DNSSEC Signer Implementation Hardware

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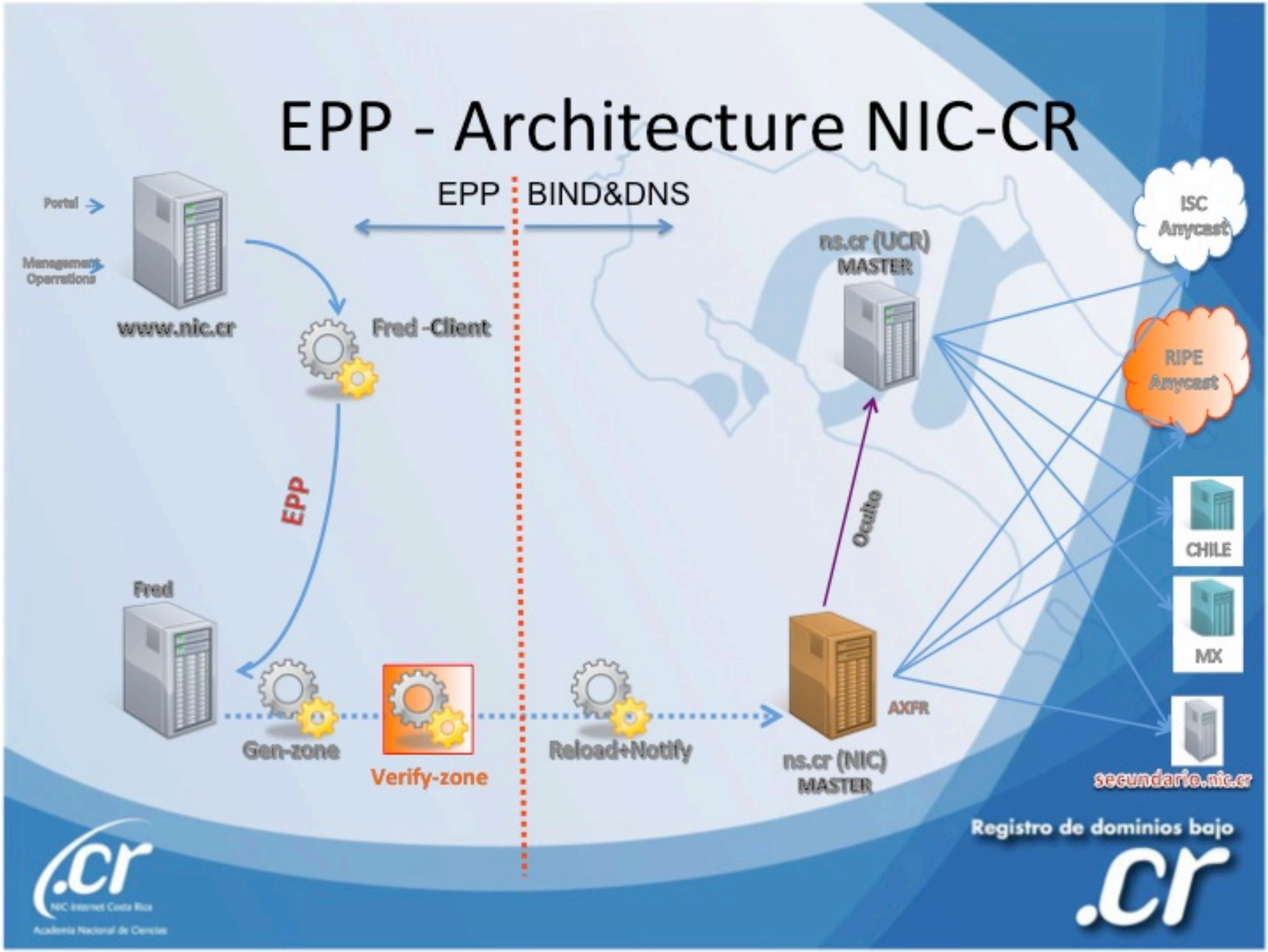
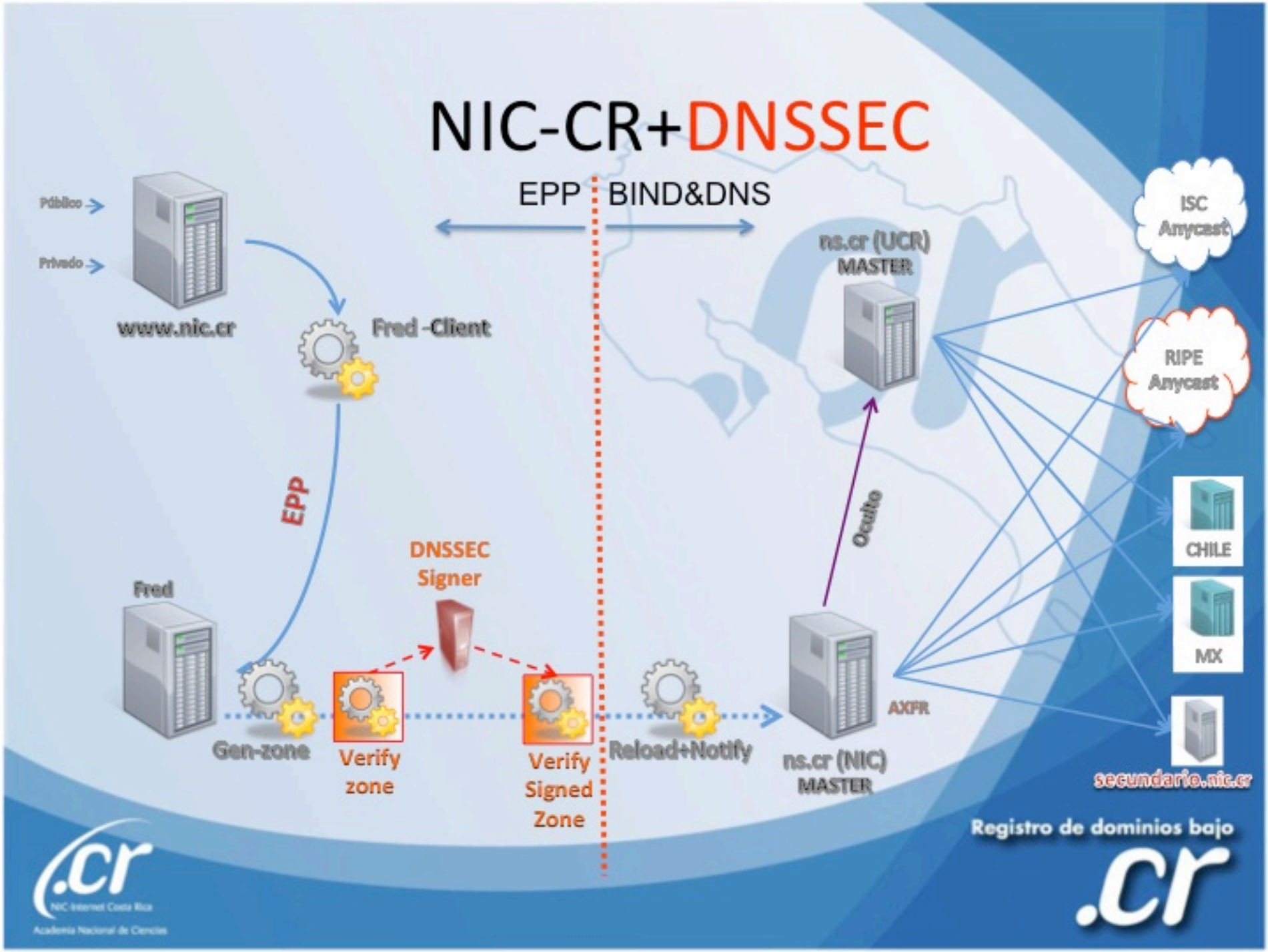
EPP - Architecture NIC-CR




NIC-CR+DNSSEC
EPP
BIND&DNS
Público
Privado
www.nic.cr
Fred -Client
EPP
Fred
DNSSEC
Signer
Gen-zone
Verify
zone
Verify
Signed
Zone
Reload+Notify
ns.cr (UCR)
MASTER
Oculto
ns.cr (NIC)
MASTER
AXFR
ISC
Anycast
RIPE
Anycast
CHILE
MX
secundario.nic.cr
Registro de dominios bajo
.cr
NIC Internet Costa Rica
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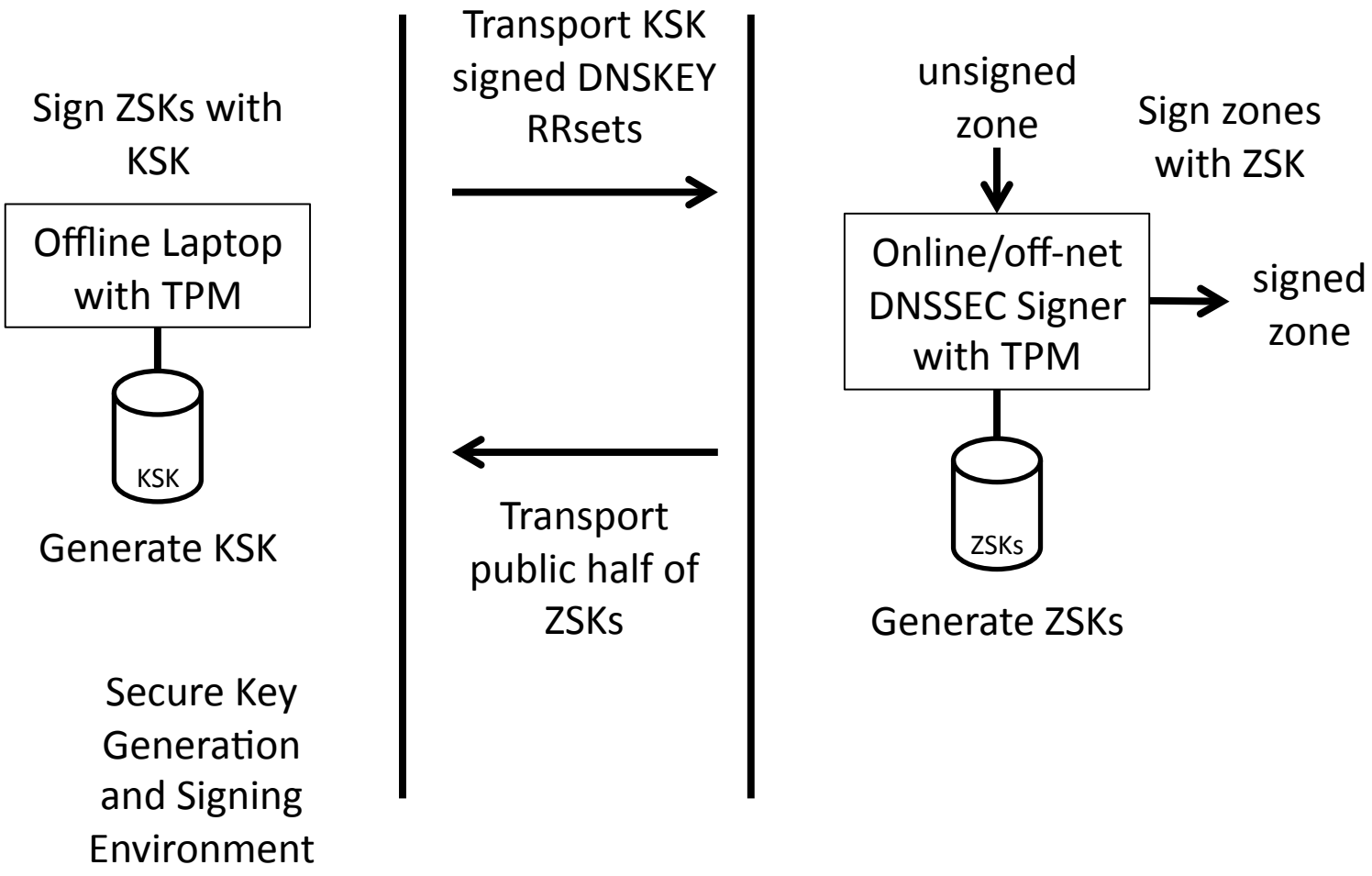
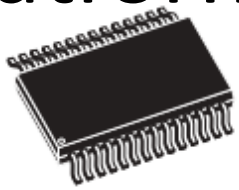
Key Management



A little about the Trusted Platform Module (TPM)



- Easy to obtain crypto. Built in standard H/W
- Supported by open source software
- Not fast (~1 RSA 1024 sig/s) but may be sufficient and theoretically capable ~10x
- Built in H/W RNG
- PKCS11 interface simplifies upgrade to HSM

TPM Trousers/opencryptoki Framework

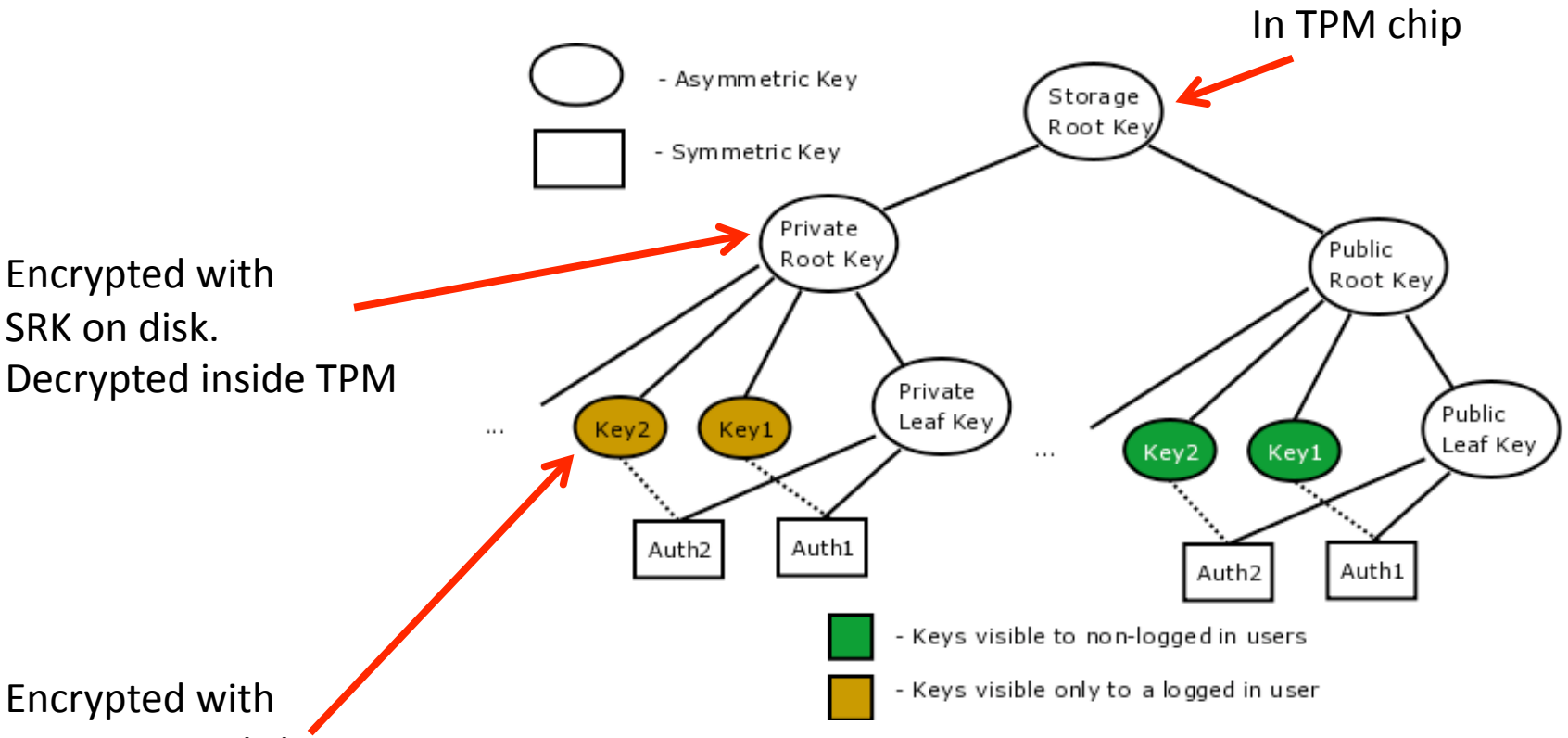


Diagram courtesy Kent Yoder

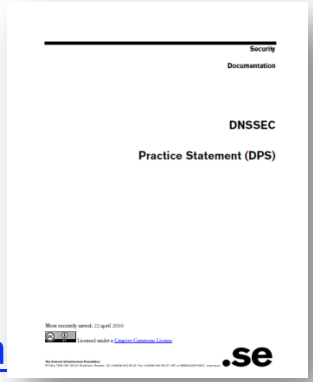
From http://trousers.sourceforge.net/pkcs11.html

Pros and Cons

- Cons
  - Slow speed
  - H/W Driver support
  - Non-obvious key management framework
- Pros
  - Easy to obtain
  - “free”

Other Resources

- TPM links
  - Trousers http://trousers.sourceforge.net/pkcs11.html
  - opencryptoki http://www.ibm.com/developerworks/linux/library/s-pkcs/
- PKCS11 spec
  - http://www.rsa.com/rsalabs/node.asp?id=2133
- DNSSEC Practice Statement (DPS)
  - Spanish Draft
  - Original .SE https://www.iis.se/dl/DPS-PA9-ENG.pdf
  - RFC draft http://datatracker.ietf.org/doc/draft-ietf-dnsop-dnssec-dps-fra



- Some source code
  - Bind modifications
  - pkcs11 tools

Questions?