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# FUTURE INTERNET ARCHITECTURE

Marc Mosko

Palo Alto Research Center

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Protocol	Feature

Today's

# INTERNET ARCHITECTURE\*

Protocol	Feature
IPv6	Large address space, auto-configuration, multicast, anycast, fast forwarding/routing, dynamic path MTU, mandatory security support (encryption and authentication).
QUIC	Multiplexed connectionless stream transport with TLS 1.3, multipath, mobility, efficiency
TLS 1.3	Secure PKI-based key exchange and encryption for QUIC
HTTP/2	Request/response protocol on names with push
LISP	Map & encap Endpoint IDs (e.g. public key, name prefix, GPS coordinate, etc.) to routing locators (RLOCs, e.g. IPv6), supports mobility, multi-homing, make-before-break.
OSPFv3/BG Pv4	Routing protocols to distribute RLOCs
ISAKMP / IKEv2	Secure key exchange between RLOCs
DRM	End-to-end encryption and access control

\* Nilo Mitra also recently presented a list like this

# FUNDAMENTAL QUESTIONS

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- Why and how is ICN better than today's Internet?
  - Justify the forklift upgrade to an ICN layer 3.
  - Quantify why it cannot be done over today's Internet.
- Need to nail down the Layer 3 protocol

Data plane	Internet scale routing	Management
Discovery	Hardware	Diagnostics
APIs/Libraries	Transport protocols	Privacy
Off-path replicas	Migration plan	
- When will it be ready?
  - Compare to the Internet then, not yesterday's or today's.
  - If ICN needs new hardware, how feasible is it? When could it be ready? How much better would IP HW be with same tech?