

# Minimum IPv6 Functionality for a Cellular Host

<ietf-manyfolks-ipv6-cellular-host-02.txt>

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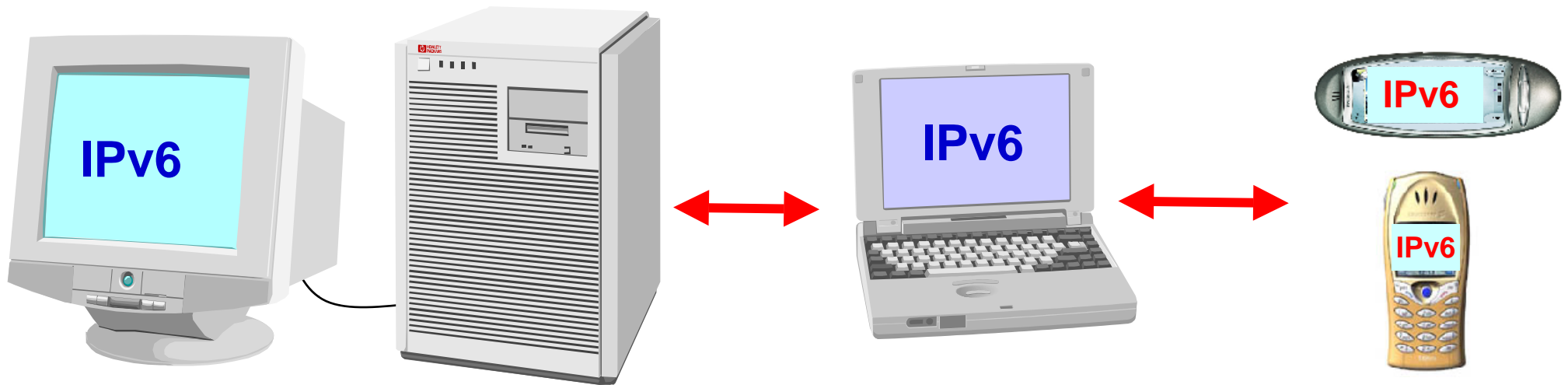
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Salt Lake City**

# Contents of this presentation

- Introduction
- Motivation & Time Pressures
- Changes
- Open Issues
- Next Steps

# There are IPv6 hosts *and* IPv6 hosts



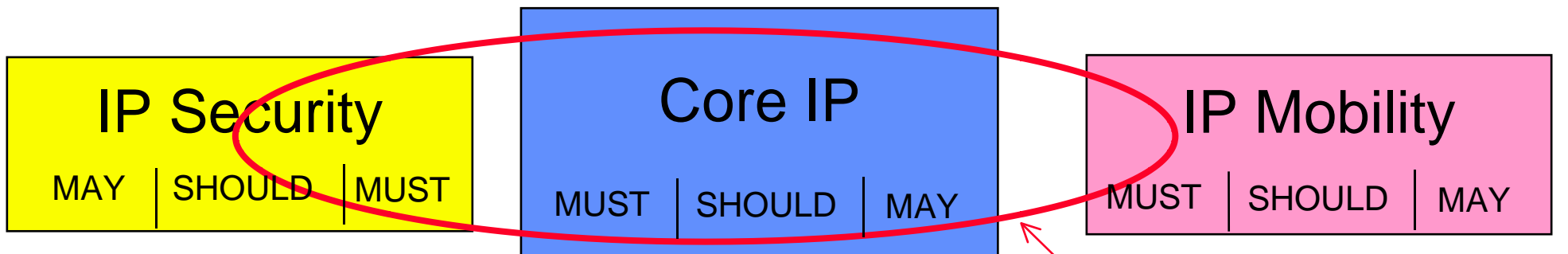
- Very big differences can be found when comparing these IPv6 hosts with respect to size, weight, memory, processor capacity, power consumption / battery capacity and upgradeability.

# Motivation

- An aid for those in the IP community wishing to know the constraints and applicability of IPv6 in cellular devices.
- An aid for those in the cellular community who need more of an understanding of IPv6.
- We intend to specify the whole IPv6 cellular host functionality, not just link specifics.
- The draft is intended for various types of cellular devices & networks.
- We try to cover working with networks that are and are being deployed (to some extent).

# Format of the draft

- The draft defines three functionality groups:
  - Core IP includes core parts of IPv6 - it contains RFCs needed in basic situations.
  - IP Security contains Security details for cellular hosts.
  - IP Mobility contains IP Mobility details for cellular hosts.
- The functionality groups are written to enable the implementation of different types of cellular hosts, which may have different uses.
- In some cases we show how to resolve conflicts between IPv6 specifications and cellular network functionality.



# History of IPv6 in 3GPP

- IPv6 was introduced as an option starting in 3GPP Release 97 for GSM / GPRS specifications.
- A wider support for IPv6 started with 3GPP Release 99.
- IPv6 is specified as the **ONLY** IP version supported in Release 5 for IP Multimedia Subsystem (IMS).
- 3GPP Release 99 and Release 4 specifications are frozen and were used as the basis for this work.
- Any changes (which effect this work) to current IPv6 or 3GPP specifications will be considered as they occur.

# Time pressure

- Operators are currently deploying / piloting 3G networks.
- Expectation that 3G terminals will start to come to the market in 2002 - the support for IPv6 is also expected shortly.
- The 3GPP Release 5 specification deadline is March 2002.
- Putting IPv6 on cellular terminals is somewhat more complicated than your average OS.
  - The cellular terminal software typically has no or very low upgradeability.

# Changes Since Last IETF Meeting

- Version 02
  - Internet Key Exchange: Added recommendation on interaction between ICMPv6 and IPsec Policy.
  - Mobility support in IPv6: added a discussion on whether or not the cellular host should support the Home Address Option.
- Version 01
  - Introduction: Extended clarification of the purpose and goals of the draft.
  - RFC1981 - Path MTU Discovery for IP Version 6: cleaned-up text.
  - RFC2711 - IPv6 Router Alert Option: Added "Since the cellular host will not function as a router, the receiver side of the Router Alert Option can be omitted even in case the Router Alert Option is supported."
  - Privacy Extensions for Stateless Address Autoconfiguration in 3GPP: Extended the explanation on why the RFC3041 MUST NOT be supported in 3GPP.
  - Security Considerations: Added text on prepaid cellular subscriptions and on local wireless network interfaces.
  - Appendix B - Transition Issues: Added discussion on RFC 2529.

# Open issues with MIPv6

- There are some open issues with regards to MN Functionality, CN Functionality, Route Optimization (HAO, BU ...) in the Mobile IP Working Group.
- Home Address Option
  - Original intention was to support Home Address Option
  - Current discussions indicate that HAO could be used in denial of service attacks.
  - It is currently uncertain what will be done.
  - How to proceed?
- Irrespective of how we handle this issue, when the solutions to the outstanding issues with MIP are found, we will update the draft/RFC.

# Open Security Issues

- Might need to have wireless profile for IPsec / IKE as a separate draft.
- Wireless TLS has been discussed in the TLS working group.

# Draft dependencies

- Critical
  - “Default Address Selection for IPv6”
  - “Mobility Support in IPv6”
- Non-Normative / Less-Critical
  - “Fast Handovers for Mobile IPv6”
  - “Hierarchical MIPv6 Mobility Management”
  - “TCP over 2.5G and 3G Networks”
  - “Dynamic Host Configuration Protocol for IPv6 (DHCPv6)”

# Open issues

- Is more explanation on 3GPP Releases needed?
- Should requirements from different 3GPP releases be marked as such?
- Is discussion on DNS discovery needed? If so, this will add another dependency to the draft.
- How to handle dependencies on other Internet-Drafts referenced in this document.

# Next Steps

- Questions / comments?
- 3GPP prefers that this is a WG document.
- Can this document be considered a Working Group document?

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