Provisioning of IoT devices: Home Routers

Provisioning Initial Device Identifiers into Home Routers

draft-richardson-homerouter-provisioning-00

Michael Richardson
<mcr@sandelman.ca>

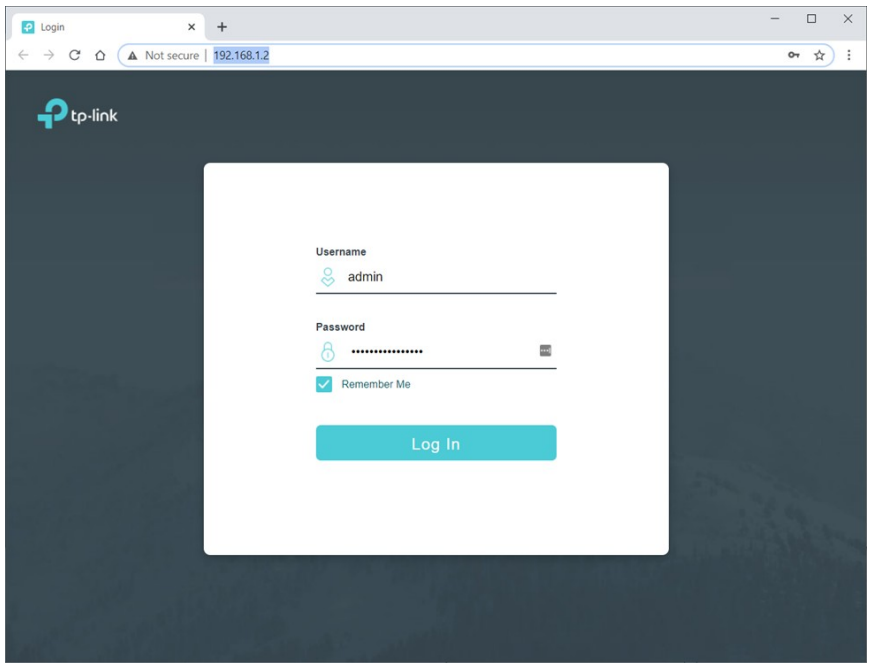
Motivation

- Insert “Murai” story (now close to 5 years ago!)
- admin/admin password is not good enough, but as soon as one does better, malware might collect/observe http. How?
  - ARP spoofing of 192.168.1.1 is trivial, and even used intentionally to add VPN-security
- Implementation of t2trg-idevid-considerations, anima-masa-considerations document

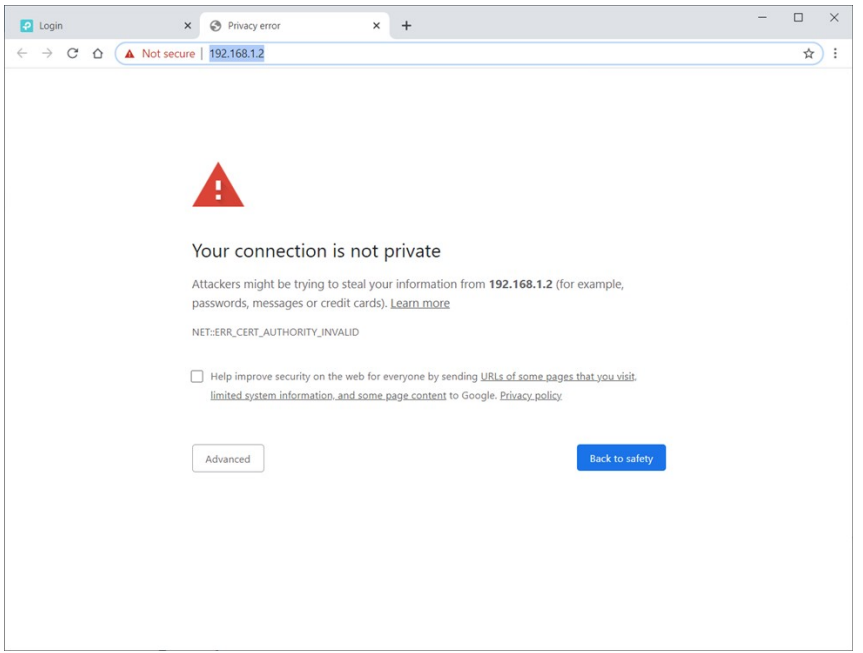
Motivation (2)

vs

Implicitely Insecure

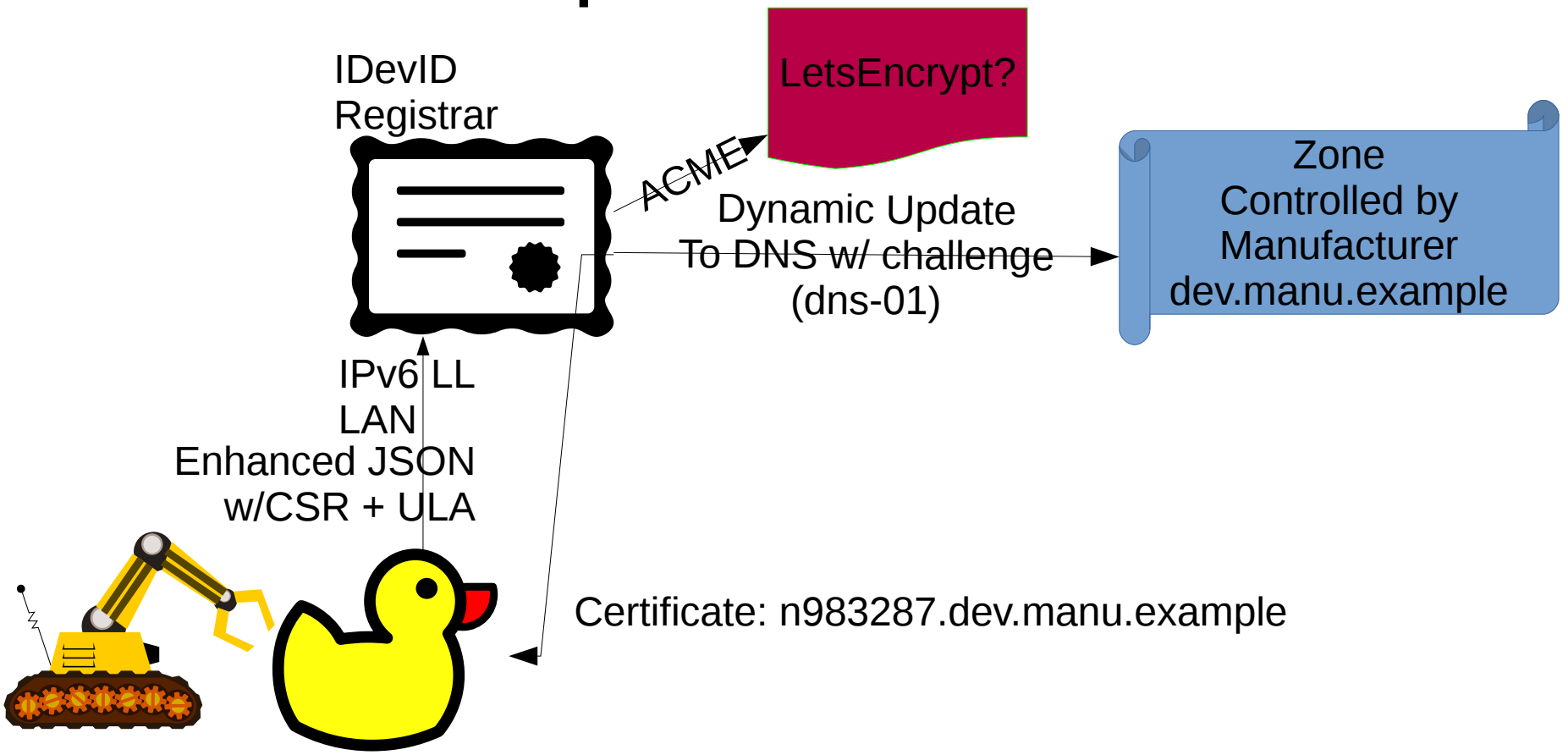


Explicitely Insecure

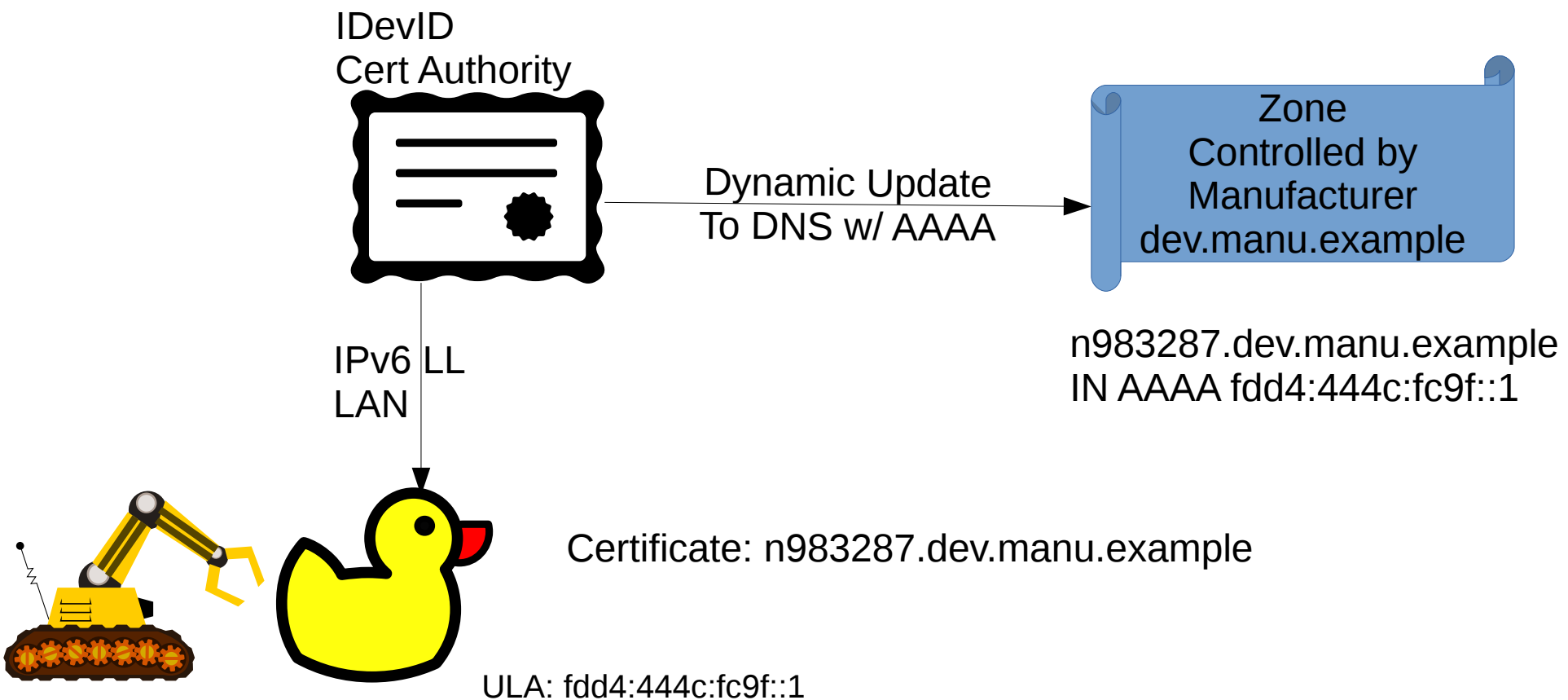


These images from IoTSF ManySecured

Solution Outline part 1: put IDevID in



Solution Outline part 2: populate DNS with name

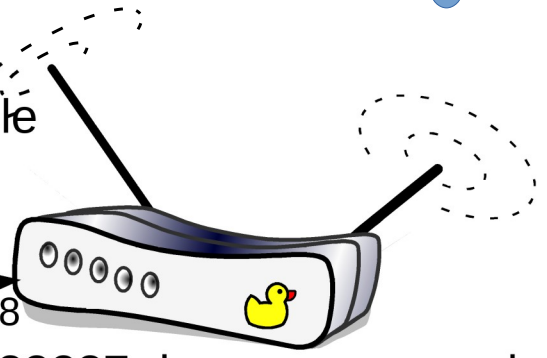


Solution Outline part 3: deployment

Zone Controlled by Manufacturer
dev.manu.example

https://n983287.dev.manu.example

ULA: fdd4:444c:fc9f::/48



n983287.dev.manu.example
IN AAAA fdd4:444c:fc9f::1
Also in /etc/hosts

Issues

- Expiry of Certificate while device in in the box
  - Requires online renewal when device online
  - What is device needs human intervention to get online?
- Unwillingness of some browsers to do IPv6 lookups
  - Hack, also include 192.168.1.1 in /etc/hosts ICK.
  - May be limited to Alphabet browsers/systems

Conclusion

Needs some work

Co-authors sought

Some overlap with DANISH (maybe)