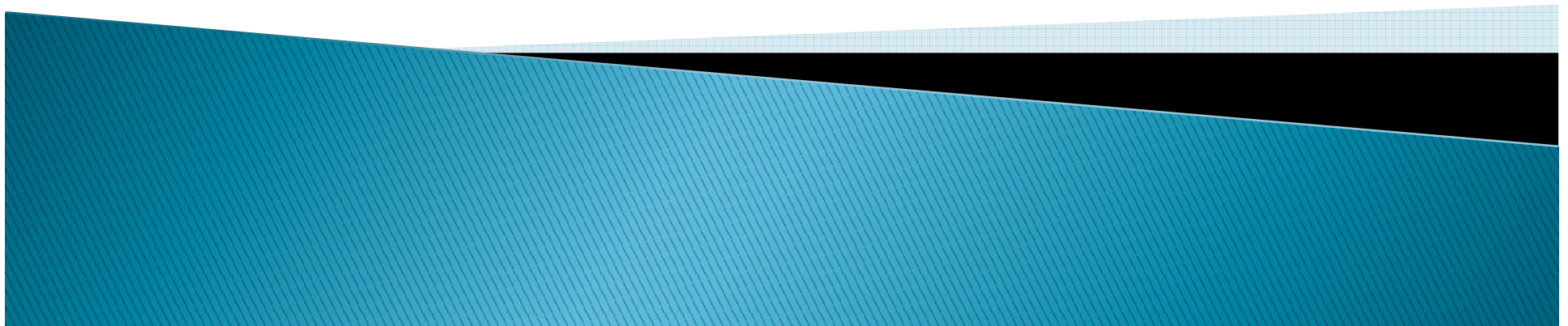# Technologies & Privacy
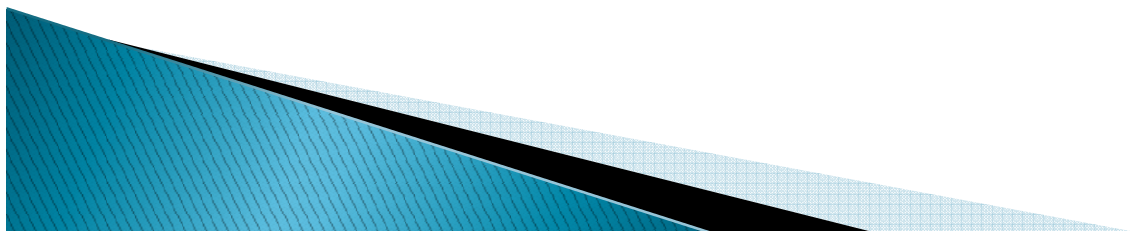
The 1st Technology and Civil Rights Conference
31-07-2012
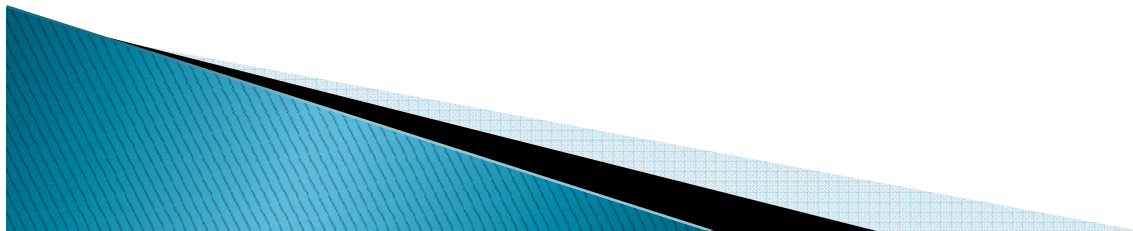
Introduction

- Privacy on Internet
- IPv6 overview
- IPv6 Vulnerabilities
- IPv6 Identity
- RFID – NFD overview
- Google Wallet case study

Privacy on Internet

- Personal information
- Financial information
- Communication information
- Access/Usage information
- Personal identity

IPv6 Overview

- 32 bits address
- 4.29×10^9 IPs
- IANA depletion: Jan-11

- 128 bits address
- 3.4×10^{38} IPs
- World IPv6 Launch Day: 06-06-12

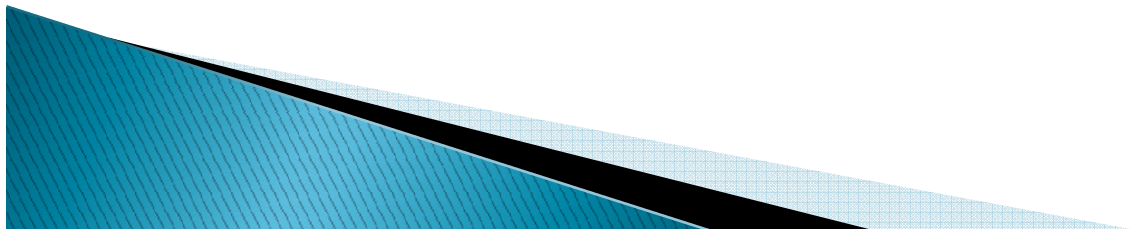
- Ex: 112.68.229.32

- Ex: 2001:db8:85a3:42::8a2e:370:7334

IPv4	IPv6

IPv6 Overview
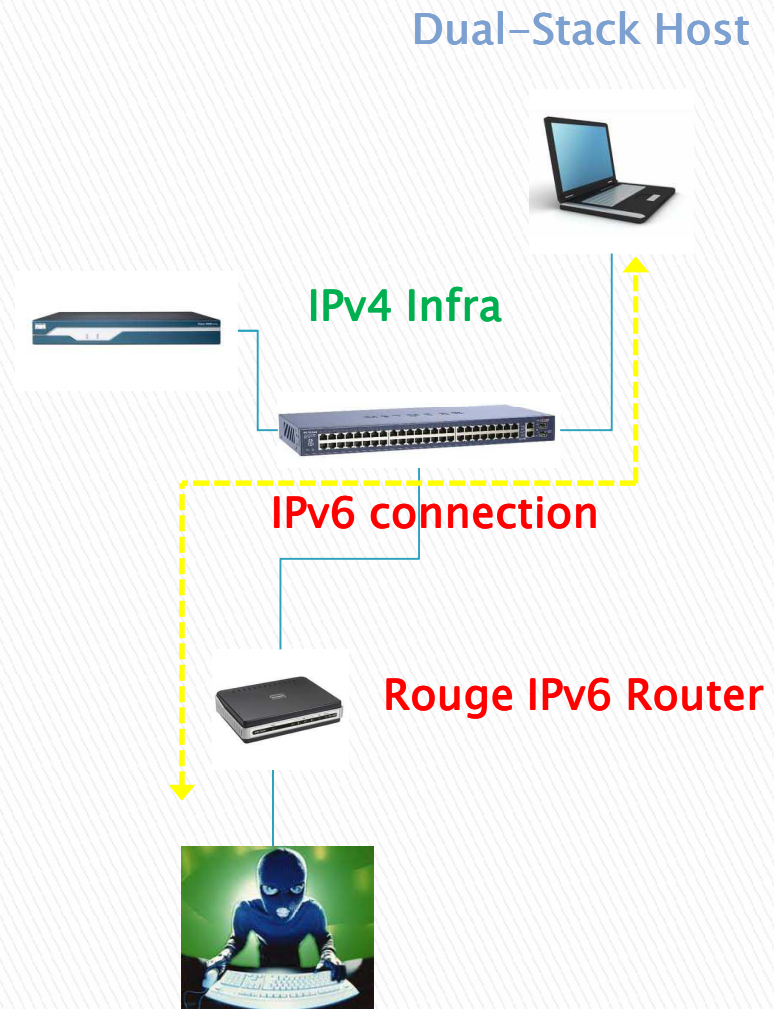
Why v6?

- More addresses
- Simplified header
- Integrated security & mobility
- Privacy
- Auto configuration – EUI64
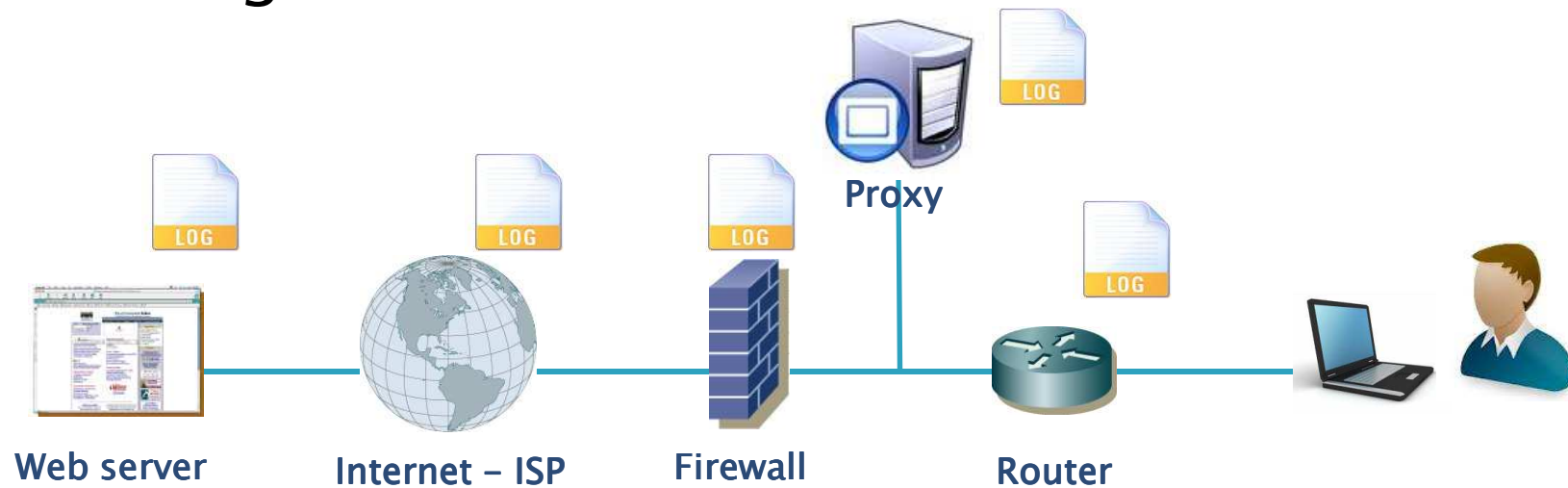- Migration techniques: dual-stack, ISATAP & Teredo Tunneling, NAT64

IPv6 Vulnerabilities

▸ Automatic Tunneling – Teredo

▸ Rogue Router Advertisement – Dual-Stack & Auto Configuration
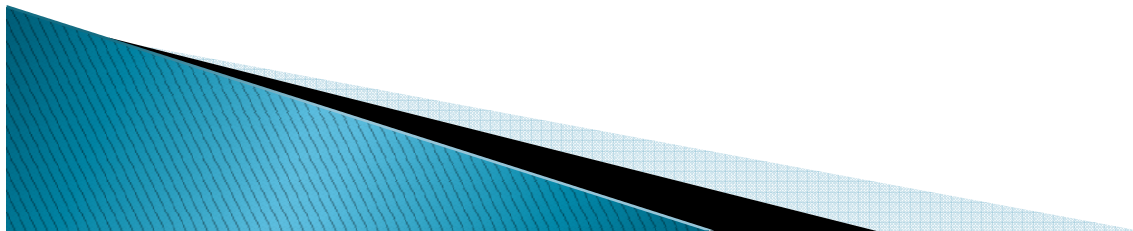
▸ Others: Routing header type 0, Quad A DNS flush

Dual-Stack Host

IPv4 Infra

IPv6 connection

Rouge IPv6 Router

IPv6 Identity

- IPv6 – global unique IP address
- NAT boundary – NAT64
- IP address allocation – DHCPv6, Auto configuration
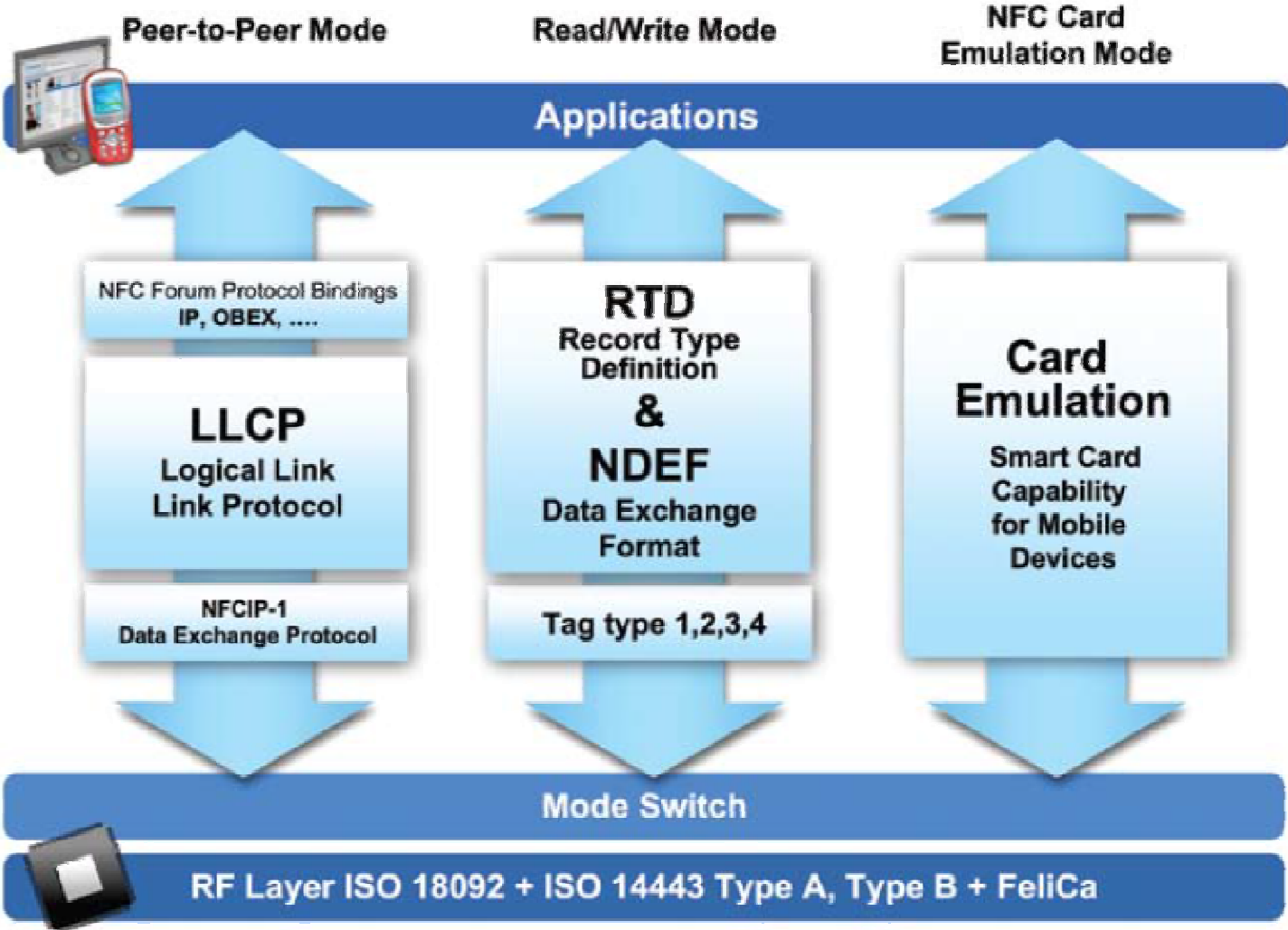

Web server   Internet – ISP   Firewall   Proxy   Router

RFID - NFC

- NFC – Near Field Communication
- RF connectivity technology that enables communication between 2 electronic devices
- RFID – reader only
- NFC – reader and tag or even peer-to-peer data transfer
- NFC Devices: i.e. Android/Smart phones/BlackBerry, iPhone 5 – ???

RFID – NFC

Google Wallet Case Study

- Google Wallet – Store credit card and loyalty card information in Android phone
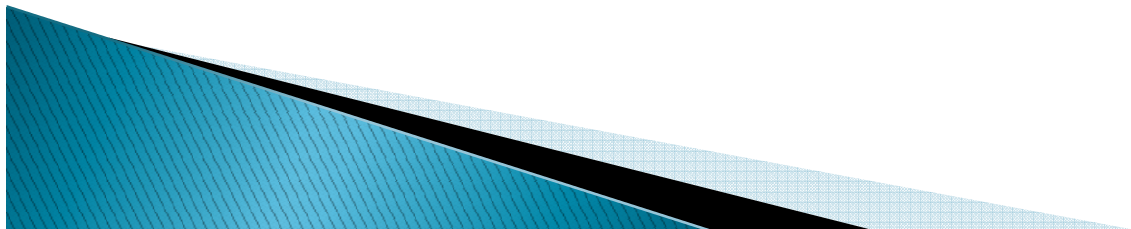
Google Wallet Case Study

Consideration

▸ Where is your data kept?
  ◦ Google Wallet stores credit data in separate places, some of which are well secured, some of which are entirely exposed - viaForensics
▸ Is Android strong in security?
  ◦ No!
▸ My PIN is kept secretly only for myself.
  ◦ Are you dreaming? Google Wallet PIN Crack

viaForensics Report
https://viaforensics.com/resources/reports/mobile-security-risk-report/
Google Wallet PIN Crack
https://www.youtube.com/watch?feature=player_embedded&v=P655GXnE_ic

Technologies & Privacy

Q&A