Draft-art-tigress

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Some Terms

- Digital Credential:
  - Cryptographic Material and Other Data that enables access to Property using Mobile Devices
- Verticals:
  - Standards and bodies that cover different types of properties (Cars, Homes, Hotels etc.)
- Provisioning :
  - Process of getting a Credential on a device
- Provisioning Information :
  - Necessary and sufficient data to complete Provisioning

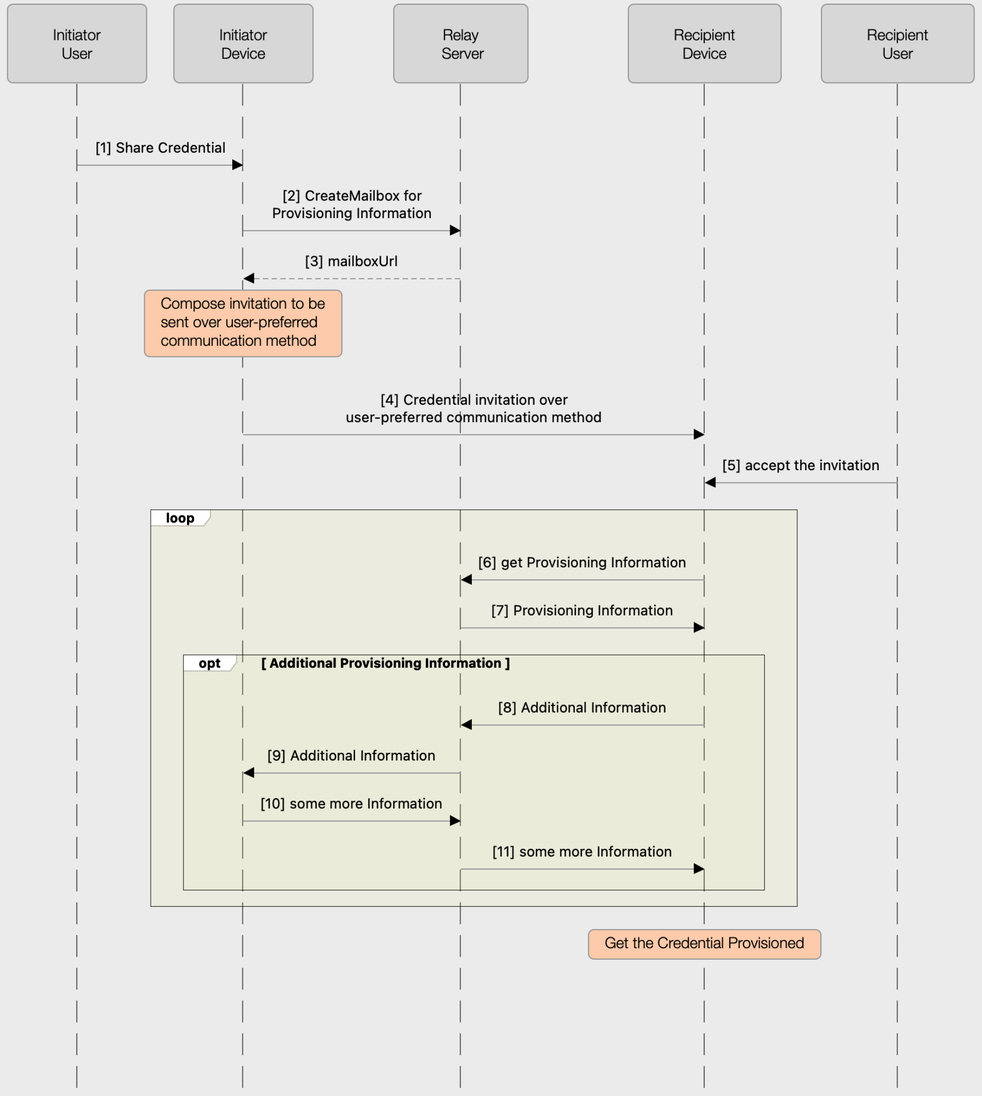
Sharing Credentials

- Once you have a Credential, sharing it to others is a natural use case.
  - Examples:
  - Sharing your car Credential over Instant Messaging
  - Sharing your Hotel Credential over Email
- Important to provide convenient and seamless user experience
  - Similar to sharing other digital assets like photos or document

Unique Requirements

- Round trips between Initiator and Recipient without user interaction
  - Users may not be online at the same time
- First Recipient device to claim share is the only device that gets Provisioning Information
- Invitation to share goes over existing communication methods that users prefer
  - No security or privacy properties can be assumed about the communication methods.
- Security and Privacy for Provisioning Information while in transit between Initiator device and Recipient Device.

Simplified Credential Sharing Flow



Solution : Relay Server

- Define a new transport (Relay Server) based on HTTP / REST
- Complexity handled by Relay Server
  - Unique Mailbox creation and lifecycle management
- Guarantee uninterrupted data exchange without relying on Invitation Communication method
  - Bind Initiator Devices to mailbox at time of creation
  - Bind Recipient Device to mailbox at time of first redemption.
  - Thus creating a tunnel between Initiator device and Recipient Device
- Privacy by design - not requiring user identity to transport Provisioning Information

Provisioning Information Structure

- Provisioning Information format differs by Verticals.
- A generic structure defined using JSON to pack Provisioning Information in encrypted form
  - Allows clients to create and consume information easily.
  - Works for all Verticals.
- A single message (shareURL) that can be sent over user-preferred channels (WhatsApp, SMS, email, etc.)
- Preview information recognized by messaging applications - OpenGraph + html

Seamless User Experience

- A single ShareURL used for multiple purposes
    1. Fetch share preview to display to User,
    2. Read encrypted Provisioning Information,
    3. Update encrypted Provisioning Information
- Example ShareUrl: (https://{RelayServerHost}/v{ApiVersion}/m/{MailboxIdentifier}?v={CredentialVertical})
- Push Notifications delivered to user devices during round trips

Deployments

- Entire solution (Relay servers, client applications) is deployed in the market by industry
- At least one Vertical is sharing Credentials over the deployed solutions.
  - Note that Vertical involves various companies that manufacture the type of property.
- More Verticals can start sharing Credentials soon.
- More industry partners are in the process of deploying Relay Servers to unlock more use case.