

# Standards, Technical and Operational Considerations for IoT Device Onboarding and Lifecycle Management

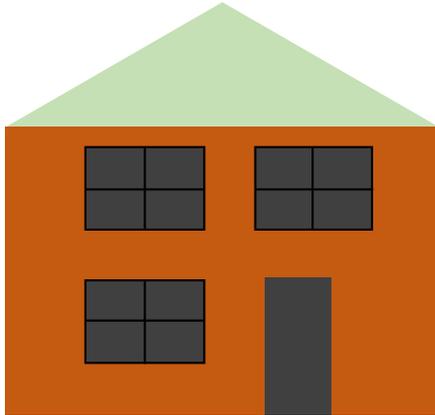
Eliot Lear

# How to get a device on a network



# Who is all this for?

Consumer



Enterprise



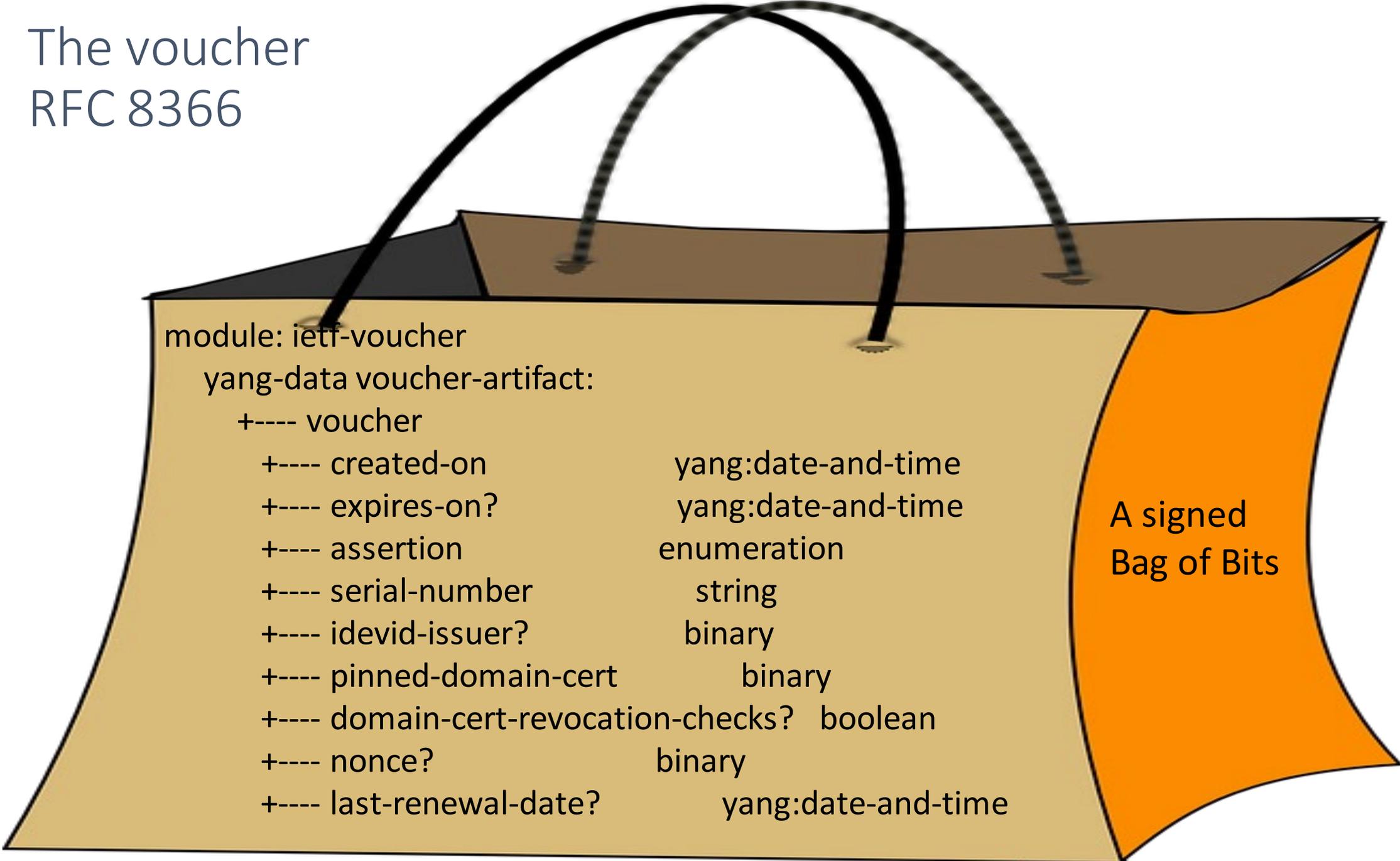
Industry



No Expertise	Lots of IT Expertise	Lots of OT expertise
Internet is present	Internet may be present	Don't bet on Internet
Small number of devices	Many devices	Many devices
Needs zero touch	Wants zero touch	Needs zero touch
Retail supply	Professional channels	System integrators
Steady state WPA-PSK	EAP	Maybe some EAP

# The voucher

## RFC 8366



```
module: ietf-voucher
yang-data voucher-artifact:
+---- voucher
+---- created-on          yang:date-and-time
+---- expires-on?       yang:date-and-time
+---- assertion          enumeration
+---- serial-number      string
+---- idevid-issuer?     binary
+---- pinned-domain-cert binary
+---- domain-cert-revocation-checks? boolean
+---- nonce?            binary
+---- last-renewal-date? yang:date-and-time
```

A signed  
Bag of Bits

# Or a proof of knowledge

I've got the matching private key



I've got your public key



# So what's there?

	Public / Private key	Voucher
Needs Internet?	No	Mostly
Zero touch?	Yes, with help	Yes, with help
Proof of ownership	No	Yes
Complexity for manufacturer	Some	Lots
Supply chain handling	Easy	Hard