

RIPE



RIPE-554bis

The story of how we got here, and where we are now



Who are we?

- The authors of RIPE-501, RIPE-554 and RIPE-554bis
 - Jan Žorž RIPE 501 554 554bis
 - Sander Steffann RIPE 501 554 554bis
 - Merike Kää RIPE 554 554bis
 - Tim Chown RIPE 554bis
 - Tim Winters RIPE 554bis



What is RIPE 554?

- Guidance when procuring IPv6 capable equipment and software for enterprises
- A document of the RIPE IPv6 Working Group
- It is/was quite successful:
 - Used by enterprises and governments all over the world
 - Part of government procurement rules in several countries
 - Some vendors secretly admitted it became their IPv6 roadmap



How it all started

- The Go6 Institute in Slovenia asked the Slovenian government why they didn't require IPv6 when buying equipment
- The Slovenian government asked what exactly they should require...

Bringing it to RIPE

- In 2010 Jan Žorž (CEO of the Go6 Institute) and Sander Steffann discussed IPv6 deployment hurdles at a RIPE meeting
 - Just having a casual chat...
 - And Jan mentioned "hey, would this document be useful?"



- Difficulty: the document was in Slovenian

RIPE 501

Dear community,

A new ripe document, RIPE-501, has been published "Requirements For IPv6 in ICT Equipment".

This document aims to be a guide of what to ask for exactly when IPv6 is a requirement in a tender or some contract and lists the various applicable RFCs for specific kinds of ICT equipment.

The document is available on <http://www.ripe.net/ripe/docs/ripe-501.html>

Please note that when using this document as a reference, as with any RIPE document, it might get superseded by new versions in the future.

Many thanks to the authors and everybody who helped with proof reading, translation and feedback.

Marco, David & Shane,

co-chairs of the IPv6 working group



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- There were some questions and comments
 - In January 2011 discussion on RIPE-501bis started
 - RIPE-501 was just a translation of the Slovenian document
 - Now that improvements and changes were being made everybody started sending in suggestions and contributions
 - This took a while...

There were many contributors

Sterle, Urban Kunc, Matjaz Straus, Simeon Lisec, Davor Sostaric and Matjaz Lenassi from Go6 Expert Council for their enthusiastic governance of this document. We recognise the work done in the Slovenian IPv6 working group for their review and useful input. Special recognition goes to Ivan Pepelnjak, Andrej Kobal and Ragnar Us for their efforts and work done on the document. Thanks also to the co-Chairs of RIPE IPv6 Working Group, David Kessens, Shane Kerr and Marco Hogewoning for their support and encouragement. We would also like to thank Patrik Fältström, Torbjörn Eklöv, Randy Bush, Matsuzaki Yoshinobu, Ides Vanneuville, Olaf Maennel, Ole Trøan, Teemu Savolainen and people from RIPE IPv6 Working Group (Joao Damas, S.P. Zeidler, Gert Doering among others) for their input, comments and review of the document. Last but not least, we would like to thank Chris Buckridge and the Communications Team from the RIPE NCC for correcting our grammar and wording in this document. And everyone else who contributed to this work.

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RIPE-554 was ready!

- In June 2012 the revised document was published as RIPE-554



RIPE-554 main contents

- Requirements for host equipment
- Requirements for consumer grade layer 2 switch equipment
- Requirements for enterprise/ISP grade layer 2 switch equipment
- Requirements for router or layer 3 switch equipment
- Requirements for network security equipment
- Requirements for CPE equipment
- Requirements for mobile devices
- Requirements for load balancers
- Requirements for IPv6 support in software
- Skill requirements of the systems integrator



Then it took a while...

- Updating RIPE-554 was discussed multiple times
 - But there weren't that many changes necessary...
 - A new version will get a new number, and "554" is famous now
 - Etc...



But after gathering courage for a few years...

- The authors of RIPE-554 finally decided to do it
- But... what to do?
 - Expand the number of categories?
 - Go into more detail?
- In the end we decided to just do basic updates
 - Otherwise getting consensus can take years



Basic changes

- There are always typos and bad grammar to fix
- Updated RFC references to current versions
- Add fundamental RFCs like "IPv6 over Ethernet"
- References to SeND removed
- Removed BOUNDv6 as it doesn't exist anymore
- The following slides show the highlights



Changes for hosts

- Added some requirements:
 - Handling of overlapping fragments
 - Atomic fragments considered harmful
 - Stable opaque addresses for SLAAC and DHCP
- RDNSS (DNS options in RA) support became mandatory
- Mobile IPv6 became optional

Changes for enterprise/ISP switches

- Added some mandatory DHCPv6 relay options
- Added SAVI for DHCPv6 as optional
- Added additional security (RA-Guard/DHCPv6-Guard)

Changes for routers

- Added RDNSS (DNS options in RA) support
- Added "don't assume /64"
- Added some optional DHCPv6 relay options

Changes for CPEs

- Add mandatory simple security capabilities
- Added Transition Mechanisms for supporting IPv4 over IPv6

Changes for mobile devices

- We removed the whole section!
- We now only consider their WiFi interfaces
 - Which makes them normal hosts
- 3GPP related standards are out of scope
 - We don't have the expertise to track this
 - There are better documents for these requirements



Changes for load balancers

- Replace X-Forwarded-For: with standard Forwarded:



Changes for software

- Expanded the minimum requirements, like
 - Allow all valid addresses in input
 - Use recommended notation in output
 - DNS resolving must support AAAA
 - Connections must support IPv6 (sockets etc)
 - When connecting use default address selection or Happy Eyeballs 2
- Make it explicit that this list is not exhaustive!



What now?

- Completed adoption for consensus call at RIPE 83, new document available shortly.
- Use the document when making purchases.
 - Ask about IPv6-only support
- Check IPv6 Ready Logo list when making a purchase



IPv6 Ready Logo

- IPv6 Ready Logo program existed since 2003
 - 2186 devices have received the IPv6 Ready Core Logo since 2005
- Follows the MUST/SHOULDs from IPv6 RFCs
 - Includes testing for IPv6 Host, Router, CPE
 - Additional DHCPv6 and IPsec/IKE testing
- RIPE-554bis has asterisk (*) next to all the testing covered by IPv6 Ready Logo.
- <https://www.ipv6ready.org/db/index.php/public/?o=4>



Questions?

