

The Mayan Perspective on the IPv6 Business Case

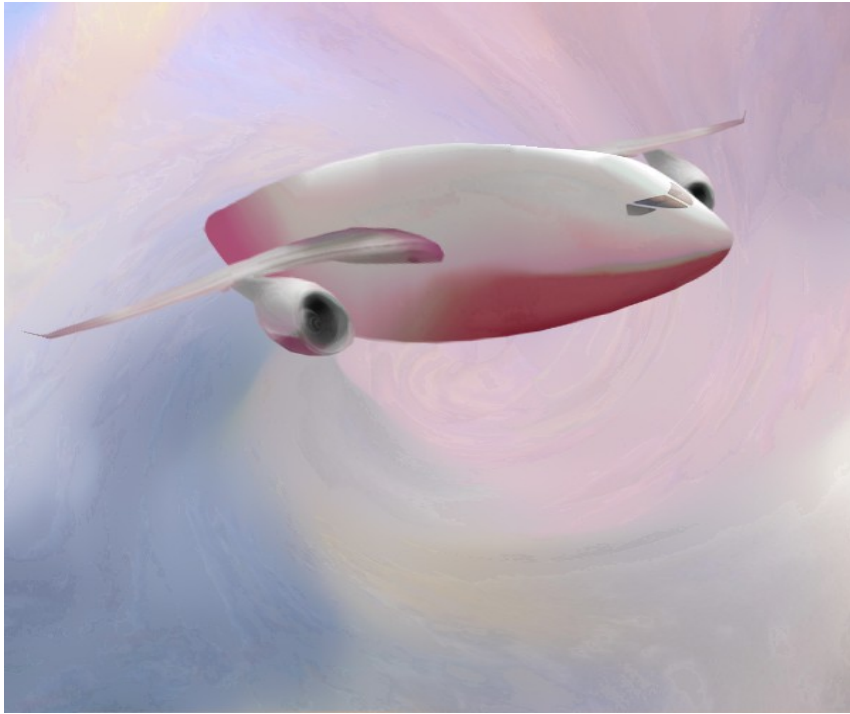
written and presented by

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Invitation for a Mind Journey



No CO2 emission
guaranteed



Sit back, relax and enjoy!

It's all about Context



The laws of physics and biology tell us, that skin burns when it touches hot coals.

The IPv6 Energy Field

The screenshot shows the Sniffer application interface. The title bar reads "Sniffer - Trillian, Ethernet (Line speed at 10 Mbps) - [header1.cap: Decode, 1/2 Ethernet Frames]". The menu bar includes File, Monitor, Capture, Display, Tools, Database, Window, and Help. The toolbar contains various icons for file operations and network analysis, with a speed filter set to "W2K".

No.	Stat	Source Address	Dest Address	Summary
1	M	fe80::202:b3ff:fe1e:8329	fe80::2a0:24ff:fec5:3256	ICMPv6: Echo Request Message Code=0

The packet details pane shows the following structure:

- DLC: Ethertype=86DD, size=94 bytes
- IPv6: ----- IPv6 Header -----
 - IPv6: Version = 6
 - IPv6: Priority = 0 (Uncharacterized Traffic)
 - IPv6: Flow Label = 0x000000
 - IPv6: Payload Length = 40
 - IPv6: Next Header = 58 (ICMPv6)
 - IPv6: Hop Limit = 128
 - IPv6: Source address = fe80::202:b3ff:fe1e:8329
 - IPv6: Destination address = fe80::2a0:24ff:fec5:3256
 - IPv6:
- ICMPv6: Echo Request Message Code=0

Some History to create Context

- Scientific Revolution in 16th/17th century
 - Nicolaus Copernicus, 1473 – 1543
Heliocentric world view
 - Galileo Galilei, 1564 – 1642
Father of Astronomy and modern Physics
(Jupitermoons)
 - Johannes Kepler, 1571 – 1630
Planetary motion
 - Isaac Newton, 1643 – 1727
Gravitation, Planetary motion, Founder of classical
mechanics

Effect of their Findings

- Expansion of human consciousness
- Foundation of our currently accepted mechanical worldview
- Man loses his earlier position of being the center of creation
- Schism of religion, church and science

- Since then we have tried to understand the world and solve our issues with our left side brain only
- Scientific acceptance was only given to things that could be proven in the material world

Early 21st Century

- New scientific revolution, similar magnitude
- Revolutionary findings in Mathematics, Physics, Biology, Neurology, Cardiology, Genetics
- It will take some time to integrate this new cosmology in our consciousness and understanding.
- Many traditional scientists still resist the new findings, because it ultimately shatters the foundation of everything we believed to be true for a long time.

The new Scientific Findings in short

- ◆ An intelligent energy field connects the whole Universe.
 - ◆ Our bodies, our world are a manifestation of that field. The field is the blueprint.
 - ◆ Every reality has two inseparable sides, spirit and matter.
 - ◆ Emotions and beliefs translate the quantum possibilities of the field into physical reality.
-
- ◆ What traditional science has explored in the last centuries only relates to about 4% of what is out there (dark matter, dark energy). So how scientific is research in only the visible part of matter?

Synthesis

- Man becomes the center of the Universe again. Victim mode goodbye.
- ⊙ Seeming miracles become technologies
- In history, matriarchy developed first, followed by patriarchy (same with our brain). Our current world lives in polarity.
- Today we live in a time where we have to learn to integrate the two poles. This implies to integrate and synchronize the two sides of our brains and use them for the purposes of our hearts (Neurocardiology).
- We must transcend our sense of polarity and separateness.

Participatory Universe

Quote:

- John Wheeler, studied with Albert Einstein:
 - ★ “Our observation builds the Universe.”
 - ★ “There are no observers in the Universe, there are only creators.”

Application

Use of systemic and intuitive approaches in many different disciplines:

- Cybernetics (system theory), used in technical areas, in the humanities (called systemics), in social science, management cybernetics and biocybernetics.
- Many leading management schools use systemic approaches (Management Zentrum St. Gallen, Malik, Schools in Germany, Austria and internationally such as Otto Scharmer from MIT).
- We use it for performance troubleshooting in complex network environments. Left side brain only based analytical approaches cannot deal with the complexity of our interconnected systems and applications.

So what about the Mayas?

- ❖ Their calendar describes the evolution of consciousness
 - The longest cycle starts 16.5 Bio years ago (how did they know?)
 - The second last cycle started 1999, the last will start in 2011
 - The calendar has a built in acceleration factor of 20 per cycle
 - All cycles end in 2012

- ❖ This does not define the end of the world, but rather a major consciousness leap

Consciousness Leaps and Technology

- In human history, consciousness leaps have always been reflected or coincided with science and technology leaps.
- Consciousness, science and technology are interdependent.
- When Copernicus, Kepler, Galileo and friends proved that the earth was not the center of the universe the Gutenberg print was invented
- Recently, while science proves that our seemingly objective reality is not objective, but being sourced in an energy field which is created by our consciousness, the Internet is invented (coincides with the 2nd last Maya cycle starting 1999).
- While we are working on scaling the Internet by introducing better plumbing with IPv6, the IPv4 early guys are working on the Interplanetary communication protocol (DTN), to prepare for the future. This is going to be our next leap.



And now the Facts and the Business Case

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Population and Internet Users

Region	Online Users	Population	Online in %
World (world in 2001)	1'463 Mio. 360 Mio.)	6'676 Mio.	21.9%
USA/Canada	248 Mio.	337 Mio.	73.6%
Europe	384 Mio.	800 Mio.	48.1%
Middle East	41 Mio.	197 Mio.	21.3%
Latin America	139 Mio.	576 Mio.	24.1%
Africa	51 Mio.	955 Mio.	5.3%
Asia	578 Mio.	3'776 Mio.	15.3%
Oceania	20 Mio.	33 Mio.	59.5%

www.internetworldstats.com/stats.htm

Address Allocation IPv4 - Worldview

- IANA Pool (unallocated addresses)

- October 2005 64 /8 (Class A)
- May 2007 47 /8
- January 2008 42 /8
- January 1, 2009 34 /8

- Projected end of IPv4 pools:

- IANA Pool June 2011
- RIR Pools March 2012

- Source: <http://www.potaroo.net/tools/ipv4>

Address Allocations IPv6 - Worldview

Registry	Jan 2008			Jan 2009		
	No of Alloc	No of /32	%	No of Alloc	No of /32	%
AfriNic	46	40	0.07%	62	52	0.03%
APNIC	540	24'191	42%	853	29'663	20.7%
ARIN	544	386	0.67%	754	14'857	10.3%
LACNIC	98	130	0.2%	114	65'869	45.8%
RipeNCC	1'017	32'854	57%	1'307	33'204	23.1%
Total	2'245	57'601	100%	3'090	143'645	100%

- One single /32 block has more IP addresses than the whole IPv4 address space!!
- 143'645 /32 blocks represent **0.027%** of the currently defined Global IPv6 address space (2000::/3).
- With 143'645 /32 blocks 9.4 Bio customers can receive a /48.

Source: <http://www.bgpexpert.com/addrspace-ipv6.php>

Why IPv6? – The large context

- IPv6 is about the continuation of the Internet.
- The Internet is a global co-creation.
- Each of us has to contribute his part in the evolution of the Internet, because we all benefit from it. It takes a collective effort for the best of all.
- This is the reason to go for IPv6.

Business Case and Cost Issue

- IPv6 is an upgrade of the infrastructure („it's the plumbing“ as Jim Bound used to say).
- There is no direct business case for infrastructure upgrades.
- If you want to save cost, turn it off.

- The Business Case is in the applications and services.
To run state-of-the-art services you need a state-of-the-art infrastructure.
- Customers will never ask for IPv6. Customers ask for services.

Infrastructure



Infrastructure Upgrade



Extensions ...



Trend
analysts
predicted
that
mankind
would
soon
drown in
horse
dung!

Structural Upgrade



This resolved the horse dung issue ...

But created some new issues to be solved now!

Next Evolutionary Step?



Not
quite
yet!

But
getting
there.

This may become the Quantum Leap

- ◉ Interplanetary Communication Protocol
 - RFC 4838 - Delay-Tolerant Networking Architecture
 - RFC 5050 - Bundle Protocol Specification
 - RFC 5325 - Licklider Transmission Protocol Motivation
 - RFC 5326 - Licklider Transmission Protocol Specification
 - RFC 5327 - Licklider Transmission Protocol Security Extensions
 - And a bunch of drafts in the queue ...

- ◉ **Get ready for the next technology leap, evolution never ends and is not linear.**

Do you still want a Business Case now?

❖ If you don't upgrade you will have

- Extra cost due to an overaged infrastructure.
- Not be able to integrate new applications.
- Loose markets and customers due to outdated services and lack of global connectivity.
- Get out of business in the long term.
- Loose your membership in the global Internet community.

New applications?

IPv6 Strategy in a nutshell

All Microsoft Enterprise applications are IP agnostic

- Nearly complete
- Engineering success

Modify specific applications to leverage IPv6

- This is the Value Prop of IPv6
- DirectAccess, Home Group (will be discussed next)
- These are IPv6-only applications

Clear, consistent messaging about IPv6

- We need to do better here
- Requires retraining everywhere

From a presentation by Sean Siler, Sr. IPv6 Product Manager at Microsoft

When is it time for IPv6?



The Economy Perspective

- According to a study conducted by the Department of Commerce (DoC) in 2006, the following can be said for the US:
 - IPv6 creates a services market projected to be approximately 25 Billion US\$ over the next 25 years.
 - The financial benefits of IPv6 transition are expected to be 10 Billion US\$ per year.
 - For every Dollar invested in IPv6 you can expect a \$10 return in cost savings, an ROI of 10:1!

Technical and Economic Assessment of Internet Protocol Version 6, Department of Commerce, February 2006, <http://www.ntia.doc.gov/ntiahome/ntiageneral/ipv6>

Create Economic Stimulus



How about an economic stimulus packet for IPv6?

Dealing with the inevitable



If this guy
resists the
wave, the
wave will
smash him

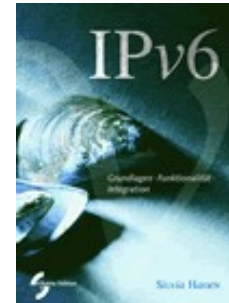
If he aligns
with the
wave, he will
ride high.

Catch the wave!

Thank You For Your Attention!

IPv6 Grundlagen, Funktionalität, Integration

von Silvia Hagen, Deutsch
Sunny Edition, 2004
ISBN 3-9522942-0-9



IPv6 Essentials

by Silvia Hagen, English
O'Reilly, Mai 2006
2nd Edition, ISBN 0-5961-0058-2

