

Requirements for IPv6 Routers

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Purpose

- Take advantage of the v4/v6 transition to think through changes in the 'net architecture
- Provide a set of suggestions from providers to implementers around IPv6 support

Organization (1)

- Review of the Internet Architecture
 - Robustness principle, Complexity, Layered Structure, Routers
- Requirements related to device management and security
 - Programmable device access (YANG primary, SNMP secondary)
 - Human readable device access (SSH default)
 - Zero Touch Provisioning (SLAAC default, DHCP supported)
 - AAA (no text yet)
 - Protection against DDoS

Organization (2)

- Requirements related to telemetry
 - Device state and traceability (YANG, Syslog, gRPC)
 - Topology state and traceability (YANG, BGP-LS)
 - Flow Traceability (no text yet)
- Requirements related to IPv6 forwarding and addressing
 - The IPv6 address is not a host identifier
 - Router handling of IPv6 addresses
 - MTU and Jumbo Frames
 - ICMP Considerations
 - Machine access to the forwarding table (YANG)
 - Processing extension headers (no text yet)
 - IPv6 only operation

Organization (3)

- Future Considerations
 - Segment routing (no text yet)
- Security Considerations
 - Robustness and Security
 - Programmable device access and security
 - Zero touch provisioning and security
- Conclusion

Next Steps

- Discussion on mailing list about other documents in the same space, but for different kinds of networks
 - This document was designed to be generic
 - Is there enough material to have several documents?
 - Would it be helpful or confusing to have several documents?
- Accept as WG doc?
 - What path from here?