

Internet Governance and the move to IPv6

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Internet Governance

Community Policies

Internet Resource Statistics





Internet Governance







ICANN / IANA





The 5 RIRs





RIPE NCC is -a Network Coordination Center -an independent organisation -a not-for-profit membership association -one of the 5 Regional Internet Registries





Registration



Goals of the IR System: Registration

Why?

Ensure uniqueness of IP address space usage Provide contact information for network operators

How? RIPE Database

Results:

IP address space allocated uniquely Contact information available for Internet resources





Aggregation



Goals of the IR System: Aggregation

Why?

Routing table grows fast Provide scalable routing solution for the Internet

How? Encourage announcement of whole allocations (min /21) Introduction of Classless Inter Domain Routing (CIDR)

Results:

Growth of routing table slowed down





Conservation



Goals of the IR System: Conservation

Why?

IP address space is limited resource Ensure efficient usage

How?

Introduction of CIDR Community based policies to ensure fair usage

Results:

IP address space consumption slowed Address space allocated on 'need to use' basis



IP address distribution





Community Policies



Policy Development Cycle





How policy is made







Internet Resource Statistics



IPv4 Address Pool - Now



IPv4 Address Pool - The Future







IPv6



IPv6 address: 128 bits – 32 bits in IPv4 Every subnet should be a /64 Customer assignments (sites) between:

- /64 (1 subnet)
- /48 (65536 subnets)

Minimum allocation size /32

- 65536 /48's



Makes network planning easier Always enough addresses in a subnet DHCP not necessary for address configuration – but still possible Makes scanning subnets useless (botnets) – too many addresses in a subnet



IPv6 and IPv4 compatibility?

IPv6 is a different protocol from IPv4 IPv6 hosts cannot talk to IPv4 hosts directly

Tools like 6to4 and other tunneling options only let IPv6 hosts talk to eachother



IPv6 Transition



IPv6 Allocations





Getting an IPv6 allocation

To qualify, an organisation must:

- Be an LIR
- Advertise the allocation as a single prefix
- Have a plan for making assignments within two years





Who needs IPv6? We have NAT!

We'll move when staying with IPv4 hurts too much

We'll move before IPv4 runs out, smoothly





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