Intro to DNA

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Domain Name Assertions

- Delegate hosting your domain?
- Typical X.509 identities are not enough
  - Secrecy/liability of private keys
  - Scale

Dramatis Personæ

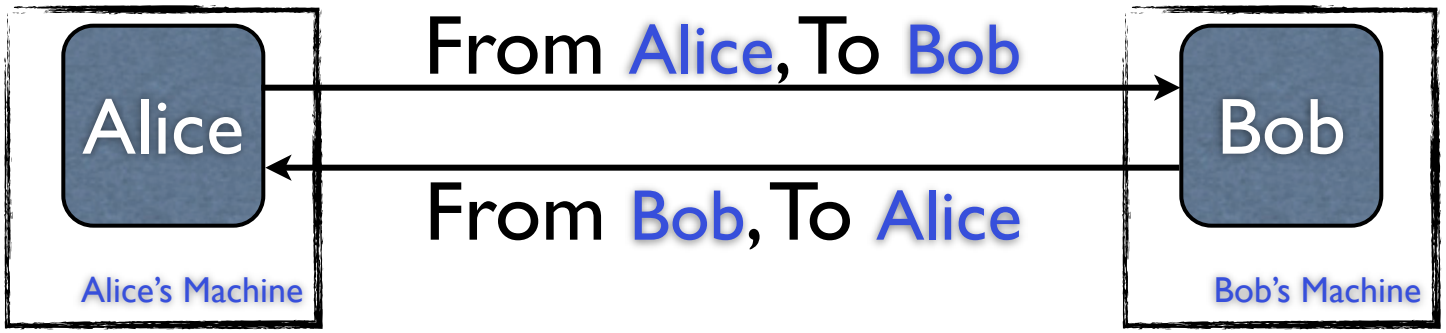
- Alice owns `alice.example`,
  running an XMPP server
- Bob owns `bob.example`,
  running an XMPP server
- Cho owns `cho.example`,
  running a hosting provider for XMPP
- Dho owns `dho.example`,
  running a hosting provider for XMPP

Note: "own" is shorthand for both controlling the DNS for the domain and being able to get a widely-trusted CA to sign a cert for you with that domain name in it.

Alice talks to Bob (today)

- Alice and Bob host their own XMPP servers on their own machines
- SRV, X.509 tie identity to each end of a connection
- One connection each way
- Each check “from” addresses to

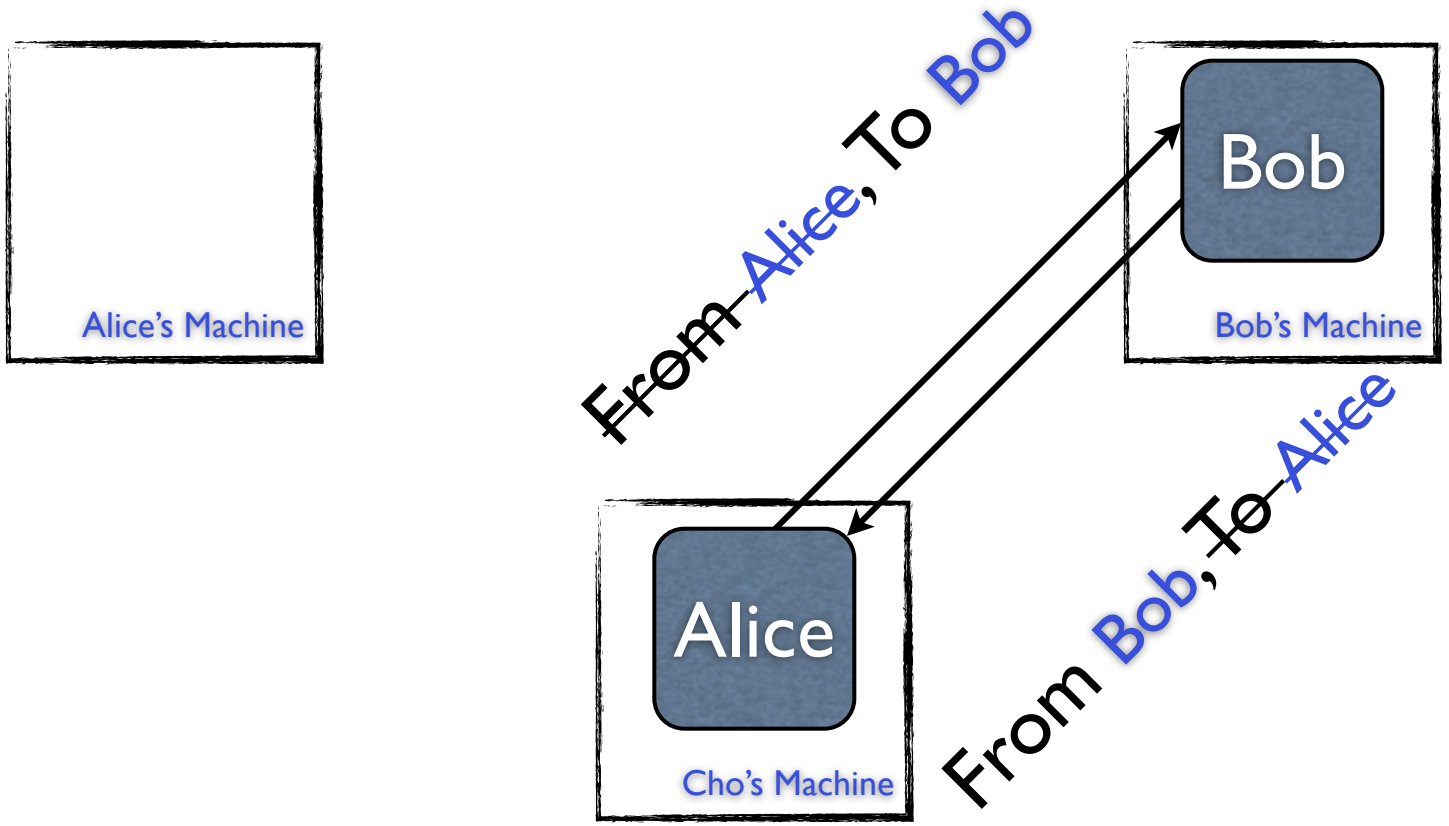
Today


Alice
From Alice, To Bob
From Bob, To Alice
Bob
Alice's Machine
Bob's Machine

Alice Decides to Host with Cho

- Alice trusts Cho to protect her data, *within reason*
- Alice points her SRV to Cho's machine
- Alice's private key?
  - Cho doesn't want it (potential liability)
  - Alice doesn't want to give it (secret)

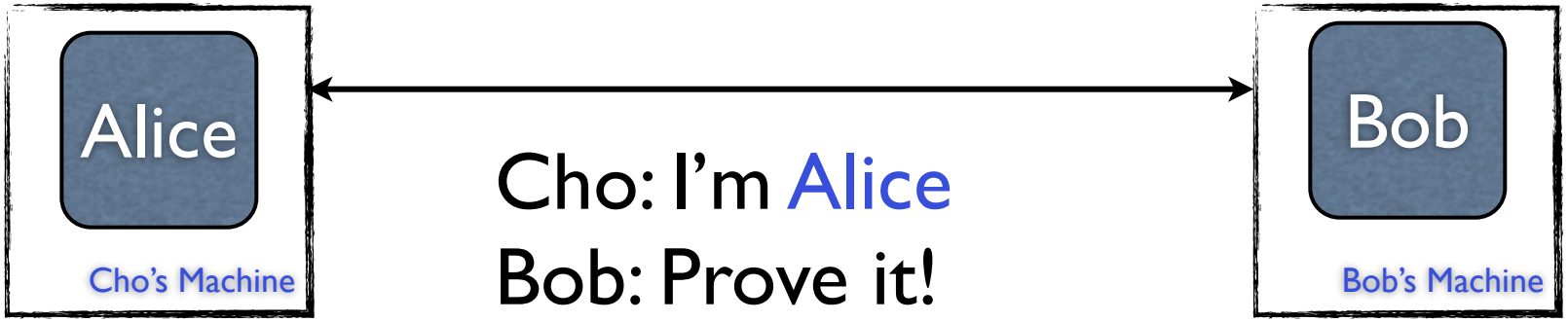
Today, with hosting



DNA: Alice gives Cho a "Proof"

- Safe for Cho to hold
- Proves to Bob that Alice trusts Cho
- First proof defined is Attribute Certificates
- Proofs are extensible

DNA

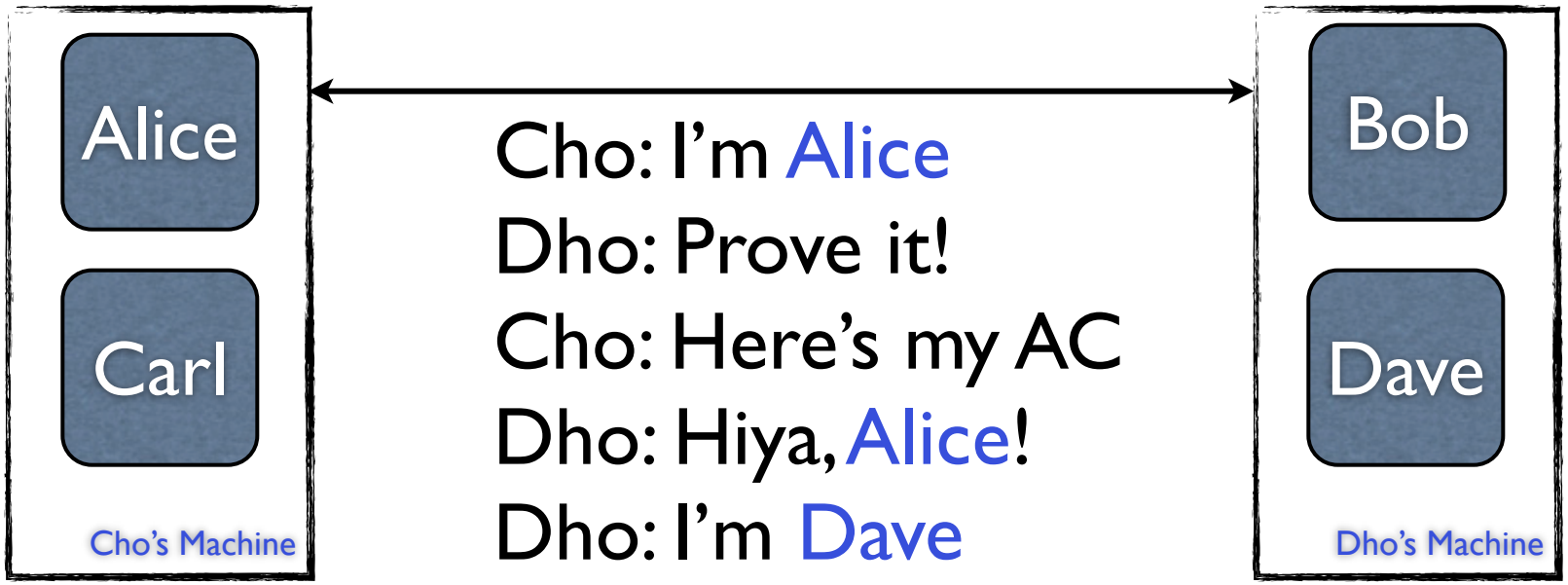


Cho: I'm Alice
Bob: Prove it!
Cho: Here's my AC
Bob: Hiya, Alice!

Bob Decides to Host with Dho

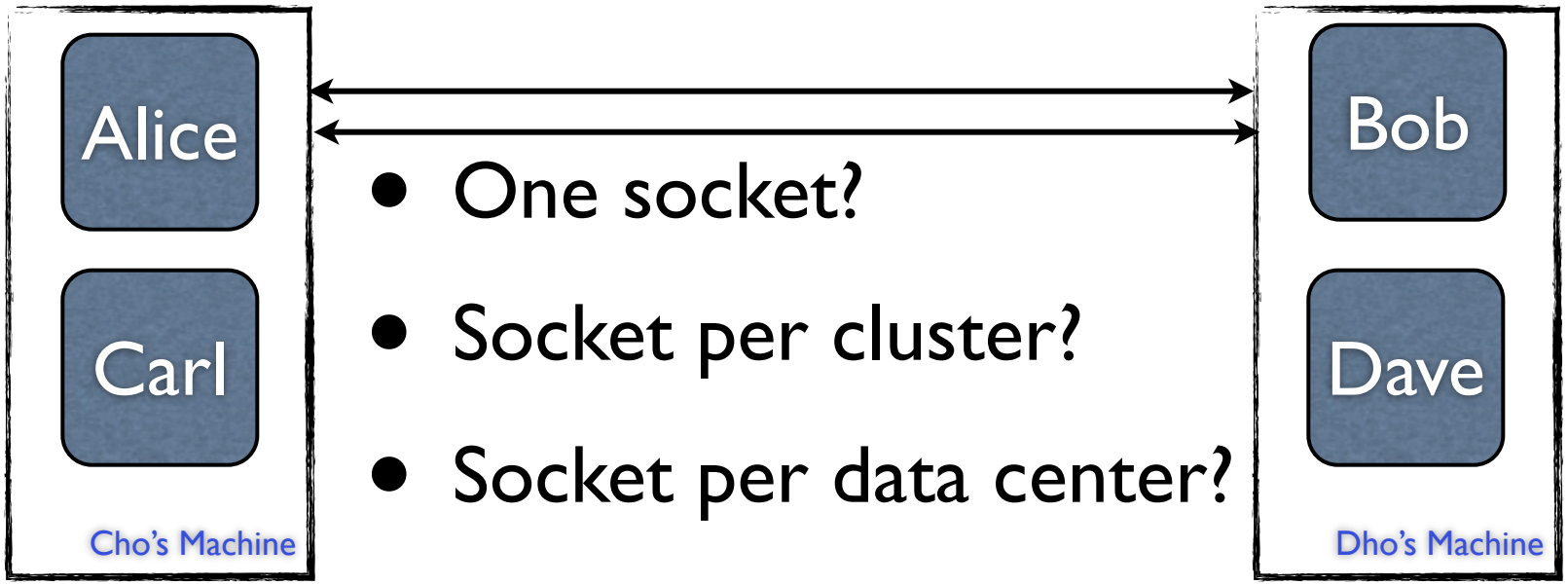
- Without DNA:
  - Two sockets per domain pair
  - Remember: identity tied to connection
- Cho and Dho both host many domains
  - Example: 10k * 10k * 2 = **200M** sockets!
  - >one should be deployment choice

DNA: Scale



Cho: I'm Alice
Dho: Prove it!
Cho: Here's my AC
Dho: Hiya, Alice!
Dho: I'm Dave
Cho: Prove it!
Dho: Here's my AC
Cho: Hiya, Dave!

Deployment Choice



- One socket?
- Socket per cluster?
- Socket per data center?
- 10 sockets, for queuing?