TagAlong: A Free, Wide-Area Data-Muling Service Built on the AirTag Protocol

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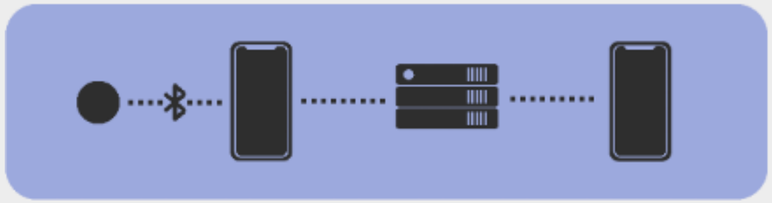
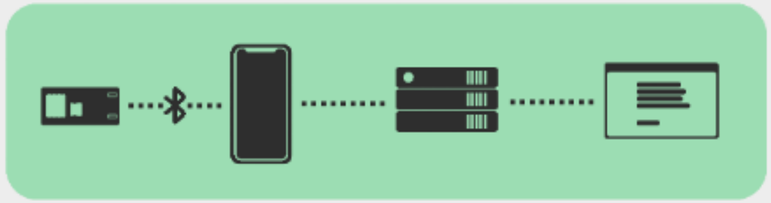
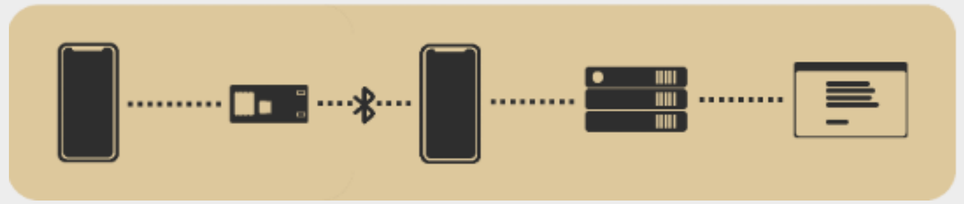
AirTag's Implementation



Positive Security's Implementation



TagAlong



Data-Muling on Apple's AirTag Protocol

Apple's Find My protocol, most well known as the underlying protocol of the AirTag, presents an opportunity for arbitrary data-muling and location services. This provides a new "infrastructure-free" deployment option, where areas with frequent human activity can take advantage of this zero-cost backhaul network. We leverage Apple's Find My network and Positive Security's Send My and DataFetcher applications to display the potential usage of smartphone infrastructure to ferry data from embedded devices.

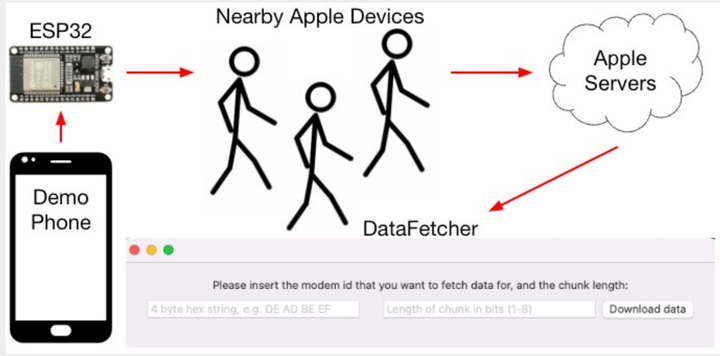
Implementation

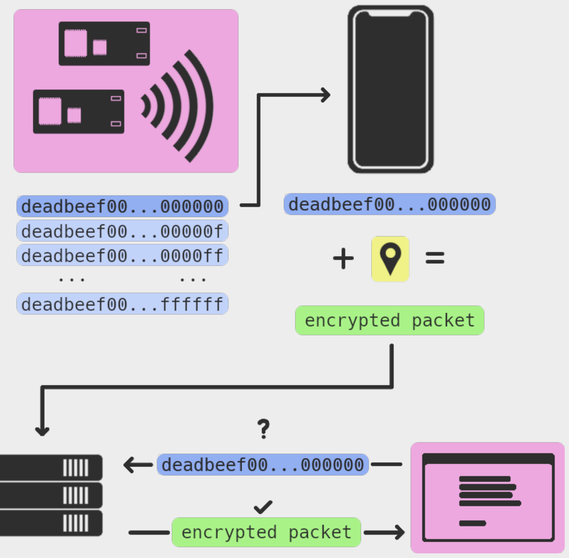
- We modify the Send My and DataFetcher applications to implement our TagAlong protocol
- We build an application on a demo phone to transmit custom message
- From end-to-end, we show that we can use Apple devices as a data-muling service for IoT devices

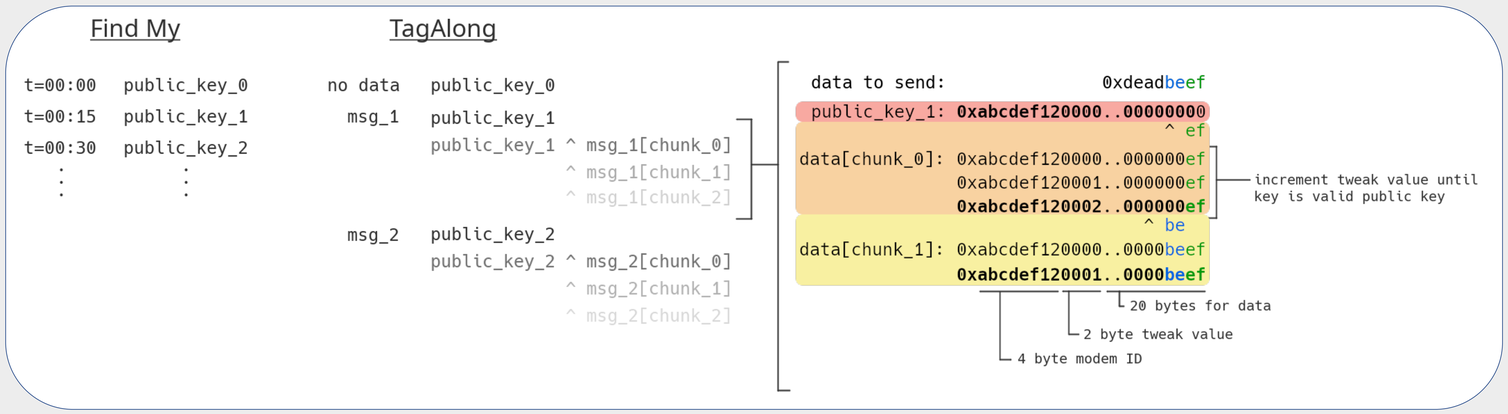
Try TagAlong with Our Device

- Type in a message into the text box of our app on our demo phone
- Press the send button to transmit the message to the ESP32
- Watch the message appear ~10-15min later in the DataFetcher application

	AirTag	Send My	**TagAlong**
Unlimited Devices	Y	N	**Y**
Unlimited Messages	N	N	**Y**
Arbitrary Data Transmission	N	Y	**Y**
Performance	N/A	3 bytes/second	**12 bytes/second 97% Reliable**







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