



IBM ITS / Sales & Distribution, Public Sector

IBM and IPv6

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**We've thought about IT as the world of data centers,
software, PCs, routers, bandwidth.**

**We've thought about infrastructure as the world of
buildings, factories, hospitals, roads, pipelines.**

Those worlds are converging.

**We're confident that the world can become smarter.
We're building it today.**

IBM

The World is Getting Smarter ...

Because We Want It to



Smart cities



Smart traffic systems



Smart food systems



Smart healthcare



Smart energy grids



Smart retail



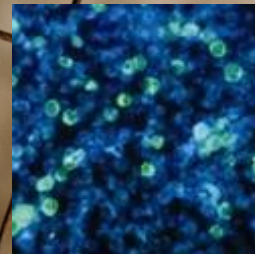
Smart water management



Smart supply chains



Smart countries



Smart weather



Intelligent oil field technologies



Smart regions



A close-up photograph of a wireframe globe. The globe is made of a dark metal grid. A large, irregular, dark brown, textured, and cracked piece of material, resembling rusted metal or dried earth, is attached to the globe, covering a significant portion of its surface. The background is blurred, showing a light-colored, textured surface. The text is centered over the globe.

**The Digital and the Physical Infrastructures of the
World are Converging**

That's the reason we need IPv6



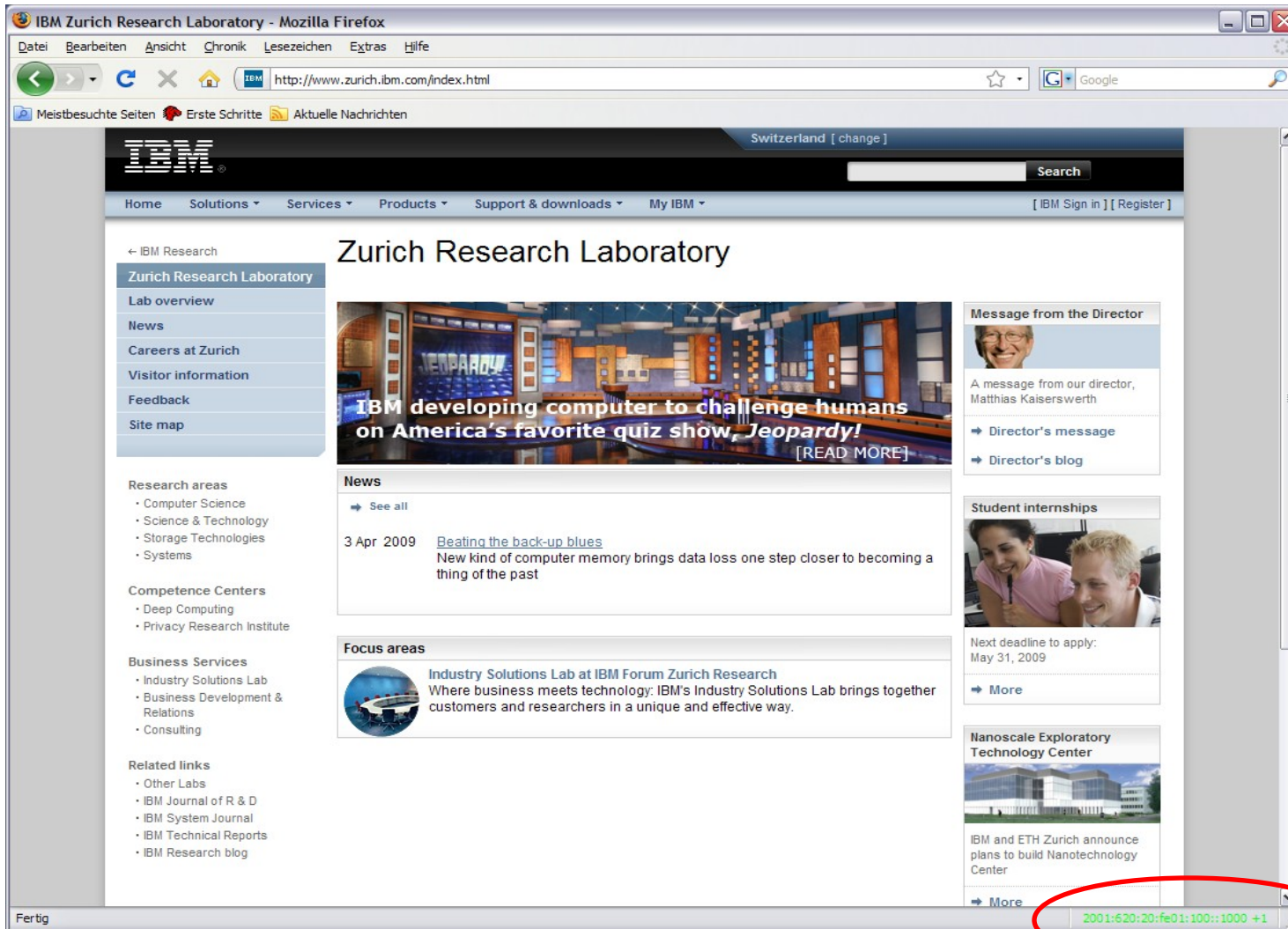
IBM and IPv6

- **IBM has been a long time supporter of IPv6.** In 1997, IBM already distributed an IPv6-enabled UNIX® system (IBM AIX®)
- As an active participant in the Internet Engineering Task Force (**IETF**), IBM played key roles in producing the IPv6 standard.
- IBM technologists will continue to **contribute to the enhancement of this standard's evolution and IPv6 enablement worldwide**
- IBM is strategically **enabling key products** with IPv6 capability to meet demands of the next generation internet, demonstrating our leadership and commitment to IPv6 enablement worldwide.
- IBM is taking a systems-level view of IPv6 by providing **end-to-end solutions** that include appropriate application, middleware, hardware and **service offerings** to take advantage of the expanded functionality IPv6 enables.

IBM and IPv6

- The timing of **product enhancements** will depend on individual product release schedules and marketplace need. IBM end-to-end solutions include appropriate application, middleware, hardware and service offerings.
- Today most of our (TCP/IP) products are **IPv6 basic enabled or have IPv4/IPv6 dualstack implemented**
- IBM products that do not implement the TCP/IP communication protocol at the transport layer (for example, middleware) can demonstrate their **compliance to IPv6 standards**, with full function parity, via a [Self-Certification](#) program that meets U.S. Federal Government procurement directives.
- IBM experts are **trained systematically** on IPv6 concepts and technology as part of their regular education curriculum

IBM Research, IPv4/IPv6 Dualstack enabled



IPv4/6 enabled
Web-Portal



IBM Research creates a lot of ICAP for example IPv6 (patented) Tool Suite development etc.

aurora Traffic analysis and visualization

Flow-based
Analysis an operation o
The flow-ba
resource us
Traffic analysis and visualization systems, qt aspects.
The system flow-inform provide deta supports ne network cor consolidati

Reporting
Traffic usag and graphs
• The repor
Applicatio
• Hosts and
• Domains
• Individual
• Traffic typ
• Service typ
• Protocols
• TCP/UDP
• Flow-infor

Contact
• Aurora team

Fertig

■ Traffic flows without ,intelligent' processing are not feasible

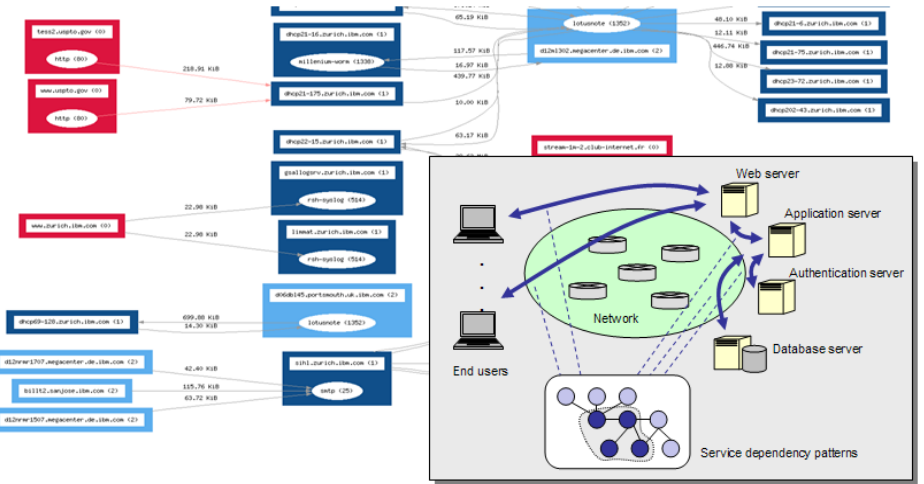
Among others IPv6 flows are recognized

```

Generic : [h]elp, [a]bout, [i]nterval, [c]ommand, [q]uit
Flow Top : [b]ytes, [p]ackets
Status : [i]nfo, [U]sage, [F]lows, [P]ackets, [T]hreads, [D]rivers, [C]onfig

201 Flow Top (bytes) hash version src-ip src-port dst-ip dst-port proto-rsa/prot
ort-rt packets bytes
fb16c767 4 9,4,12,43 22 9,4,71,21 41098 6/tcp 1437 9274
d933b07 4 9,4,68,163 22 9,4,70,54 1816 6/tcp 237 530
22c6b9ac 4 9,4,12,42 22 9,4,65,161 33498 6/tcp 289 730
f82487f 4 9,4,12,45 22 9,4,71,21 41086 6/tcp 18404
e467a235 4 9,4,70,54 1816 9,4,68,163 22 6/tcp 15780
d414e616 4 9,4,64,245 0 224,0,0,13 0 143 7/udp 200 12532
625a32da 4 9,4,64,246 1966 224,0,0,2 0 143 7/udp 28
d2a515a 4 9,4,64,246 0 224,0,0,13 0 103/pim 76 475
2c85f9ac 4 9,4,19,44 22 9,4,71,21 41086 6/tcp 3073
3d7943ff fe80::200:fff:fe83:4000 0 fe80::200:fff:fe83:4000 0 1966 224 0 0 2 1965 17/udp 117326676 4 9,4,70,19 137 9,4,71,255 157 17/udp 7 61202 Complete...
    
```

■ Domains, Cluster, Applications, Services, QoS and their relationship among each other are automatically recognized



IBM has not only a lot of internal knowledge and experience to enable TCP/IP based products IPv6 ready, but can offer a wide portfolio of IPv6 Services like

- **IPv6 Strategy Consulting**
- **IPv6 IT Infrastructure Readiness Visualization and Documentation Service**
 - As-Is IT Infrastructure scan
 - Data flow analysis
 - IPv6 Gap analysis
- **IPv6 Activity Roadmap**
 - IPv6 Quality of Service
 - IPv6 VPN concept
 - IPv6 Security (policies for router, firewalls etc.)
 - IPv6 Know How / Training
 - IPv6 Testplanning (define testbed, use cases etc.)
 - IPv6 Transformation/Deployment planning
- **IPv6 Education by IBM Technical Education&Competence Center (TEC)**

IBM and IPv6 in Germany

- IBM is **founder & active member** of the German IPv6 Council since 2007
- IBM **strongly supports the IPv6 Roadmap** for Germany, which is prepared by the German IPv6 Council to introduce IPv6 in the next two or three years Germany
- IBM acts as **sponsor in the International IPv6 Application Contest 2009** in the implementation category to support the generation of new applications, which help determine how to introduce IPv6, the internet of the next generation

