Mail and Web Servers First?

Benedikt Stockebrand
Stepladder IT Training+Consulting GmbH

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About Me

- Long term Unix, TCP/IP, Internet, architecture, operations, major cleanup guy
- Got serious with IPv6 in 2003
- Wrote a book about it in 2006
- Co-authored a study on secure IPv6 deployment for the German Federal Office for IT Security (BSI) in 2010
- Became a RIPE IPv6 WG co-chair in 2014
- Currently do a contract as "program manager" for IPv6 deployment at the data center operator for the state of Hessen (Germany)

The Basic Idea

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- Add IPv6 to our mail servers
- Add IPv6 to our web servers
- Otherwise we just continue to use IPv4

Does It Work?

Does It Work?

No.

Does It Work?

No.

We forgot about the DNS.

Does It Work?

No.

We forgot about the DNS.

And we forgot our networks.

Does It Work?

No.

We forgot about the DNS.

And we forgot our networks.

And we forgot our ISPs/transit providers/BGP peers.

Mail: Does It Work?

Maybe. Kind of.

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Maybe. Kind of.

Does the spam filter still work?

Mail: Does It Work?

Maybe. Kind of.

Does the spam filter still work?

And do the IDS/IPS/virus scanners still work?

Web: Does It Work?

Maybe. Kind of.

Maybe. Kind of.

What about literal IPv4 addresses in embedded URLs?

Maybe. Kind of.

What about literal IPv4 addresses in embedded URLs?

And what about all the CGI scripts/servlets/whatever?

Maybe. Kind of.

What about literal IPv4 addresses in embedded URLs?

And what about all the CGI scripts/servlets/whatever?

. . . after we've done the necessary and long overdue upgrade to our web servers?

Testing

Every admin has a test environment.

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Some even have a dedicated production environment.
(Marc Haber)

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Starting with IPv6 takes more testing then running an existing IPv4 setup.

Does It Work Now?

Does It Work Now?

Maybe.

Does It Work Now?

Maybe.

We don't know.

Does It Work Now?

Maybe.

We don't know.

Because we forgot the monitoring.

A Futurologist Perspective

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- IPv4 getting more and more crippled

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- Products requiring IPv6

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What does the future look like?

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- Products requiring IPv6
- IPv4 experience getting scarce

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- IPv4 getting more and more crippled
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- . . . and only serving business customers
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- Products requiring IPv6
- IPv4 experience getting scarce (anyone still remember IPX? SNA? AppleTalk?)

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- Operations (systems and network admins, user help desk, . . .)

The Real Problem: People

IPv6 still requires people to deal with it:

- Operations (systems and network admins, user help desk, . . .)
- Developers

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- Developers
- Managers

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- Operations (systems and network admins, user help desk, . . .)
- Developers
- Managers
- Corporate lawyers (to deal with the external suppliers and contractors)
  (ISPs, DNS operators, data center operators, IT outsourcers, . . .)

The Final Question

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Do you really want your people to gather their first IPv6 experience with

- externally visible
- business critical

services?

Contact Information

Um Probleme zu lösen

geht man ihnen zuerst auf den Grund.

Stepladder IT
Training+Consulting GmbH
Benedikt Stockebrand

Fichardstr. 38
D-60322 Frankfurt/Main
Germany

contact@stepladder-it.com

Web pages:
http://www.stepladder-it.com/
http://www.benedikt-stockebrand.de/

Video blog:
http://www.stepladder-it.com/bivblog/