# FDO Discussion

4-28-2022



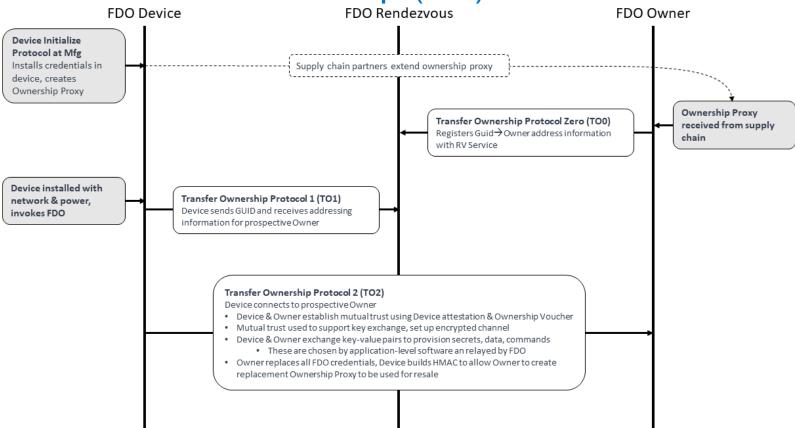
## FIDO Device Onboarding (FDO)

- Device onboarding = Transfer of ownership = installing secrets and configuration data
- FDO provides "late binding" when the device is powered on at end user site
- Supports closed network with local Rendezvous Server
- During manufacturing, a FIDO Device configured with:
  - Restricted Operating Environment (ROE)
  - FIDO Device Onboard application running in ROE with device credentials
  - Rendezvous information for current owner of the device (i.e. manufacturer)
  - Ownership Voucher
  - (Optional) HWROT MCU for monolithic system image or TPM

#### Issues with FDO

- Since UEFI is not a supported ROS it presumes the DPU has a supported ROS installed with FDO support prior to onboarding. Meaning another ZTP step is required before FDO or could drive separate solution SKUs for same DPU HW.
- Additional burden on DPU vendor or OEM to install FDO support at manufacturing including provisioning initial ownership and supplying ownership voucher with purchase.
- The manufacturing process would need to include service stock/spares that are shipped outside of a server.

### FDO Transfer of Ownership (TO)



#### FDO Ownership Voucher

Device has

possession of:

A.PublicKey

Device can authenticate

one end of

Ownership Voucher

Internal signatures create chain from Manufacturer credential to Owner credential Manufacturer A signs Distributor B signs Retailer C signs [ GUID, B.PublicKey, [ GUID, C.PublicKey, [ GUID, D.PublicKey, Device info ] Device info ] Device info ]

Owner D has possession of:

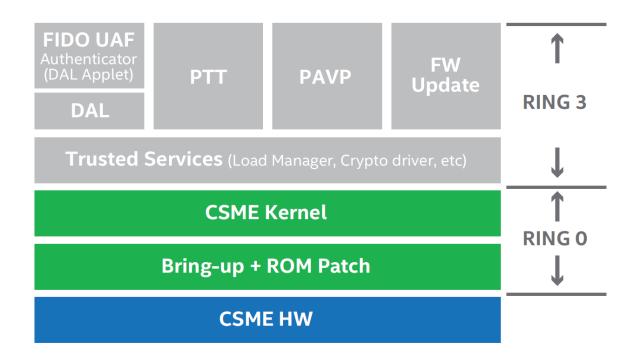
D.PublicKey
D.PrivateKey

Owner can authenticate other end of Ownership Voucher

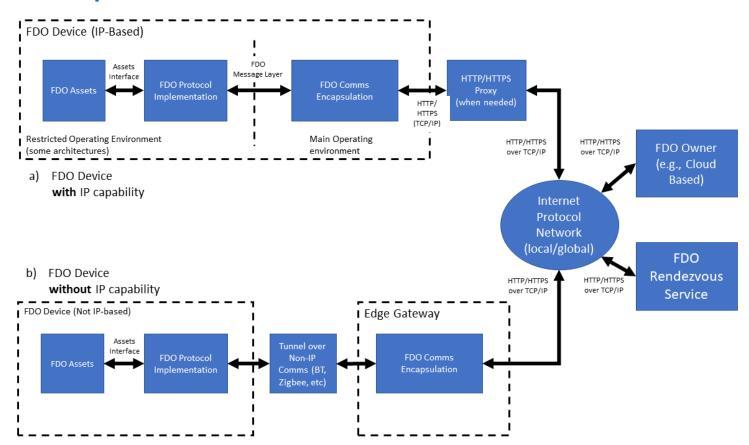
Ownership Voucher

# Backup

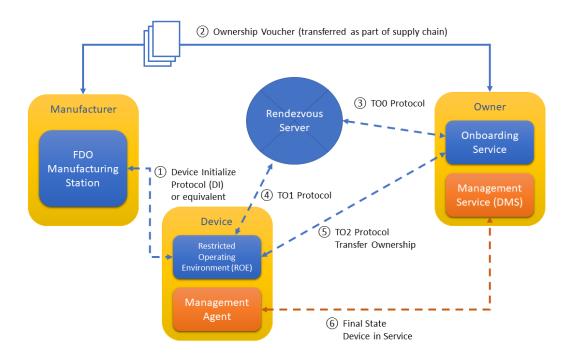
#### FIDO Stack



### FDO transport



# FIDO Device Onboarding



#### Reference

- FDO Device Onboard Spec <a href="https://fidoalliance.org/specs/FDO/">https://fidoalliance.org/specs/FDO/</a>
- FIDO Support on Intel Platforms <a href="https://www.intel.com/content/dam/www/public/us/en/documents/white-papers/hardware-for-strong-authentication-white-paper.pdf">https://www.intel.com/content/dam/www/public/us/en/documents/white-papers/hardware-for-strong-authentication-white-paper.pdf</a>

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