IPng: An Overview

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Current Status: Internet

- Composition
- Who uses it?
- Fuel for the “Fire of Change”
  - Growth
  - Transition

THE SOLUTION:

Internet Protocol Next Generation (IPng)

What is IPng?

IP version 6 (IPng) is a new version of the Internet Protocol, designed as a proposed successor to IP version 4 (IPv4)

IPv6 ~ IPng

IPng Challenge

To provide a solution which solves today's problems and is attractive in these emerging markets.

Features

- Expanded Routing and Addressing Capabilities
- “Anycast” Address
- Header Format Simplification
- Improved Support for Options
- Quality-of-Service Capabilities
- Authentication and Privacy Capabilities

IPng Header Format

- Version
- Priority
- Payload Length
- Next Header
- Hop Limit
- Source Address
- Destination Address

IPng Extension Header Format

- Hop-by-Hop Options
- Routing (Type 0)
- Fragment
- Destination Options
- Authentication
- Encapsulating Security Payload

IPv4 v. IPng

- 32 Bit Address
- 2^{32} Addresses
- Node Addressing
- Encryption at Application Level
- Implementation of Firewalls for Protection a must

- 128 Bit Address
- 2^{96} Addresses
- Interface Addressing
- Protocol Level Encryption
- Inherent Security

Transition Concerns…
...Addressed

- Incremental Upgrade
- Incremental Deployment
- Easy Addressing
- Low Startup Costs

Security Concerns…
...Addressed

- Authentication Header
- Privacy Header

Summary

IPng is:

- Still in RFC “mode”
- Approximately 3 to 7 years away
- An “Evolutionary Step” from IPv4

IPng IS the future...

Questions…

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