The University of New Hampshire
InterOperability Laboratory
(UNH-IOL)

6MAN Working Group
IPv6 Update/Change Implementation
report

www.iol.unh.edu
• IOL gathered 10 routers and 10 hosts from 10 different companies with unique implementations.

• Routers were typically Enterprise/Core Routers, Switches, and Firewalls.
  ◦ Included a Virtual Router.

• Hosts were Operating Systems, Data Storage, and Printers.
  ◦ Included an NTP Server.
• For each device, we looked at two areas Interoperability and Conformance to the standard.

• Interoperability
  o For each Major change we determined if there was Interoperability issue between devices.
  o Includes older implementations.

• Conformance
  o Looked at results from IPv6 Ready testing (ie. IOL INTACT) to determine if there are potential issues.
• Does the Flow Label get forwarded by default?
• All the Routers we looked at were both Conformant and Interoperated.
  ○ In the past, say 10 years ago, we found other Routers just cleared the flow label that seems to no longer be the case.
• IPv6 Ready Logo already requires this errata.
• The Errata was due to a vendor not agreeing with the test case as written. (IPv6 Ready brought this issue to 6MAN).
• All implementations were both Conformant and Interoperate.
• The text for what to do in the case of receiving an MTU less than 1280 was removed.
• No Conformance issue since there is no text.
• Every implementation we looked at drops the link MTU to 1280.
  ◦ The Packet the test sends is 1280 so they all include a fragment header.
• 2460bis changed Hop-by-Hop from a MUST to SHOULD
• IPv6 Ready Logo requires support for HOP-by-Hop.
• All implementations support Hop-by-Hop therefore are Conformant and Interop.
Overlapping Fragments

• Checks overlapping fragments and drops them.
• There isn’t any existing test for this.
• Will need to create a test for checking duplicate and overlapping fragments.
• The limited device we did test, didn’t show any sign of dropping the overlapping fragments.
• 4291-bis updates to recommend not using EUI-64.
• Devices that base the Interface ID on the eui-64.
  ◦ Router’s doesn’t apply since it’s manually configured.
• 2 Operating Systems support private address by default.
• 8 Other Host always used the EUI-64.
• 1981bis updates
• Removed the less then 1280 note, so the issue described above in 2460bis applies here also.