



IPv6 workshop

*Port Elizabeth, South Africa
Sept. 19th & 20th*

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IPv6DISSemination and Exploitation




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Initial Contributions

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- Laurent Toutain, ENST-Bretagne - IRISA, France


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Introduction to IPv6




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Why a new version for IP ?



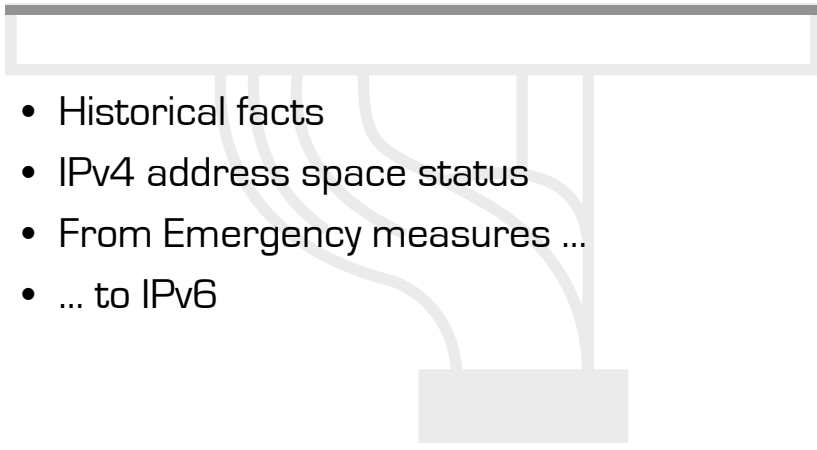
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Agenda



- Historical facts
- IPv4 address space status
- From Emergency measures ...
- ... to IPv6



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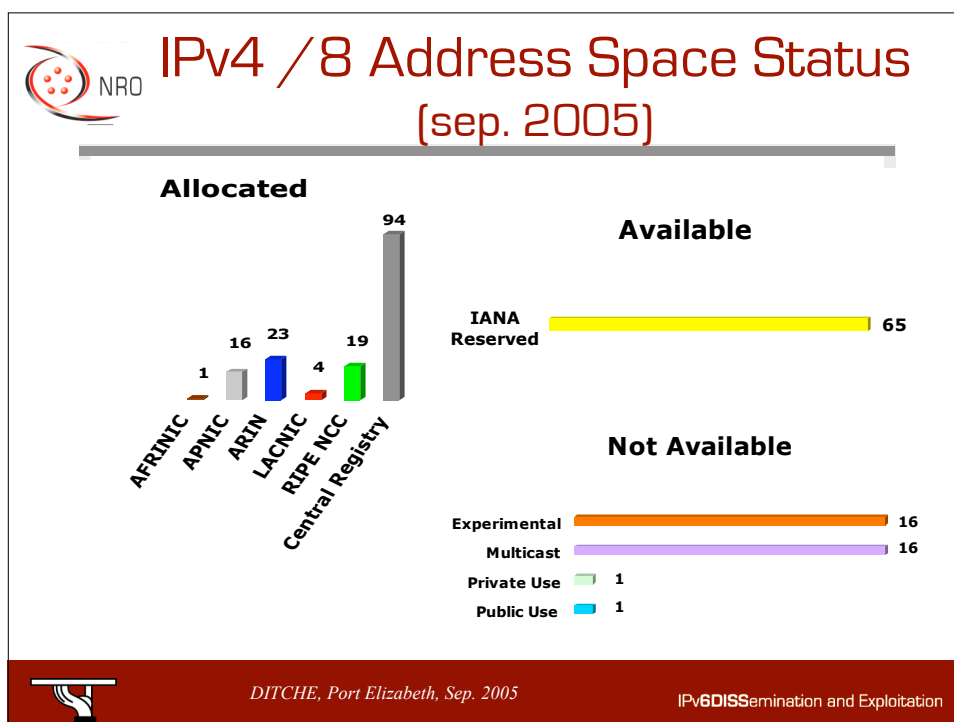
Historical facts

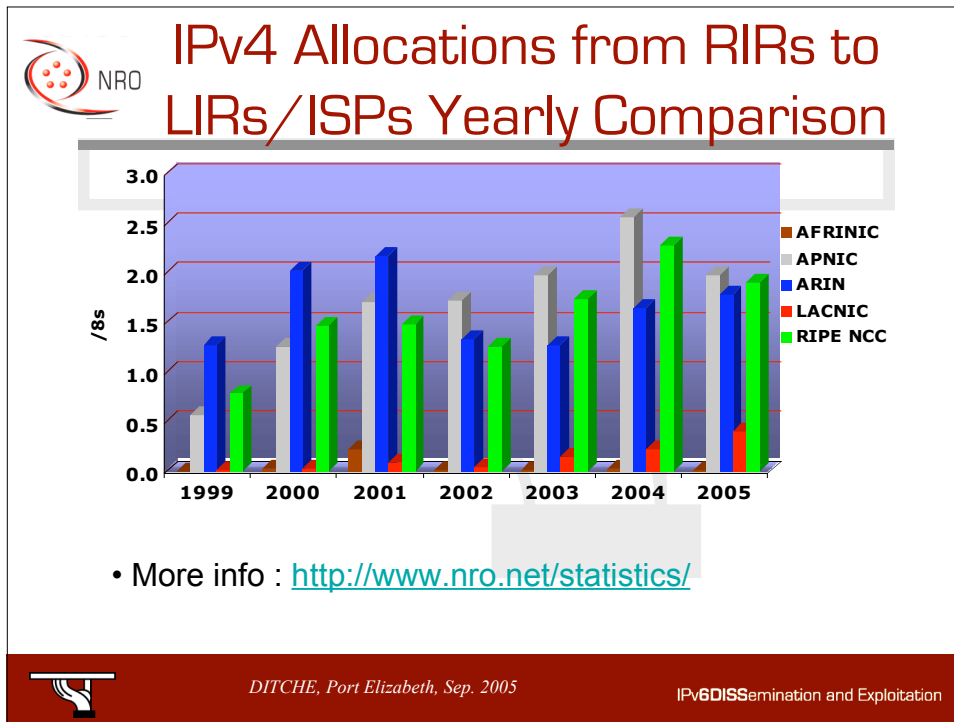
- 1983 : Research network for ~ 100 computers
- 1992 : Commercial activity
- Exponential growth
- 1993 : Exhaustion of the class B address space
- Forecast of network collapse for 1994!
- [NRO statistics](#) (Sep. 2005)

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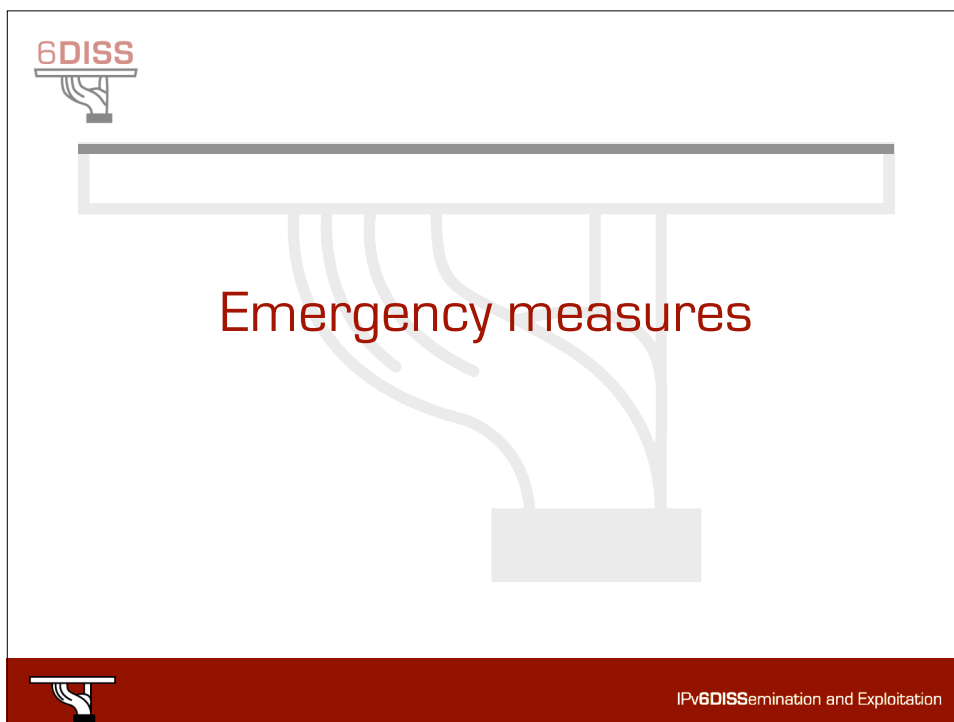
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 **CIDR ...**

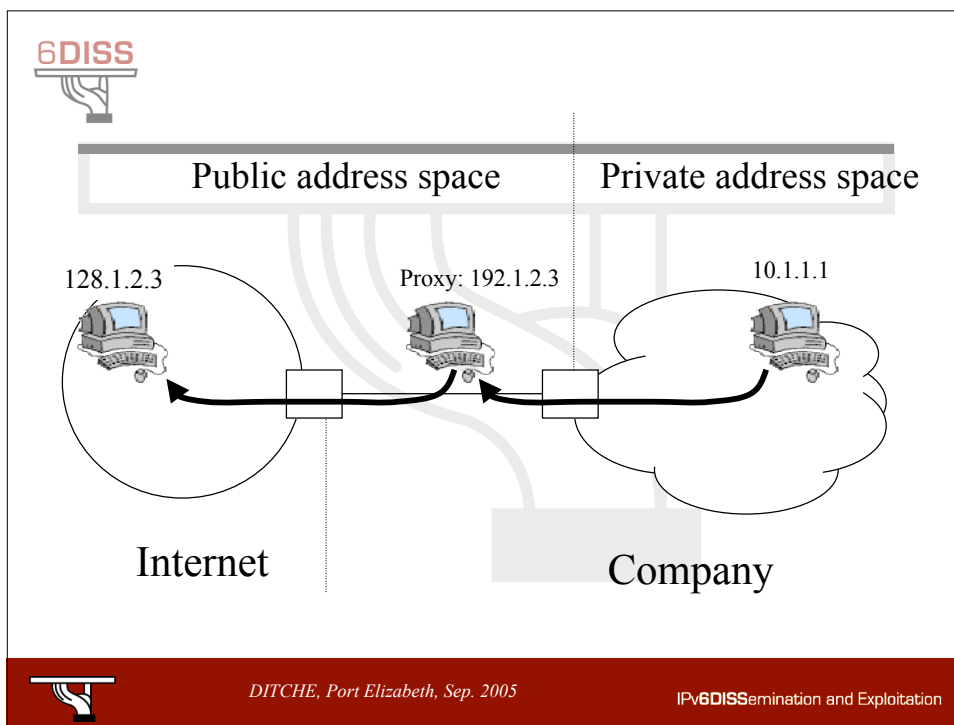
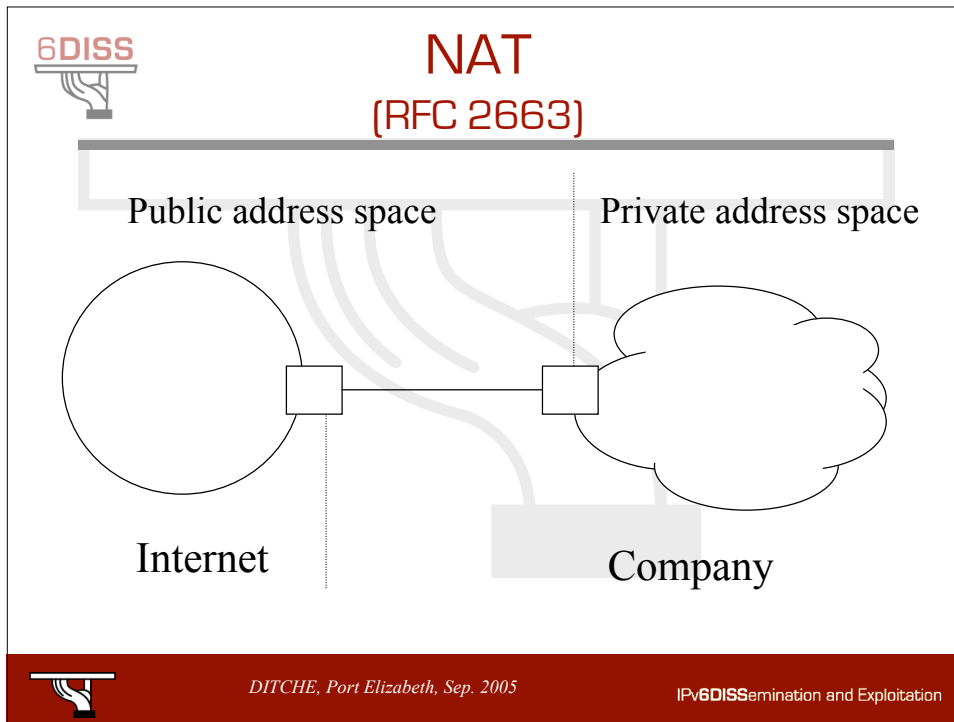
- Allocate exceptionally class B addresses
- Re-use class C address space
- CIDR (*Classless Internet Domain Routing*)
 - RFC 1519 (PS)
 - network address = prefix/prefix length
 - less address waste
 - allows aggregation (reduces routing table size)

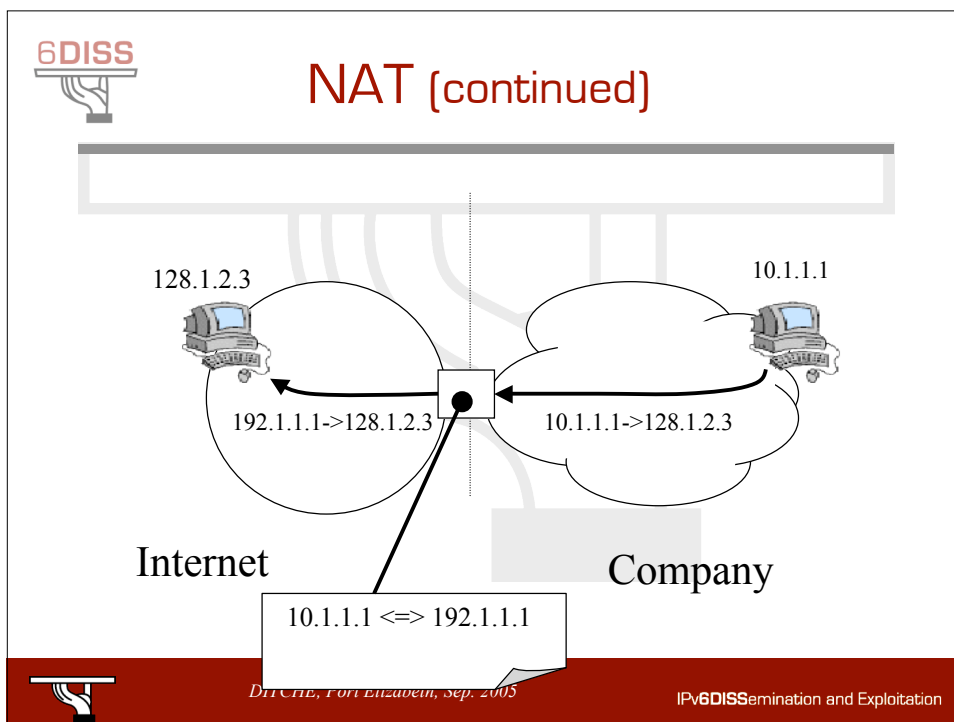
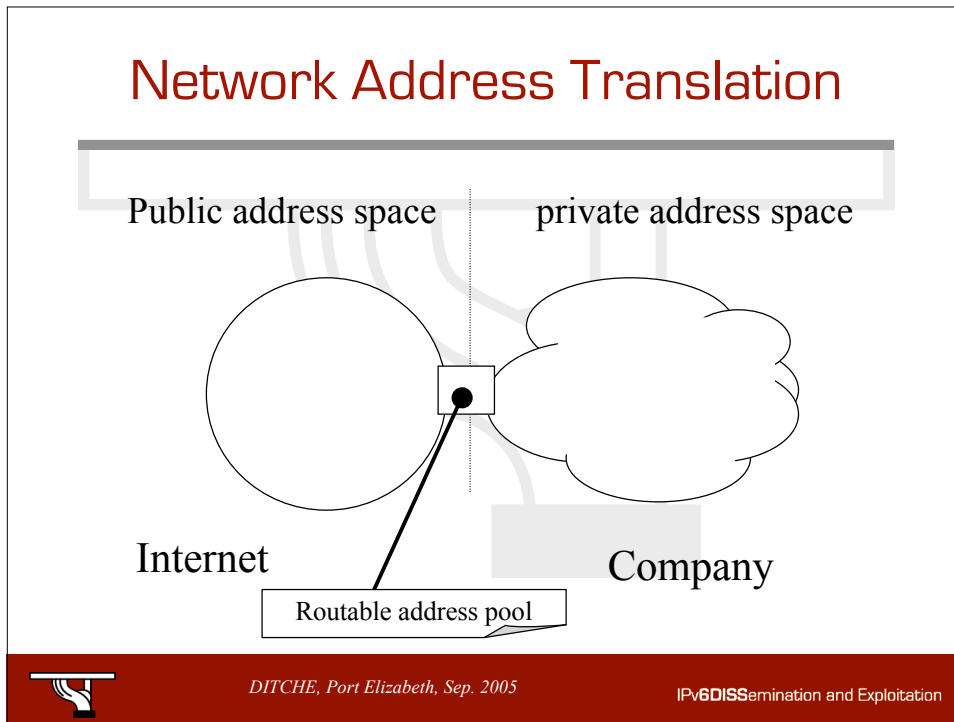
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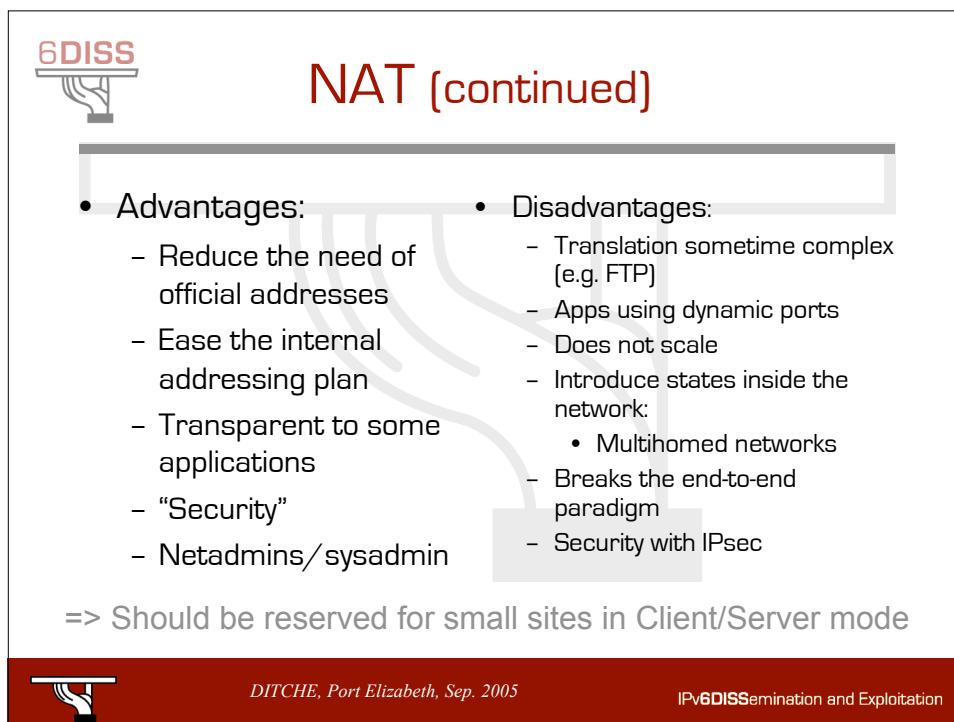
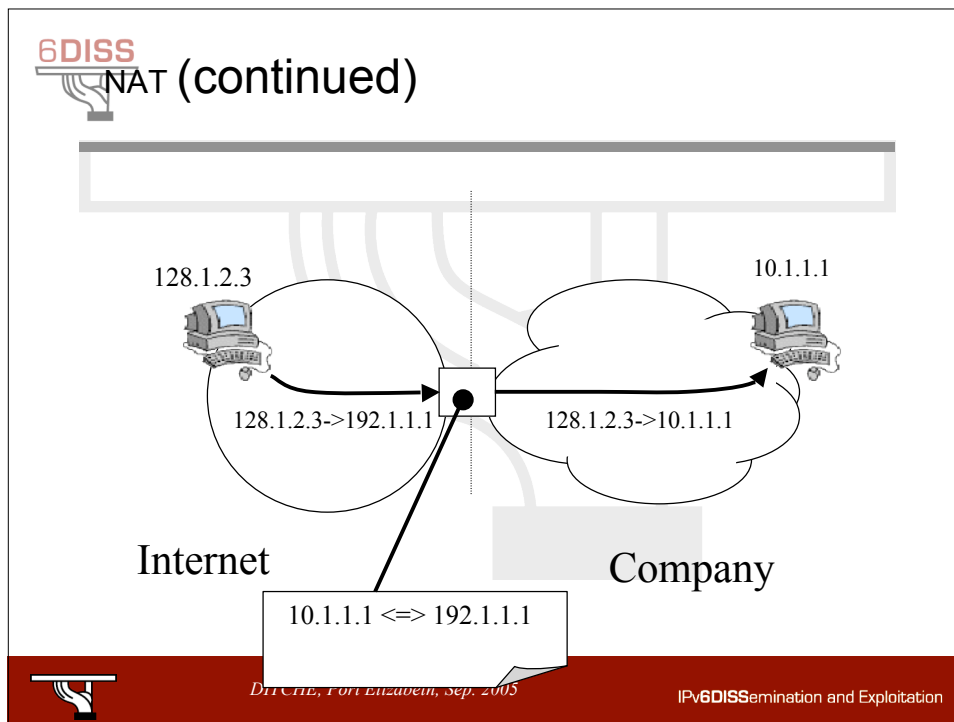
 **Private Addresses
(RFC 1918 BCP)**

- Allow private addressing plans
- Addresses are used internally
- Similar to security architecture with firewall
- Use of proxies or NAT to go outside
 - RFC 1631, 2663 and 2993
- NAT-PT is the most commonly used of NAT variations

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Emergency Measures

- These emergency measures gave time to develop a new version of IP, named IPv6
- IPv6 keeps principles that have made the success of IP
- Corrects what was wrong with the current version (v4)
- BUT are emergency measures enough?

