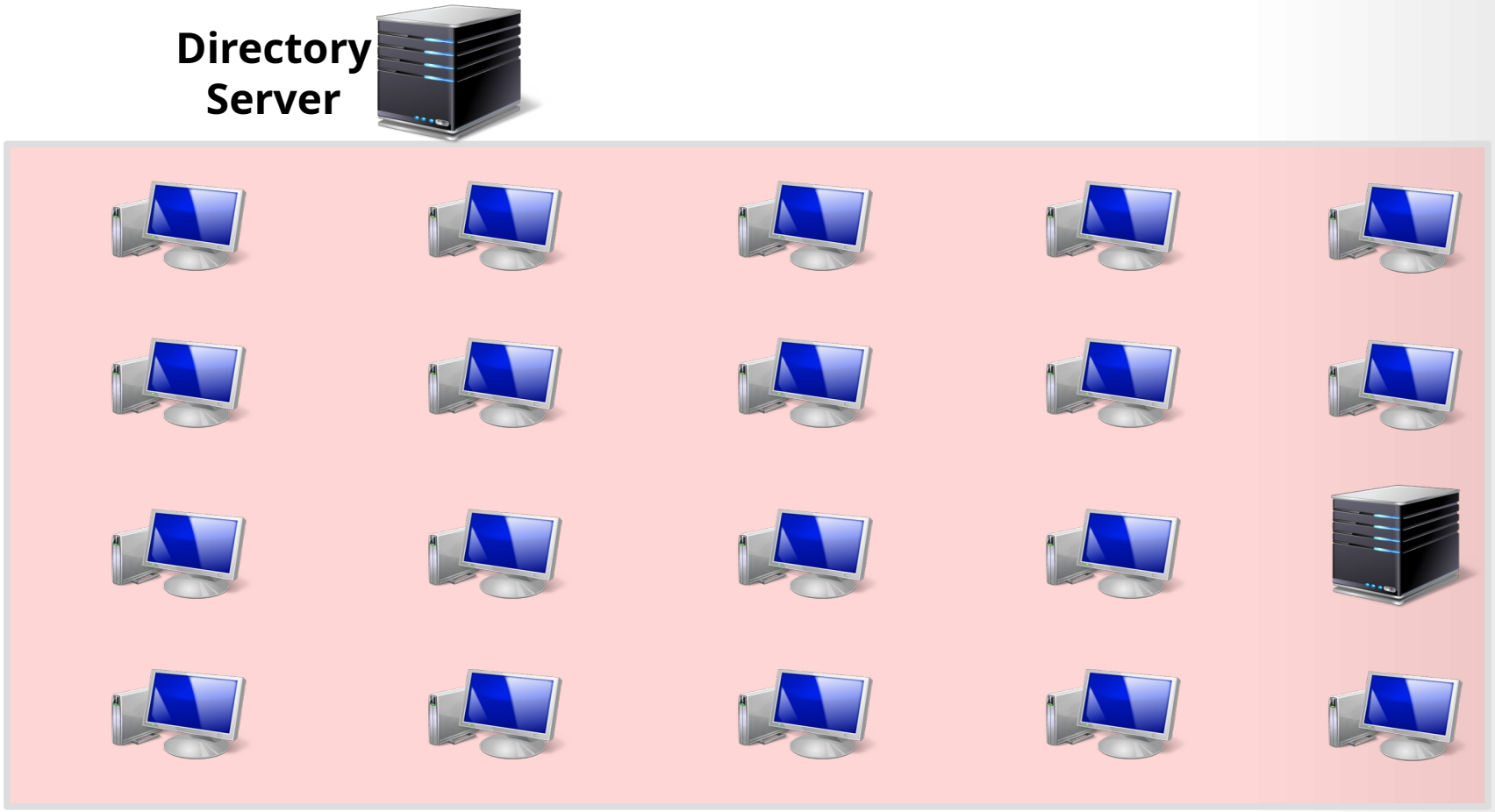
Tor

- ~~Il circuito Tor~~
- Instaurazione di un Hidden Service
- Indirizzi .onion V3
- Connessione ad un Hidden Service
- Bridge
- Pericoli

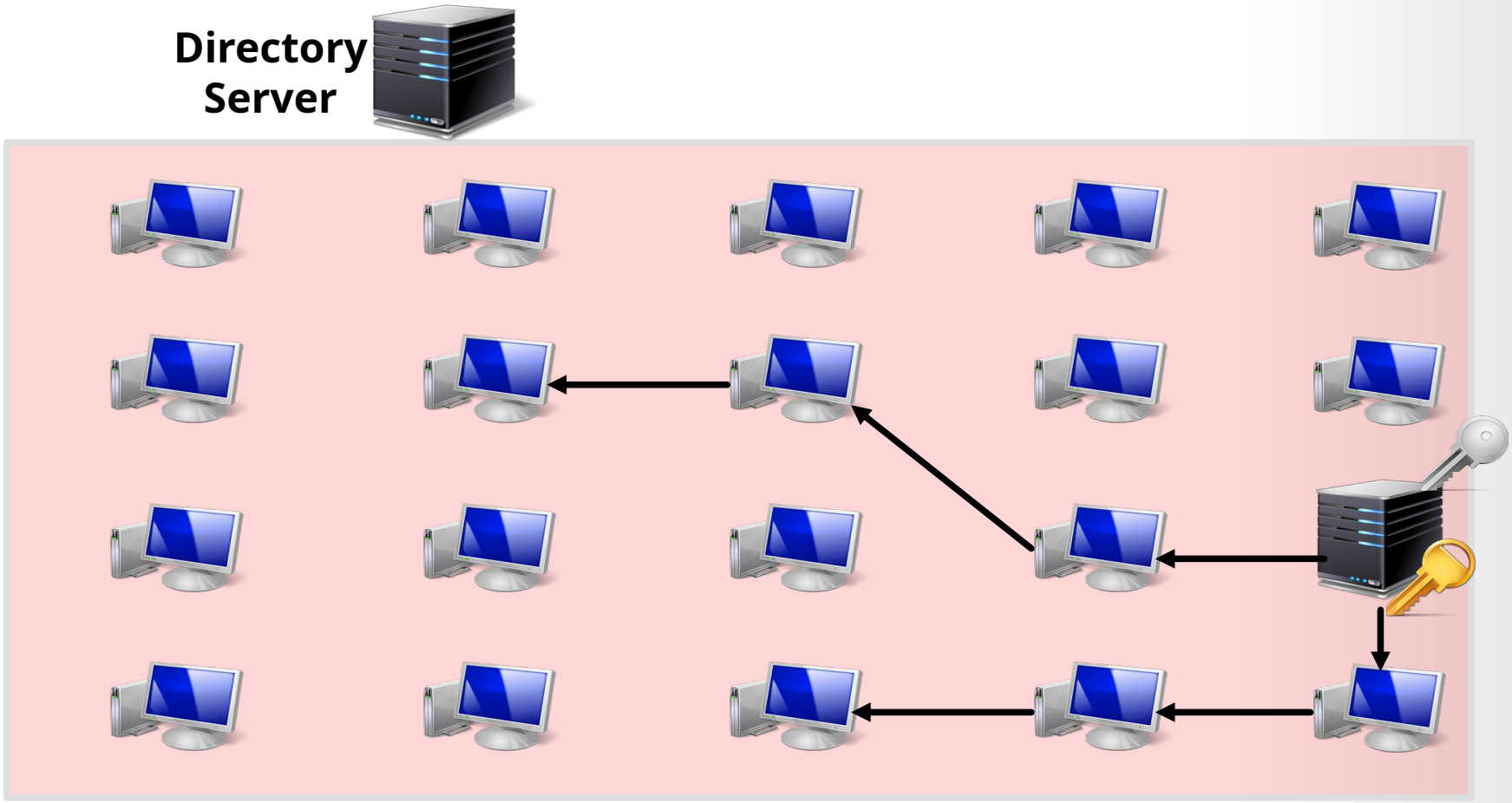
Hidden Services



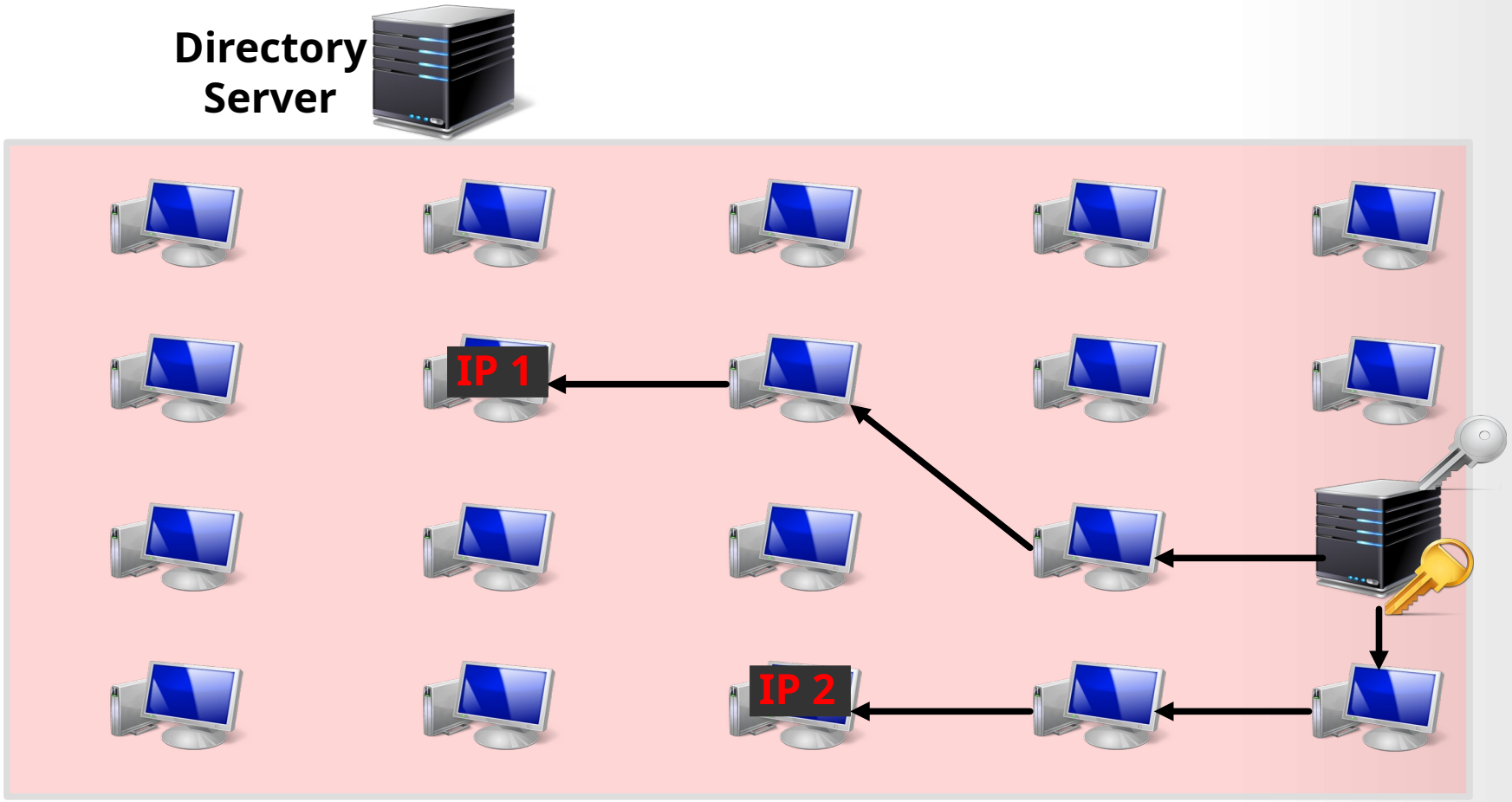
Hidden Services



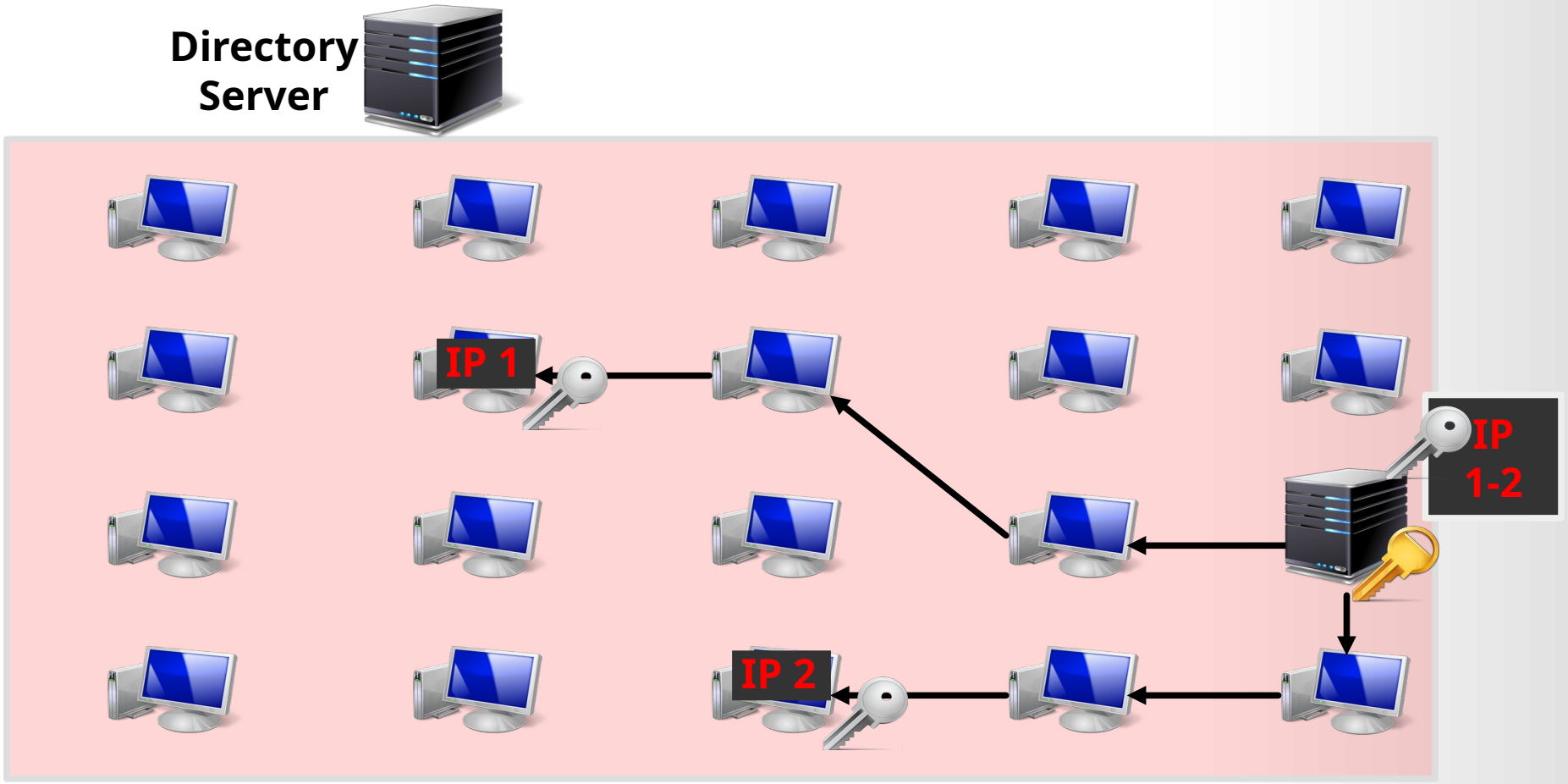
Hidden Services



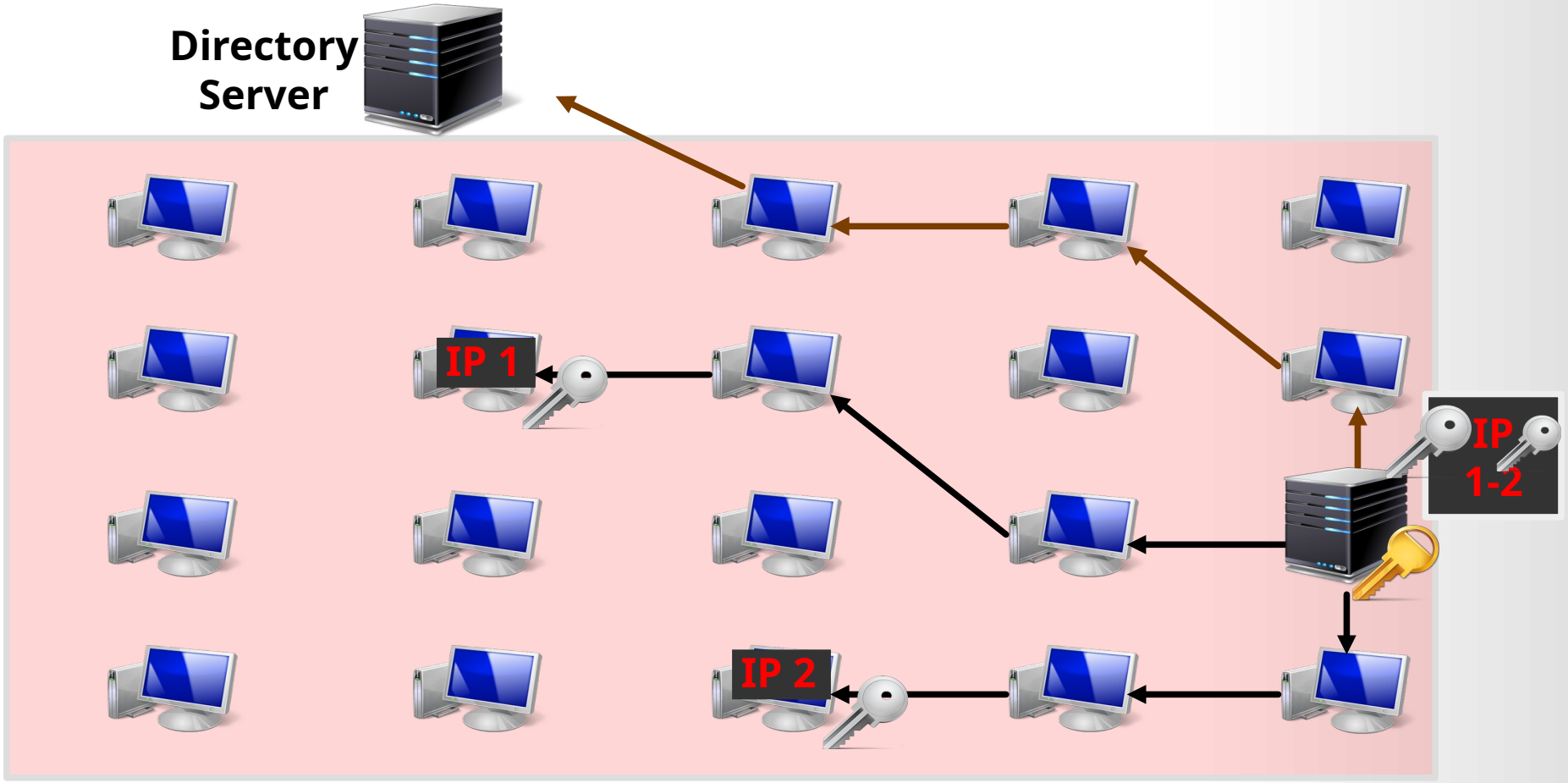
Hidden Services



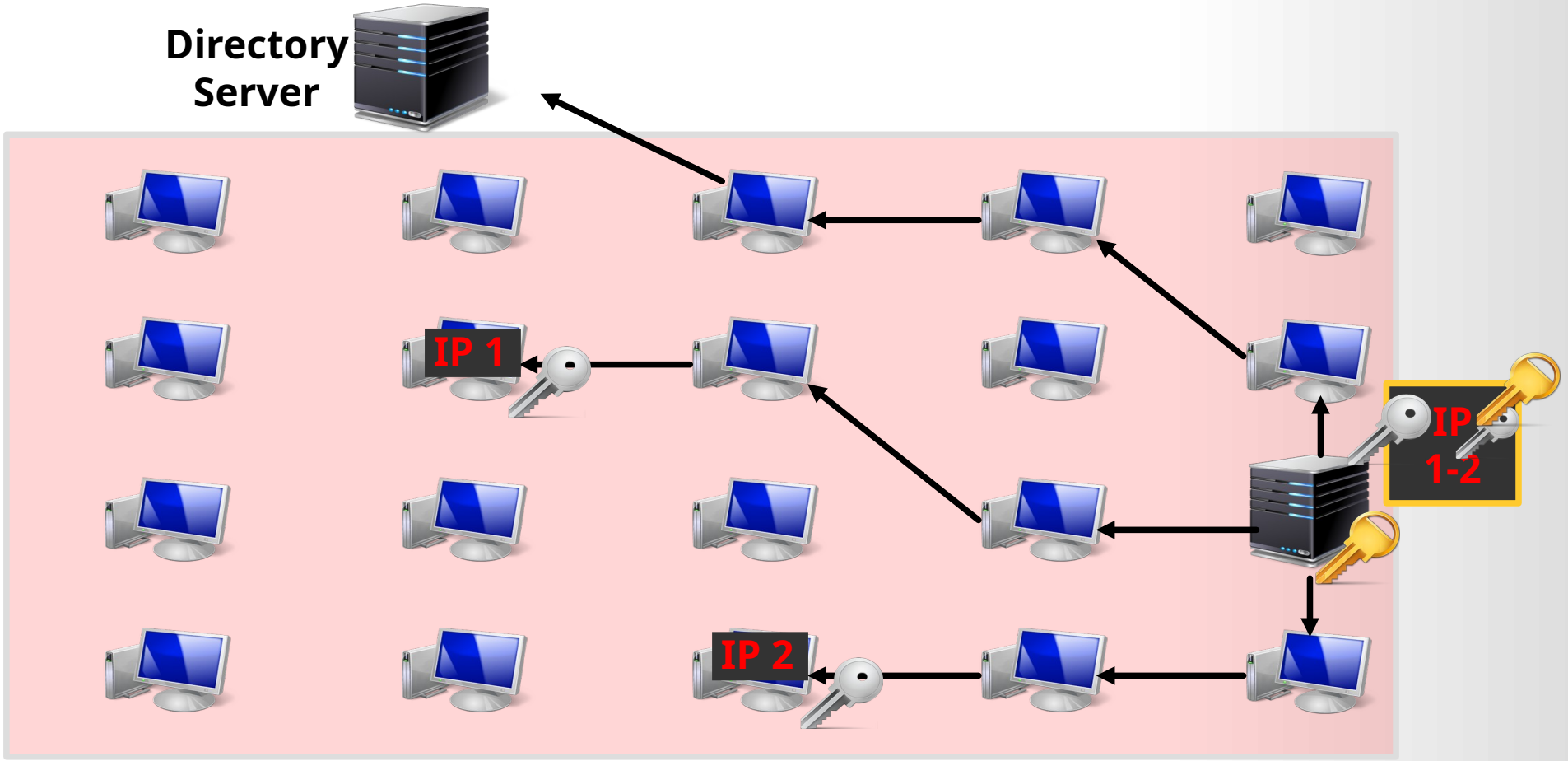
Hidden Services



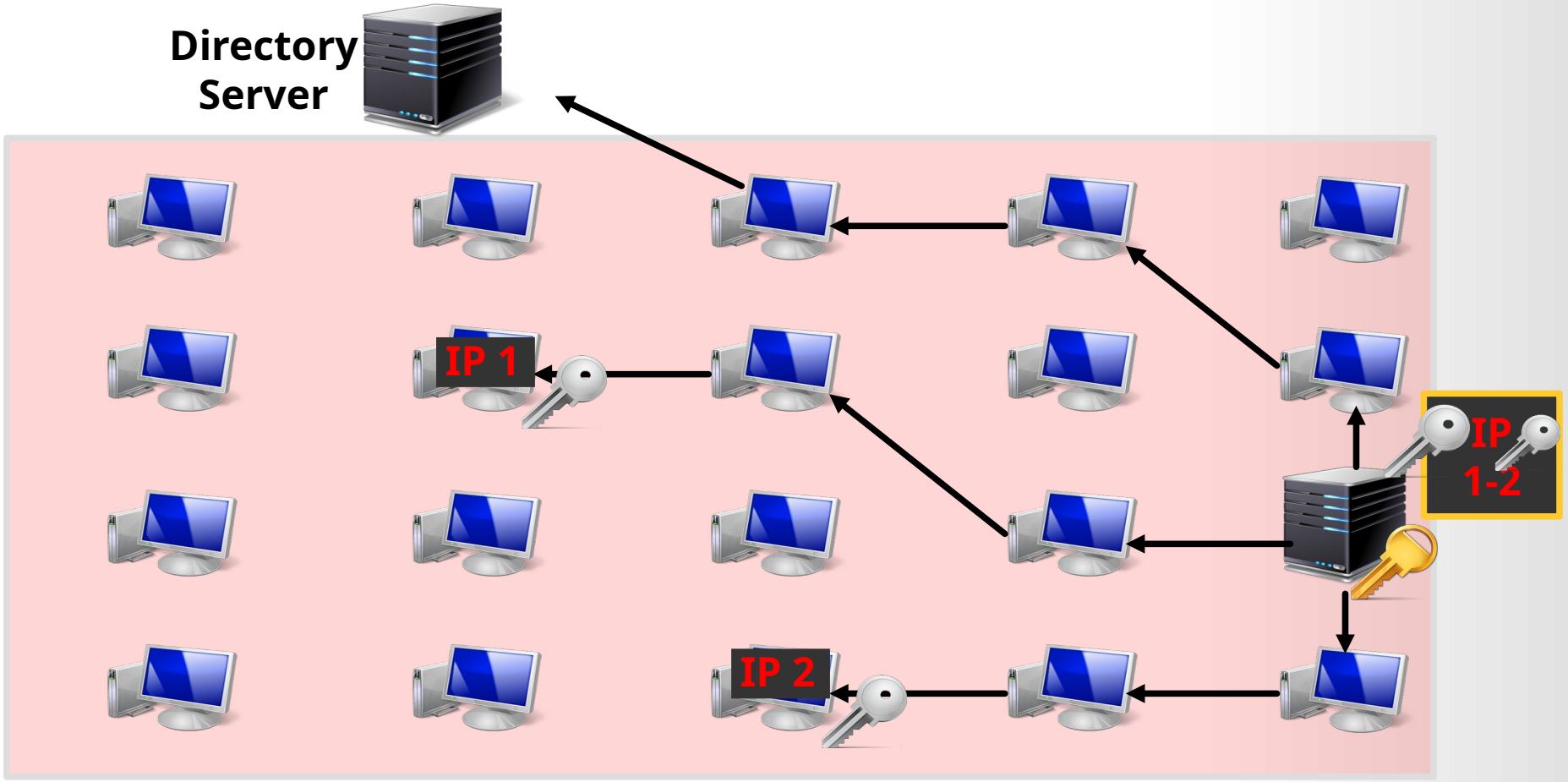
Hidden Services



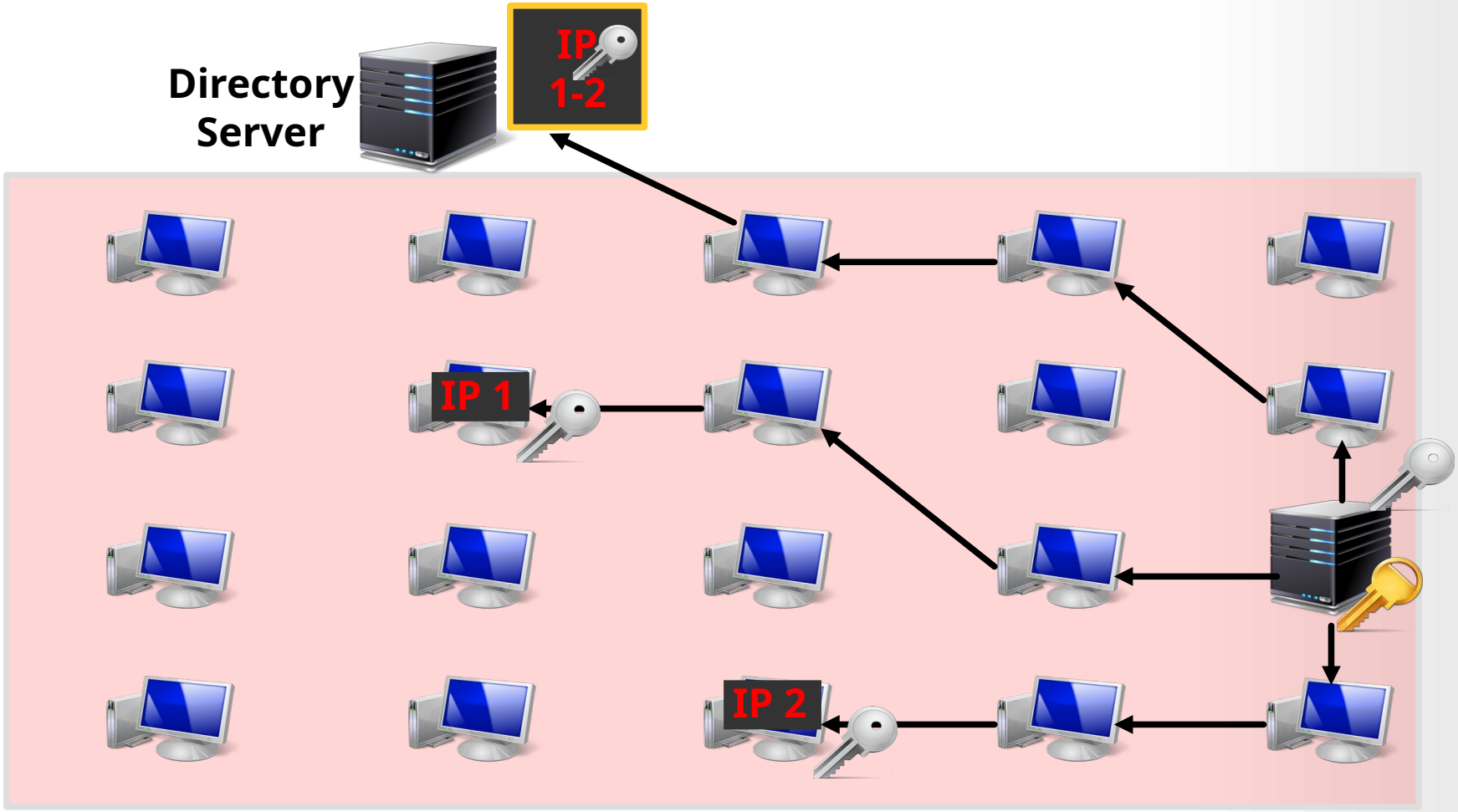
Hidden Services



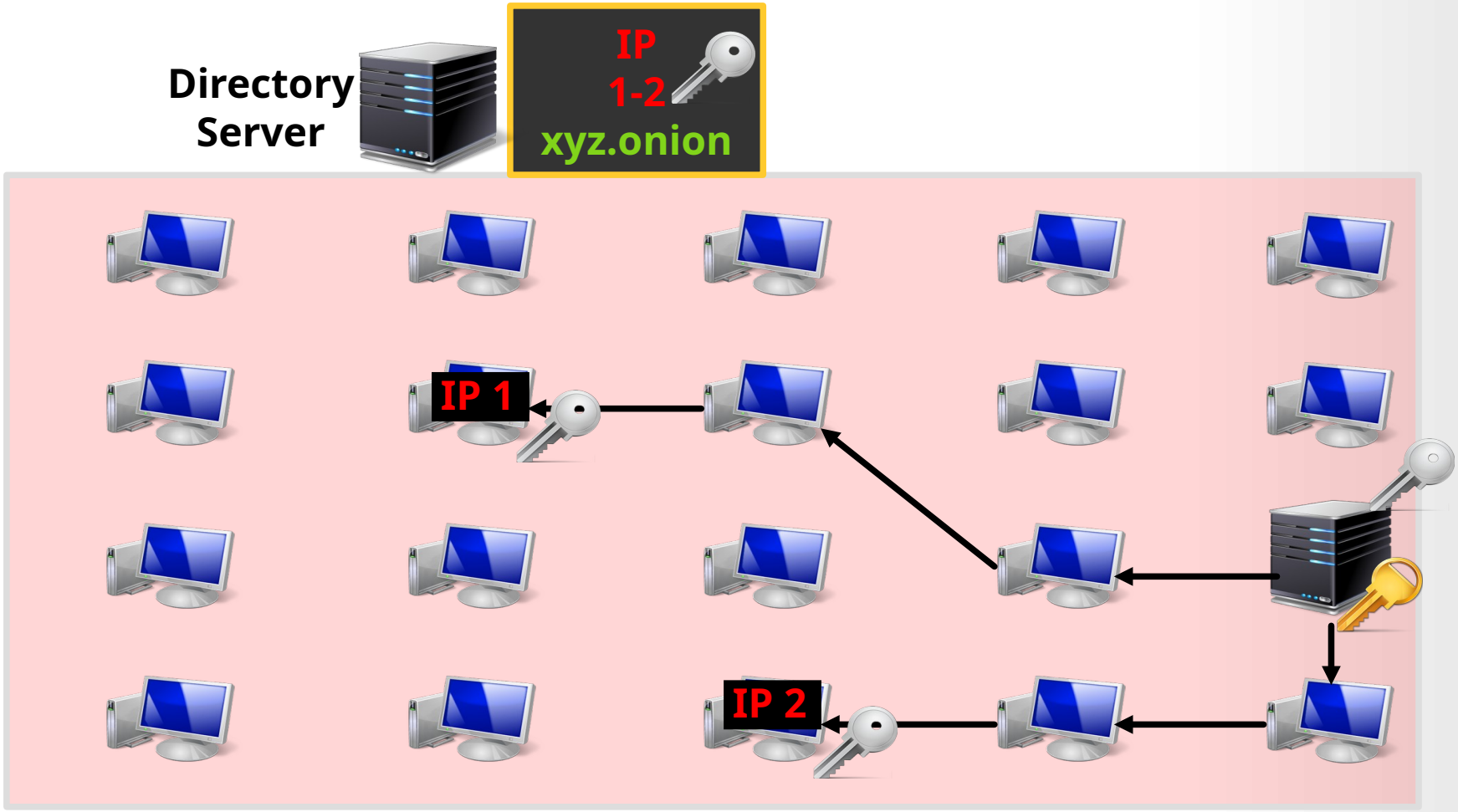
Hidden Services



Hidden Services



Hidden Services

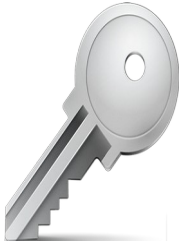


Tor

- ~~Il circuito Tor~~
- ~~Instaurazione di un Hidden Service~~
- Indirizzi .onion V3
- Connessione ad un Hidden Service
- Bridge

Indirizzi .onion V3

V2

HASH () = xyz.onion

V3

generate_ed25519_key() = abc.onion

Indirizzi .onion V3

generate_ed25519_key() = abc.onion

Per evitare la collezione di chiavi massiva questa generazione avviene modificata ogni giorno identificando l'operazione come "*blinded public key*".

Ciò vuol dire che il client, quando fa richiesta di accedere al sito ***facebookwkhpilnemxj7asaniu7vnjjbiltxjqhye3mhbshg7kx5tfyd***, in automatico tale richiesta viene convertita calcolando la blinded public key alla data in cui viene fatta la richiesta, ad esempio ***ek4gJEtlHmwwadLvMNG7tYx/lJuJN1zQl6pMVkGmAcM***.

Indirizzi .onion V3

generate_ed25519_key() = abc.onion

Questa chiave pubblica può essere utilizzata sia per cifrare dati che l'Hidden Service invia al Directory Server che per mitigre la collezione degli indirizzi e le analisi massive su di essi (comportamento per altro sanzionato dal Bad Relay Team).

Indirizzi .onion V3

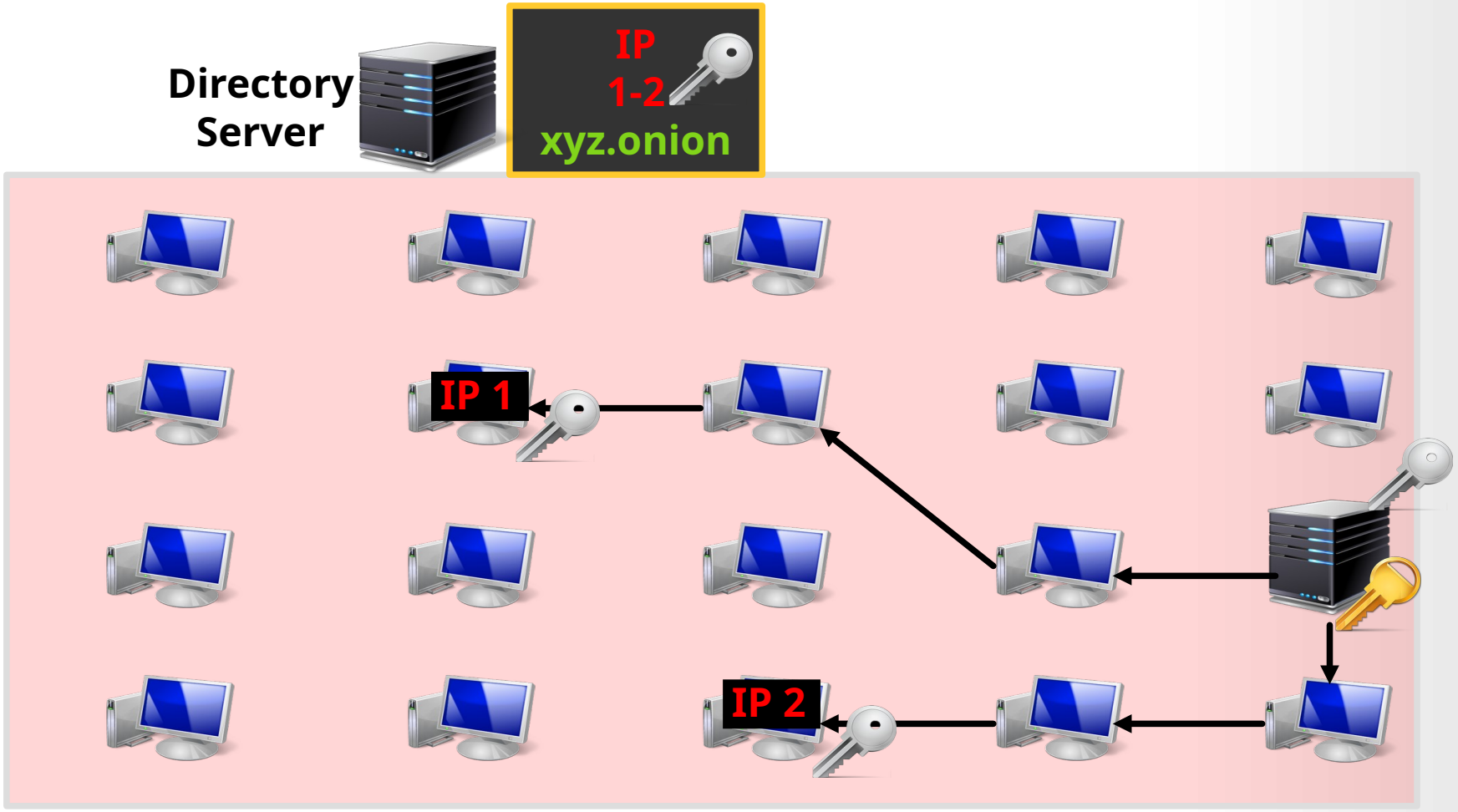
TODO:

- Esistono una sorta di motori di ricerca
- Esistono i vanity domain .onion

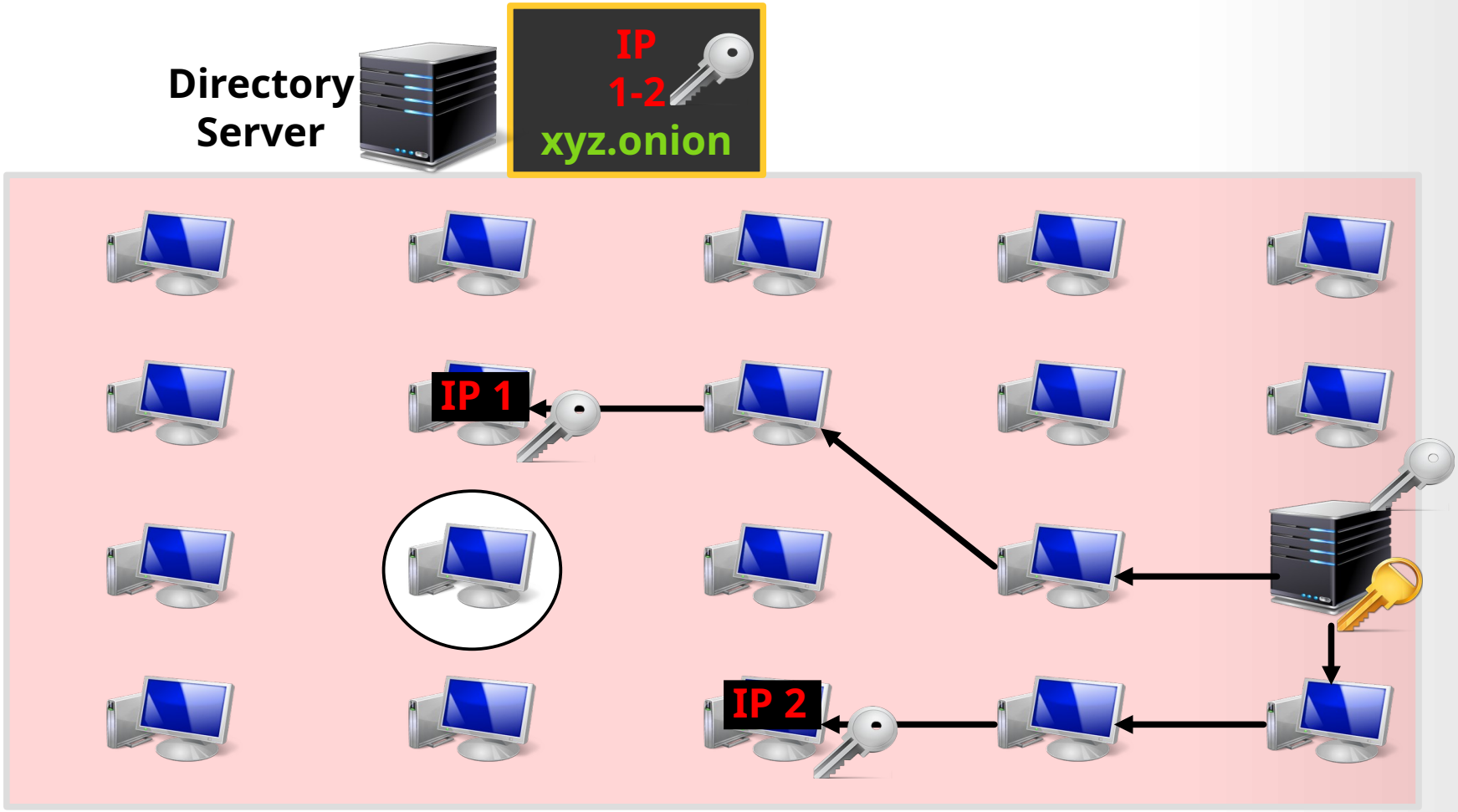
Tor

- ~~Il circuito Tor~~
- ~~Instaurazione di un Hidden Service~~
- ~~Indirizzi .onion V3~~
- Connessione ad un Hidden Service
- Bridge
- Pericoli

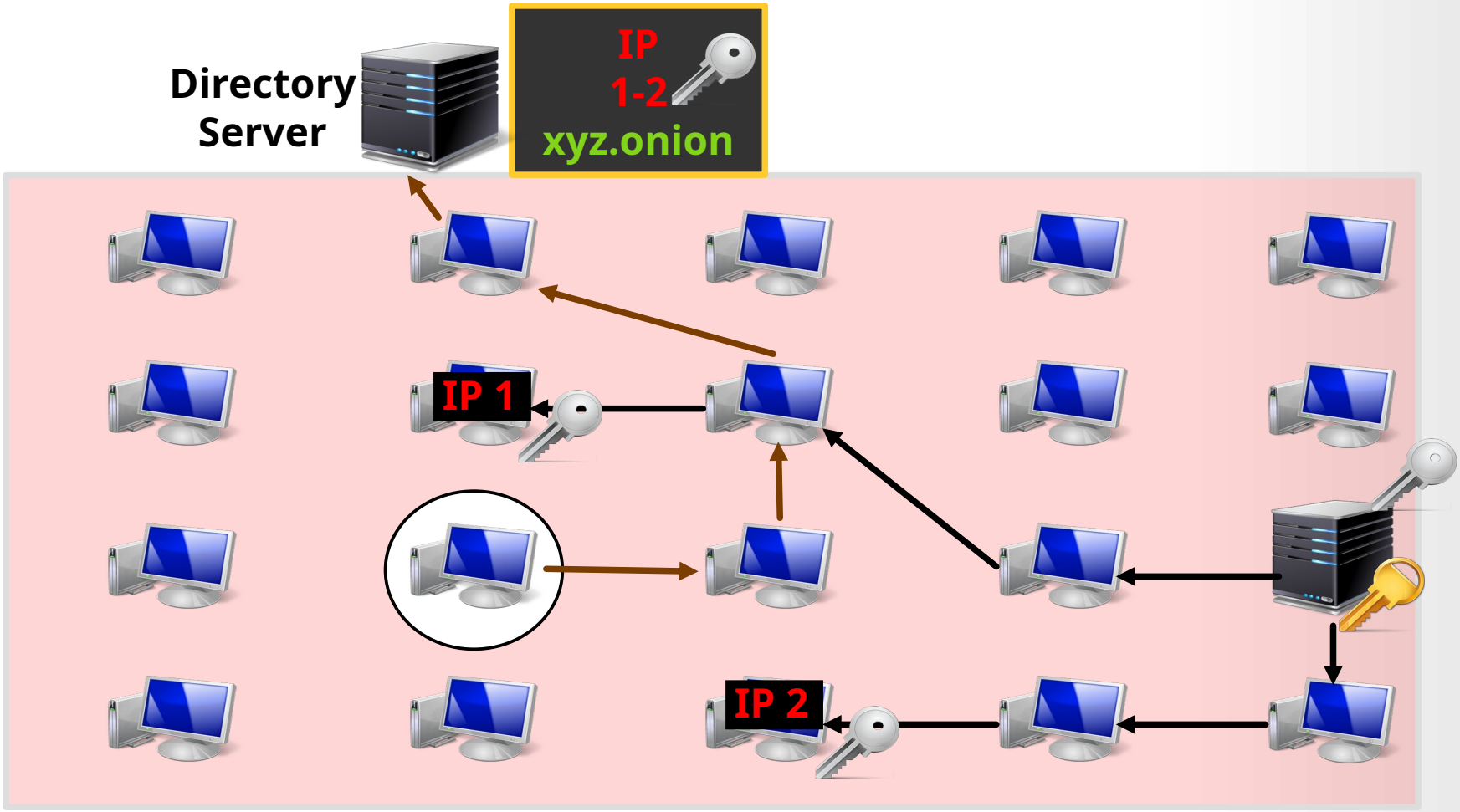
Hidden Services



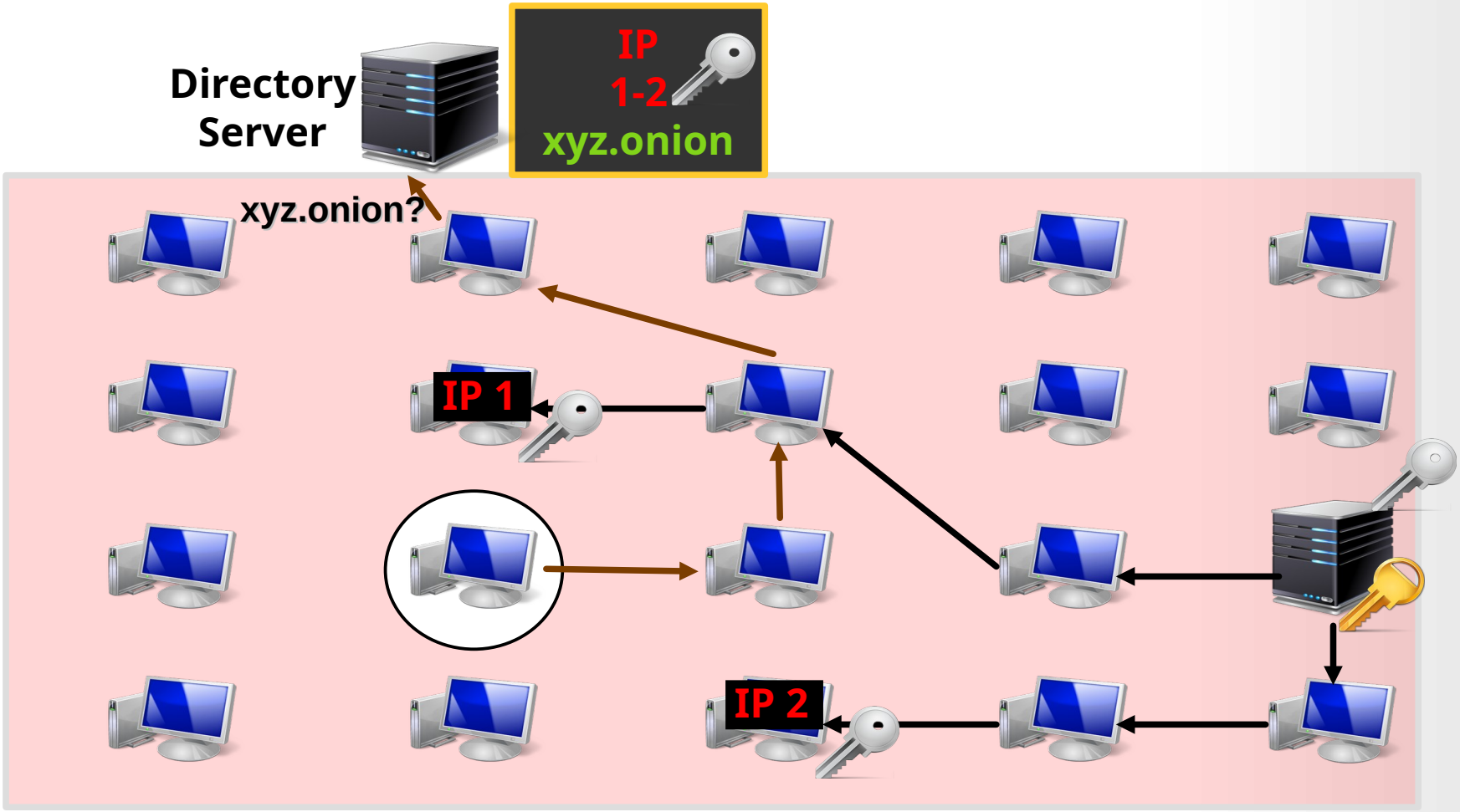
Hidden Services



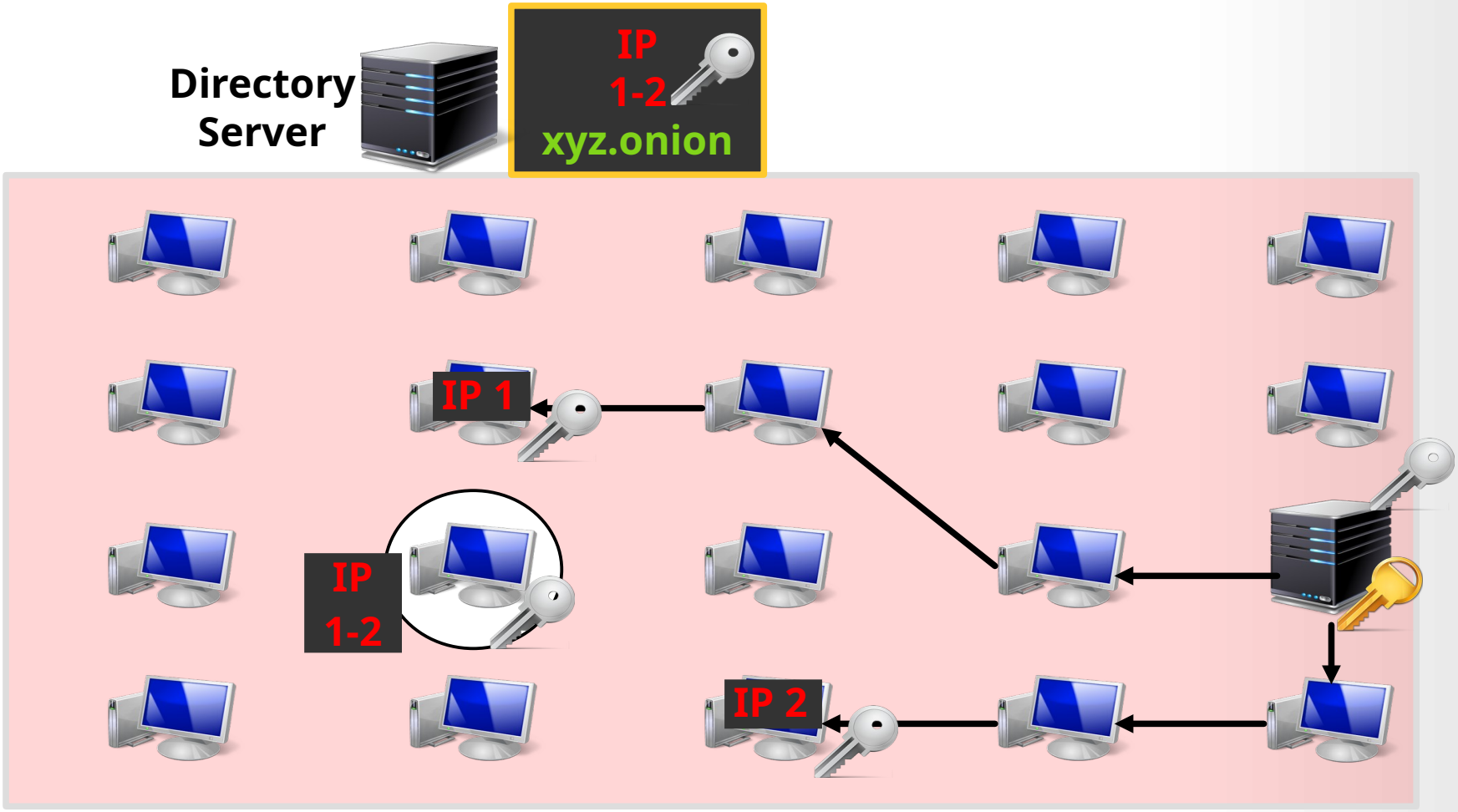
Hidden Services



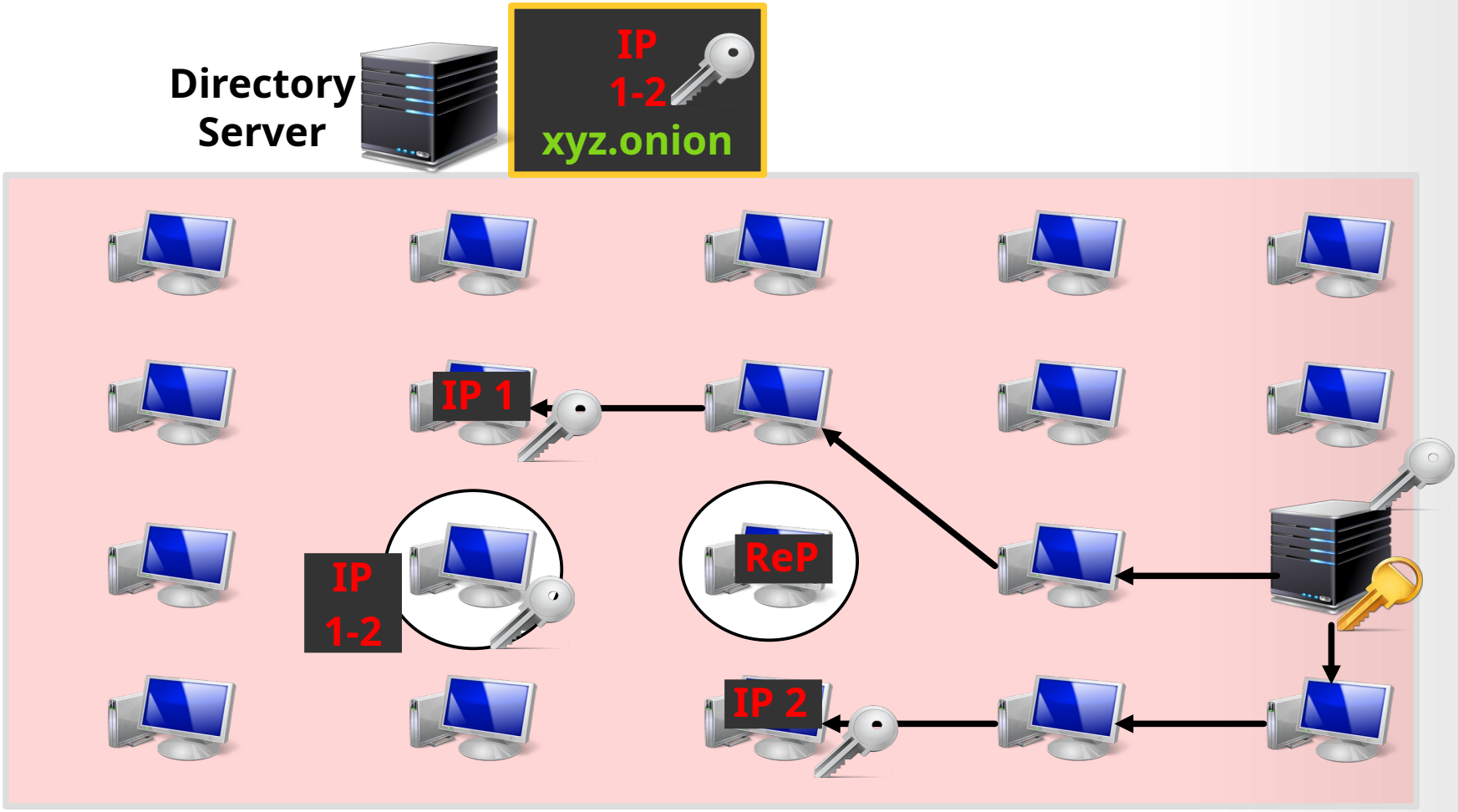
Hidden Services



Hidden Services



Hidden Services



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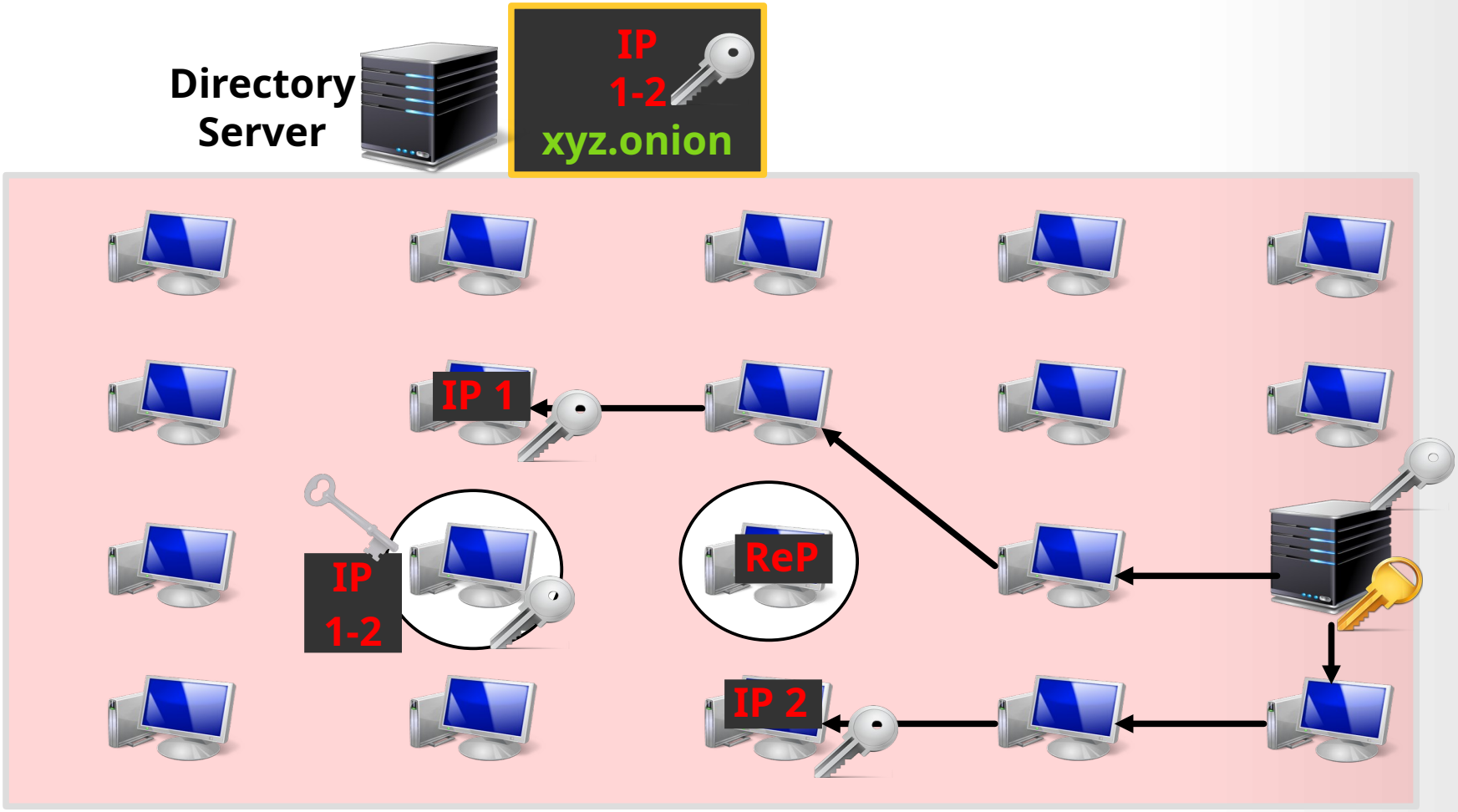
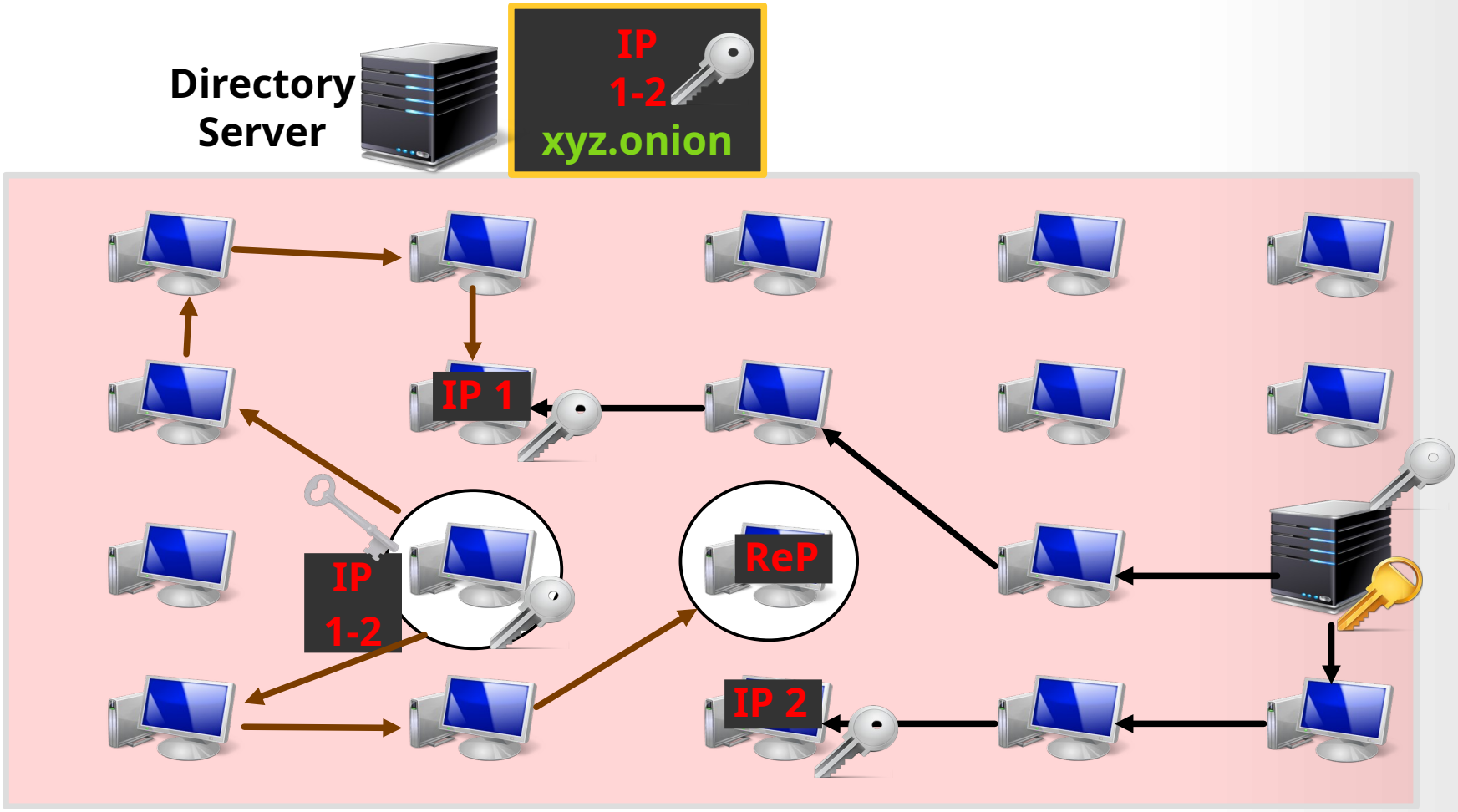
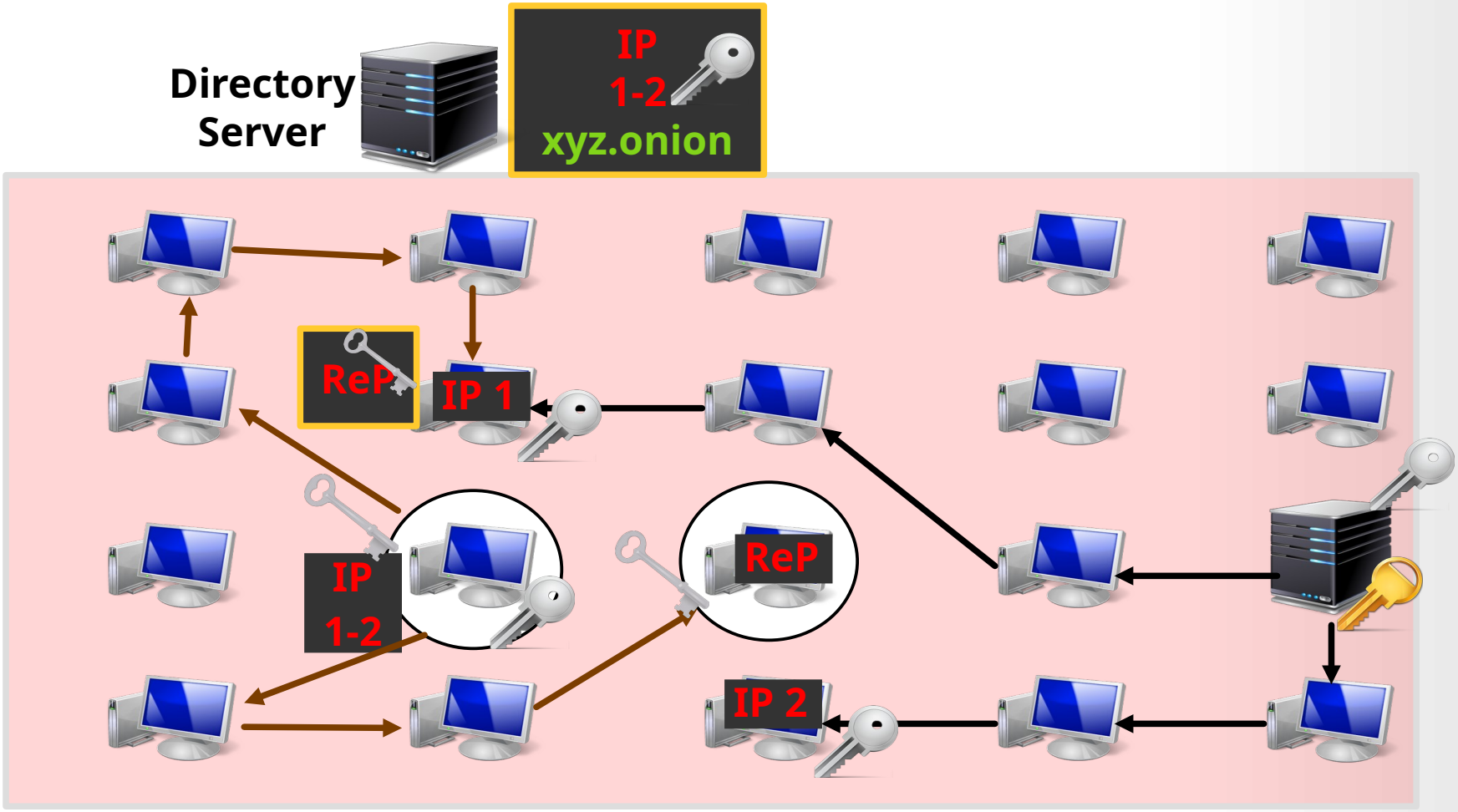


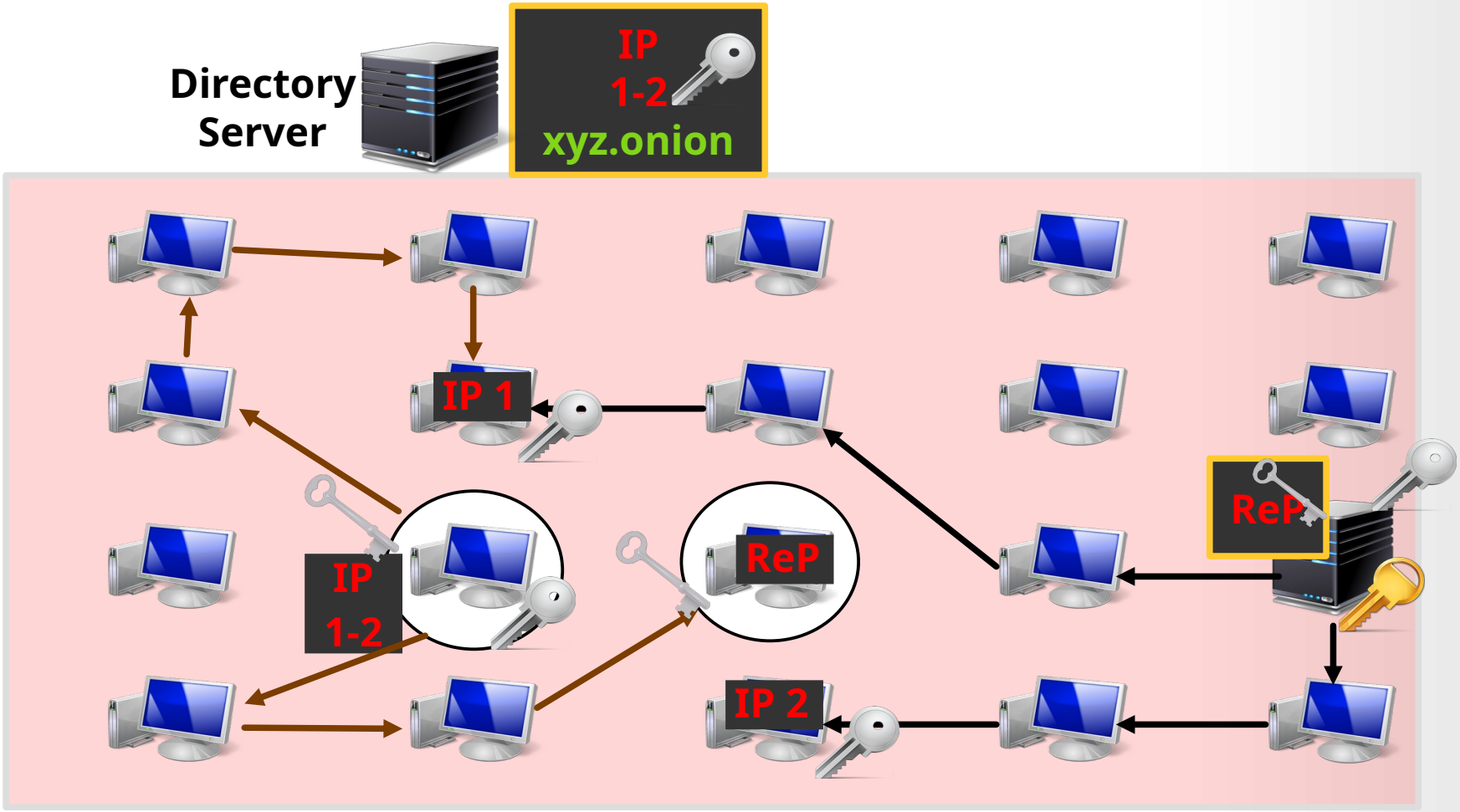
Hidden Services



Hidden Services



Hidden Services



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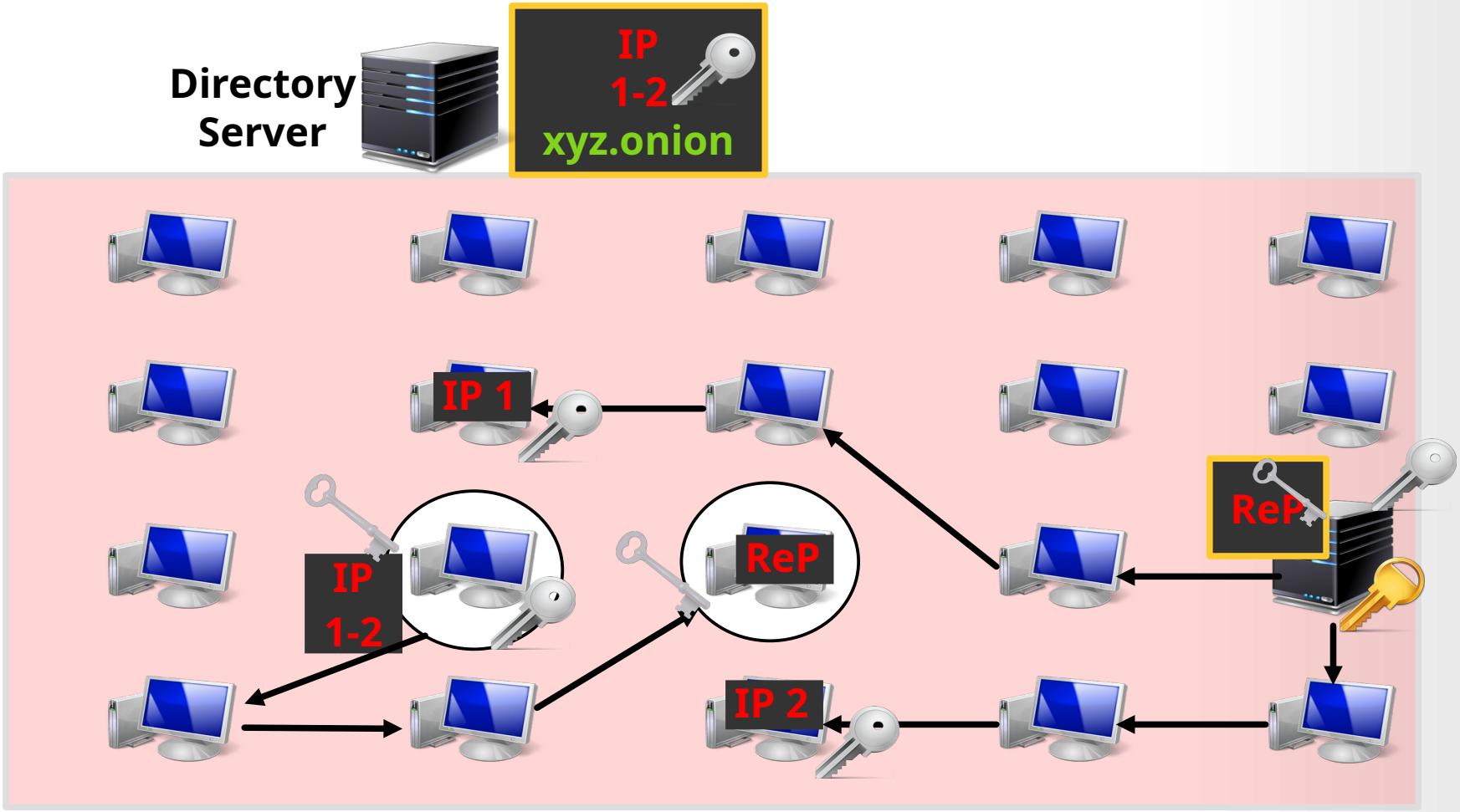

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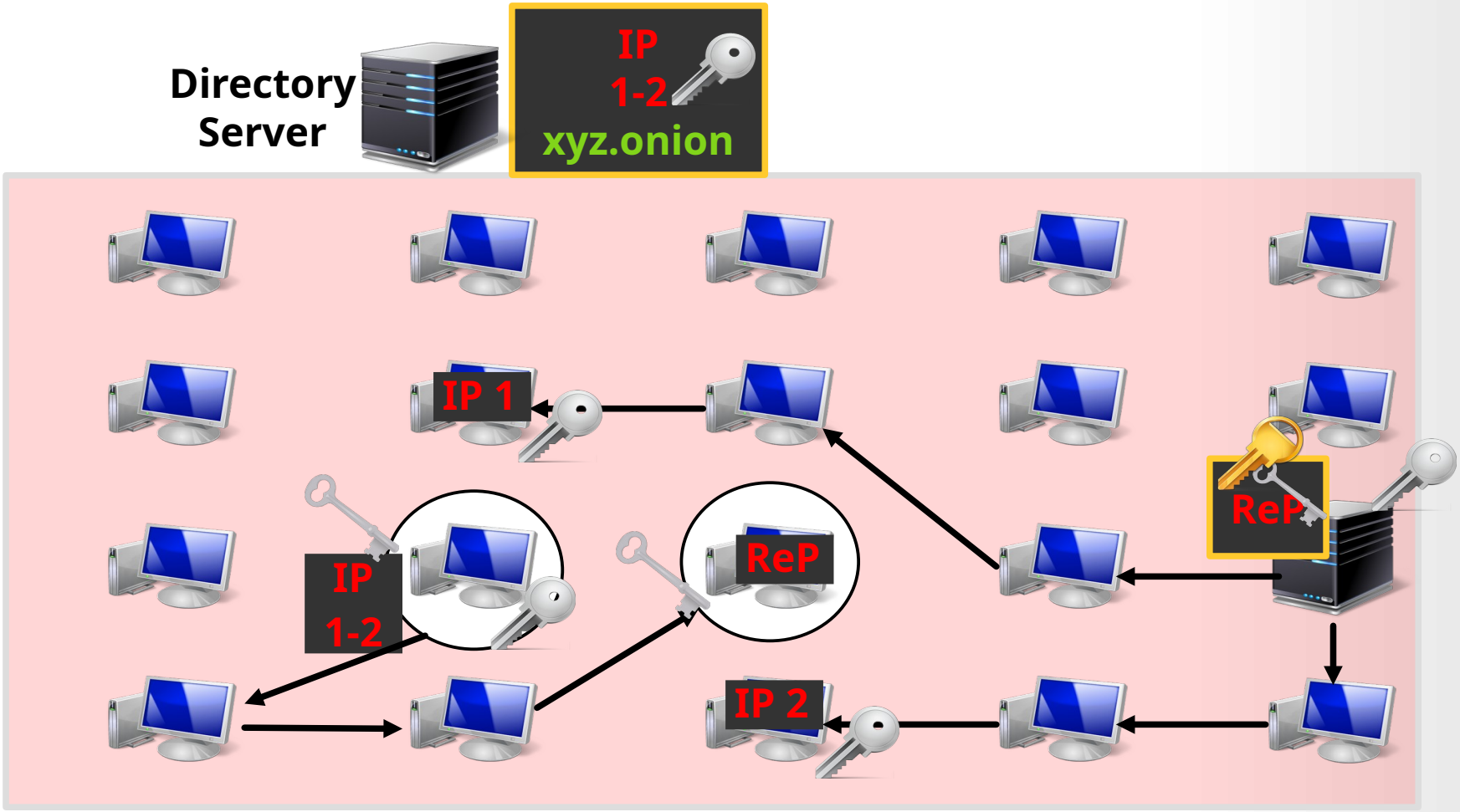

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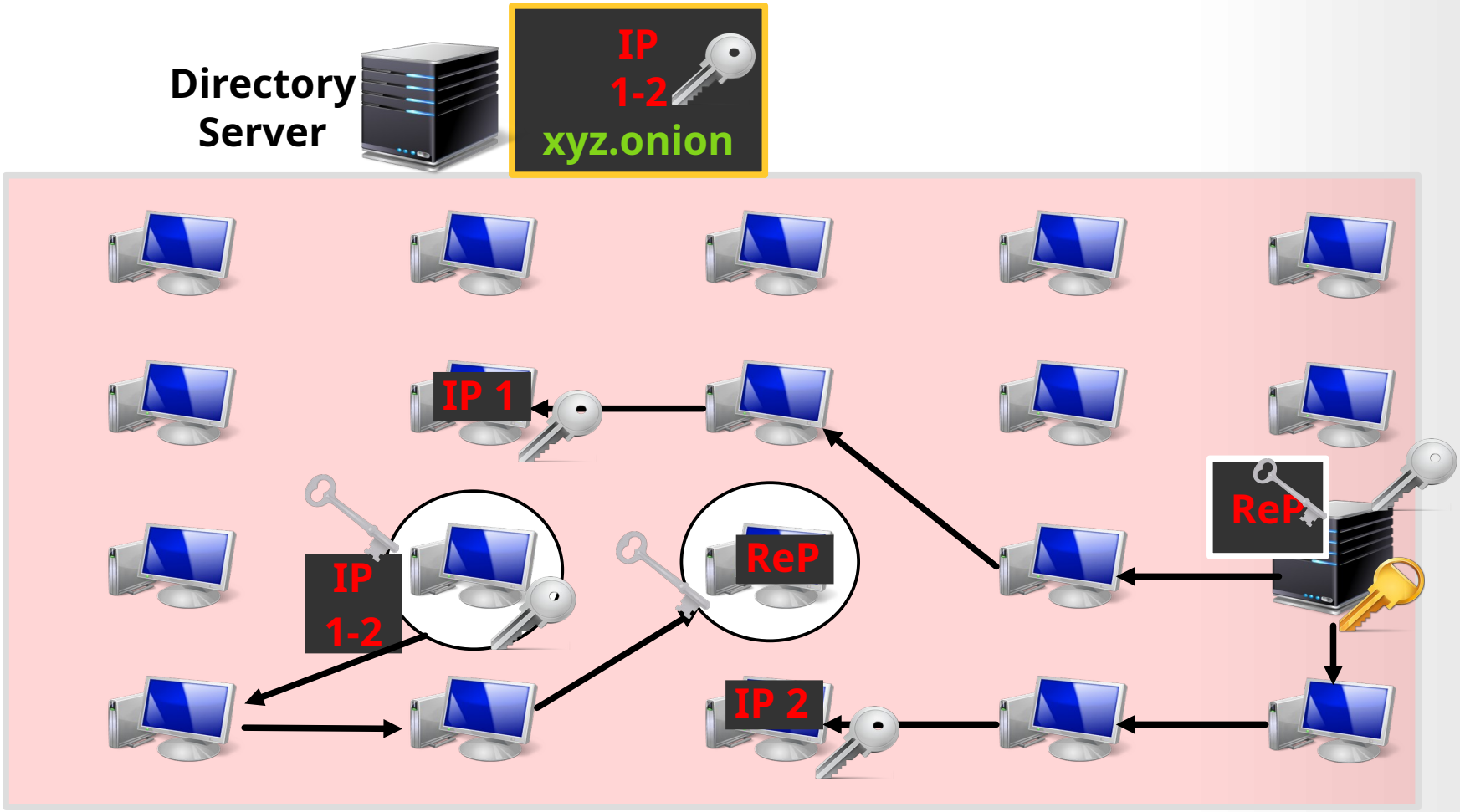

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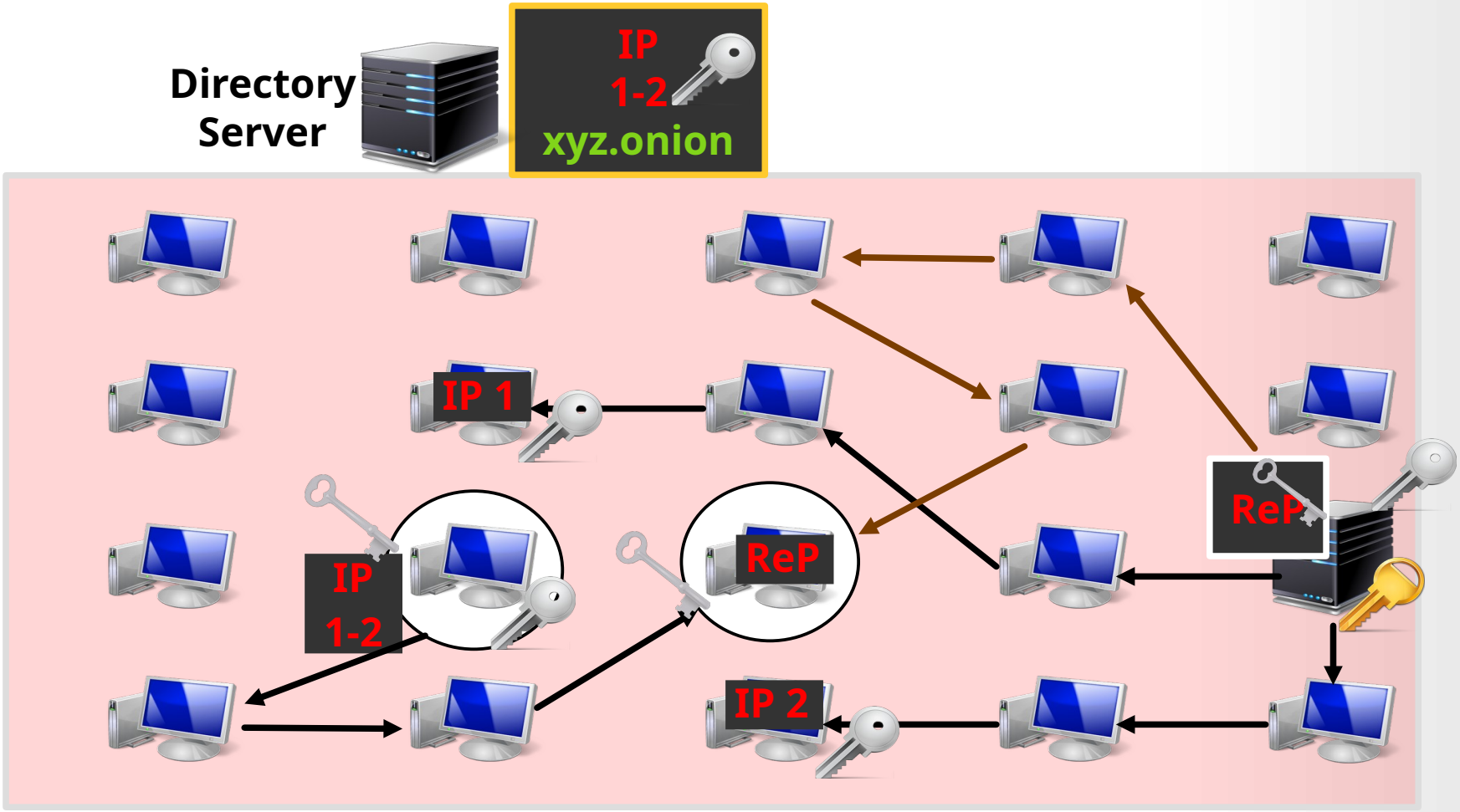
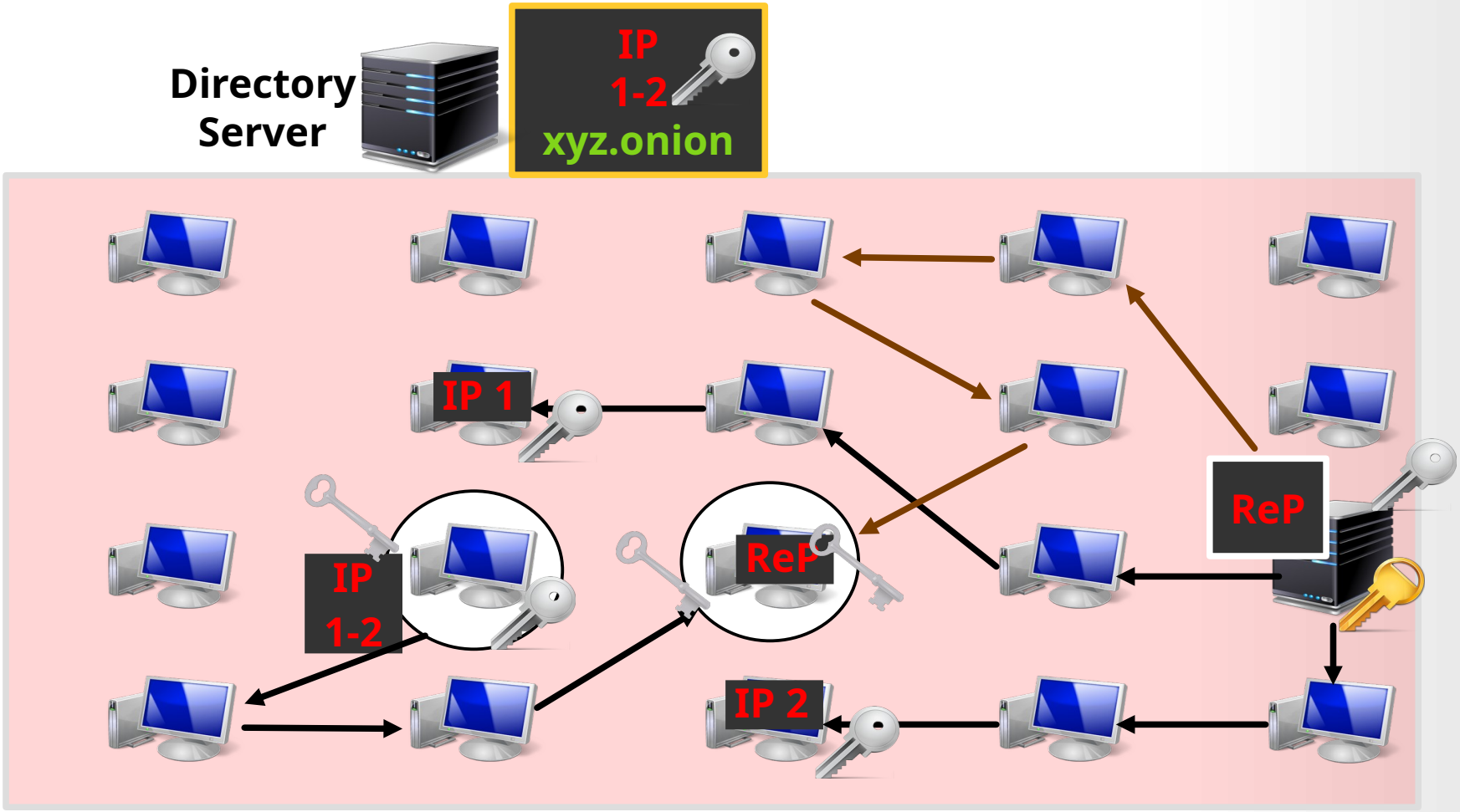


Hidden Services



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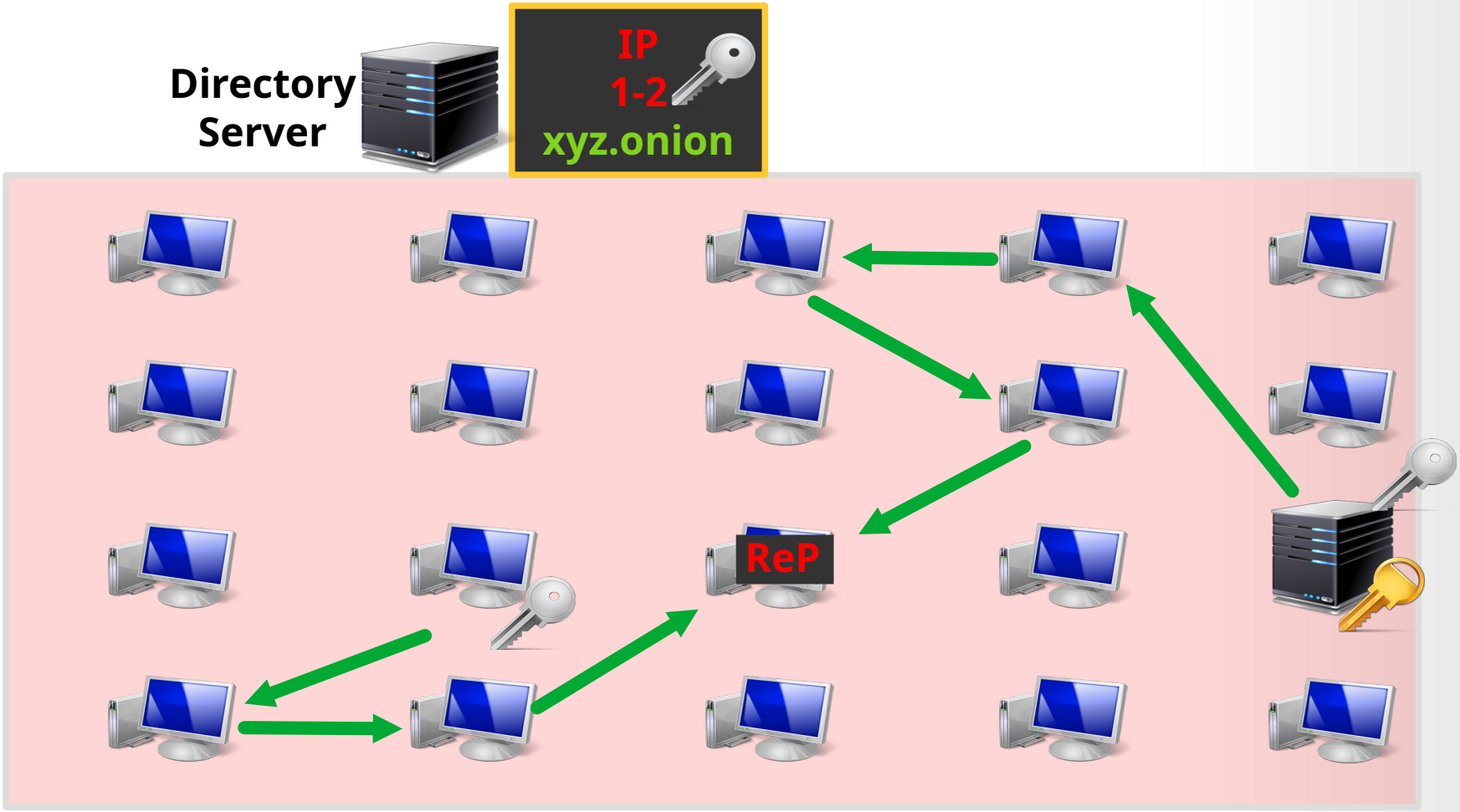

Tor

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- ~~Indirizzi .onion V3~~
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Tor

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- Pericoli

Pericoli

- DNS leak
- Javascript

Pericoli

Server DNS

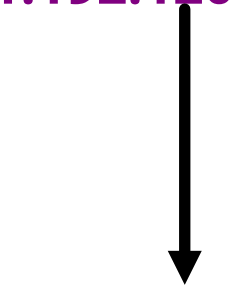
sito.com
aka
31.192.120.36

Chi è sito.com?

Pericoli

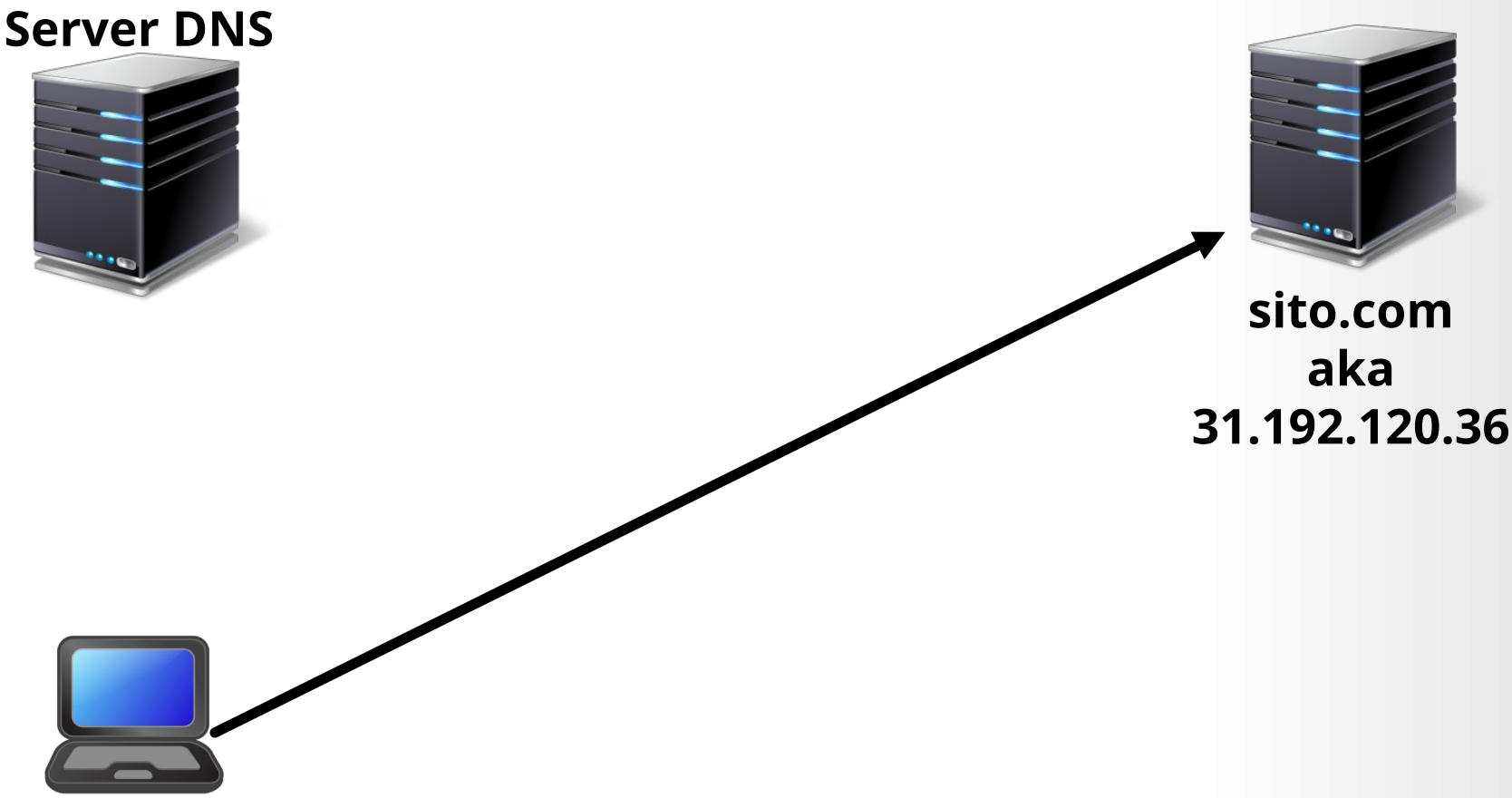
Server DNS

31.192.120.36

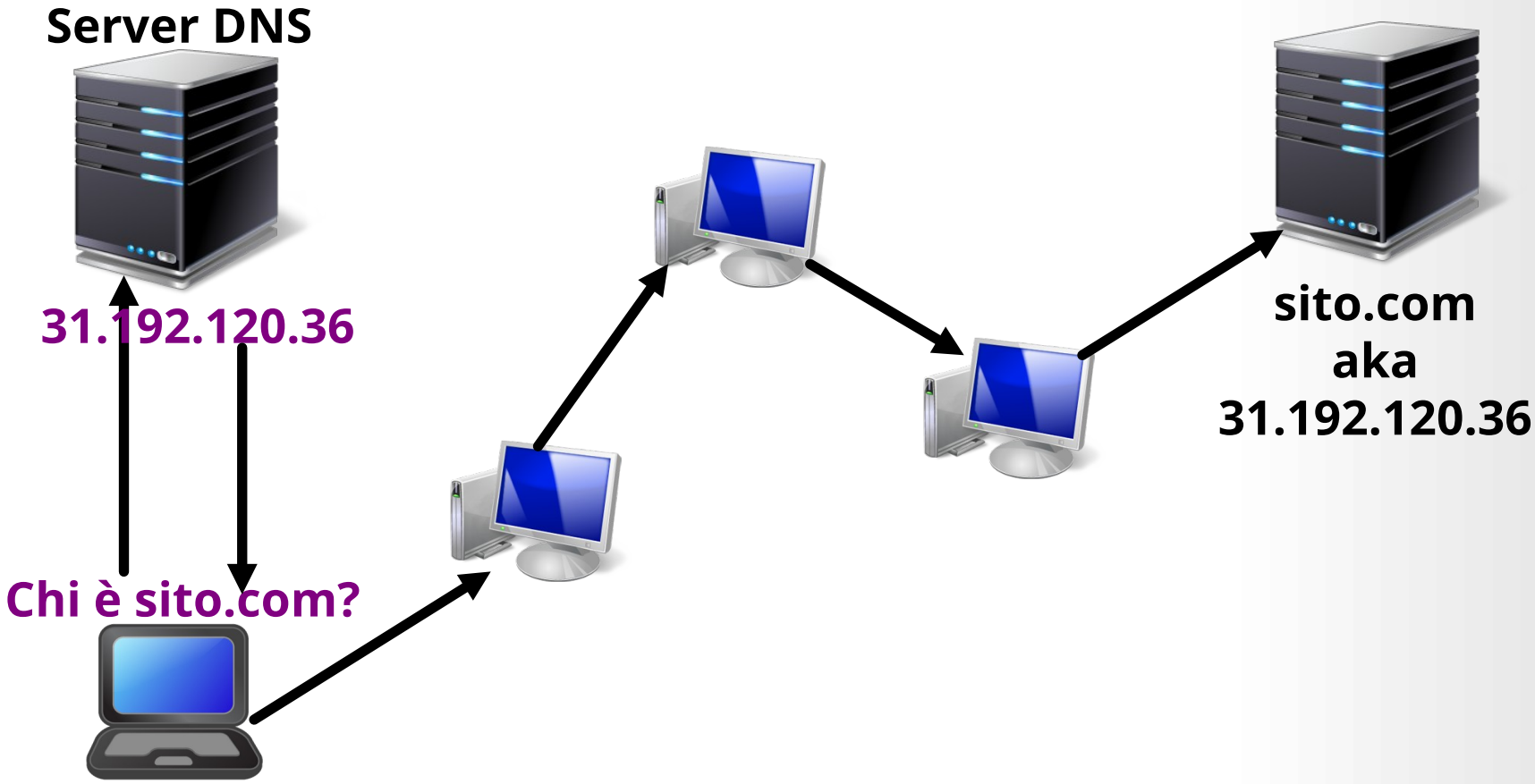


sito.com
aka
31.192.120.36

Pericoli



Pericoli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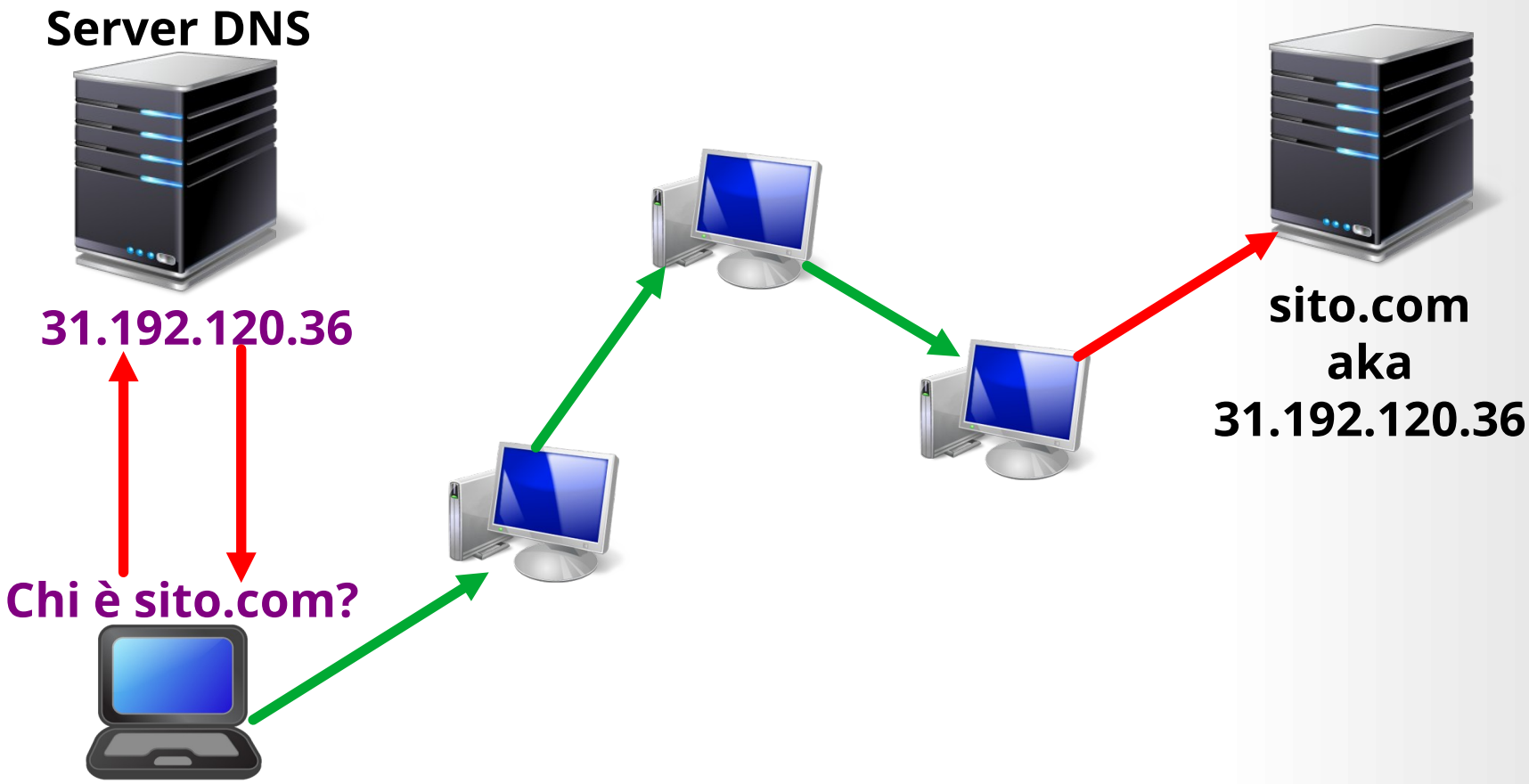
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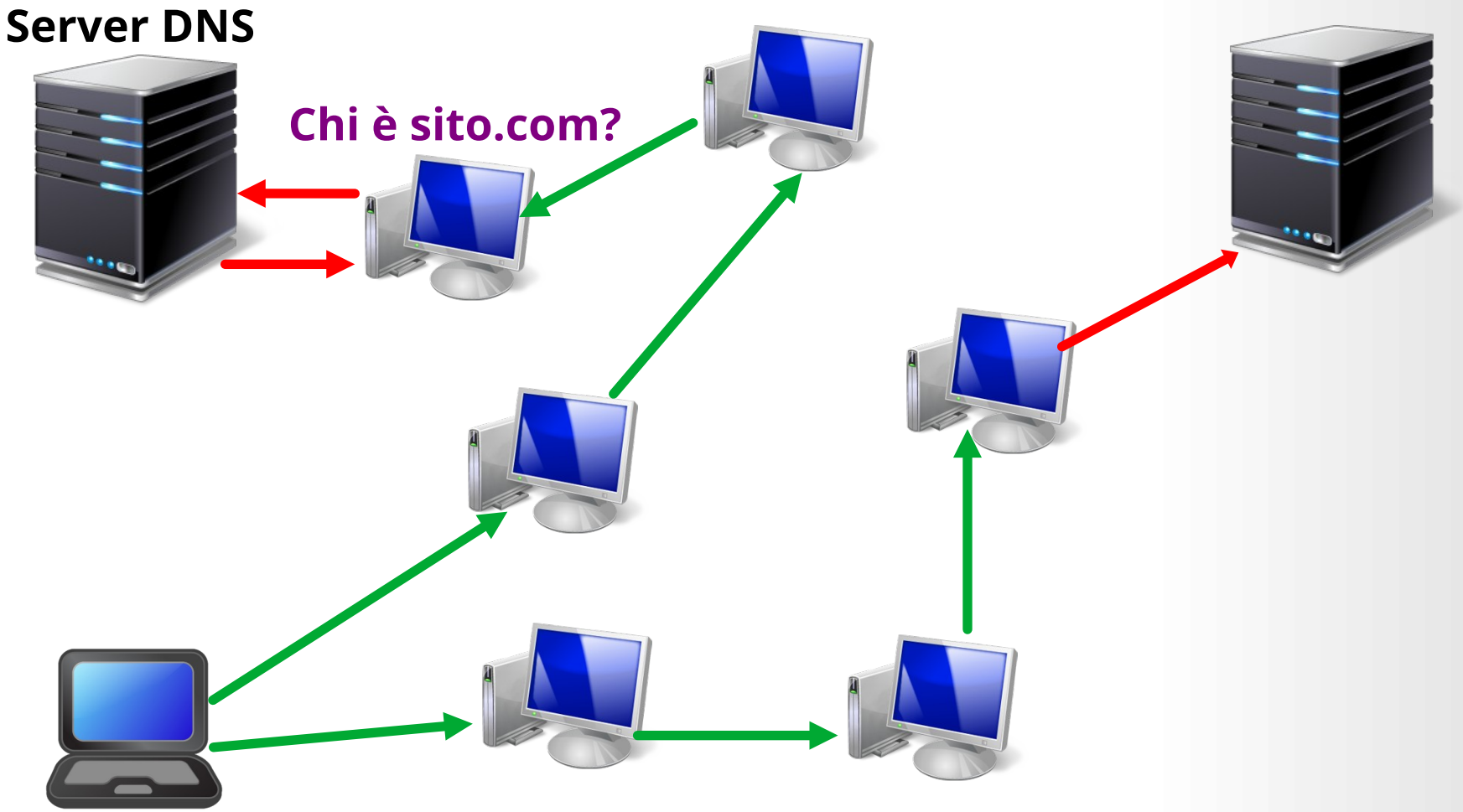

Pericoli