Cooperation Partners

Citkomm

The main goal of the German pilot is the transition to IPv6 of Citkomm's own data centre. All parts of the network and infrastructure will be evaluated regarding their ability to communicate via IPv6.

Fraunhofer FOKUS

The research institute has already gained experience in evaluating IPv6 for governments by creating IPv6 profiles and transition methods on behalf of the national federal government.

Support for application vendors

Infrastructure for application validation

As part of the pilot laboratory environments have been established and will be offered to application vendors. Thus they can prove the IPv6 readiness of their applications and benefit from the existing infrastructure:

GEN6 laboratory @ Citkomm
eGovernment lab @ Fraunhofer FOKUS

Initially targeted partners are suppliers of applications running in Citkomm's data centre. Beyond that, the laboratory environment will eventually be available to additional interested suppliers of application software.

Capabilities

> typical infrastructure for date centre installation and
> municipal local network installations
> Integration and interfaces to other applications
> - infrastructure components
> - middleware components
> - applications
> - backend components
> - security considerations

ABOUT GEN6

This pilot is supported by the European Commission as part of the project »Governments Enabled with IPv6« (GEN6). GEN6 is about stimulating EU-wide deployment of IPv6 by means of best practices and guidelines.

> National pilots to take a step forward in IPv6 deployment in different sectors

> Cross-border pilots to demonstrate EU-wide interoperability of IPv6

> Communication activities and road shows to ensure dissemination in public administrations and with other relevant stakeholders

Contact

Citkomm
Griesenbraucker Str.4
58640 Iserlohn

Martin Krengel
Tel.: +49 2371 787 104
Krengel@citkomm.de
www.citkomm.de

Fraunhofer-Institute for Open Communication Systems
FOKUS
Kaiserin-Augusta-Allee 31
10589 Berlin

Uwe Holzmann-Kaiser
Kompetenzzentrum eGovernment und Applikationen
Tel.: + 49 30 3463 7217
uwe.holzmann-kaiser@fokus.fraunhofer.de

DATA CENTRE TRANSITION

German IPv6 Pilot
Citkomm / Fraunhofer FOKUS

Future Network for municipal IT services

Citkomm is a municipal data centre operator, serving several local governments in North Rhine Westphalia, Germany.

Fraunhofer FOKUS contributes experience in infrastructure component evaluation and support in testing application setups.

Starting point

Existing infrastructure

The Citkomm data centre and its network have grown over the years. The key factors of the starting point are:

> - Regional network with more than 750 locations
> - Several dozen applications with strong focus on municipal business applications

Drivers

Different challenges drive the transition to IPv6 for local governments:

> - Citizens get IPv6 addresses from Internet providers
> - Municipalities need to deepen their cooperation
>   - Foundation of competence centres (one for many)
>   - Shared services
> - Data centres need to consolidate and cooperate
>   - Networks must be connected
>   - Address conflicts must be resolved

The introduction of IPv6 presents the opportunity to reduce several network connection projects to one (re)numbering project – transition to IPv6.

Implementation strategy

Focus on the customer front end

Implementing IPv6 in all components and applications includes serious challenges. Some applications, especially those with legacy cores, will never support IPv6. Nevertheless the customer front end can be enabled for IPv6 by:

> - Using proxy systems and other encapsulating techniques
> - Terminal services
> - Backend networks
> - Use of dual stack setups
> - Keep legacy systems operationally unaffected as far as possible
> - Update existing systems
>   - Central parts of the Citkomm network are based on Linux appliances with easy update opportunities
>   - Current operating systems for servers and clients support IPv6 out of the box
> - Prioritisation of publicly available services

Affected components

Affected infrastructure areas

The GEN6 pilot affects the whole infrastructure of the Citkomm data centre. The main areas and the expectations are described as follows:

> - DMZ
>   - Standard web technology
>   - Reverse proxy for third party applications
> - Application Backbone
>   - Wide diversity of applications
>   - Numerous legacy applications
> - LAN Citkomm
>   - Current Linux Server
>   - Client Migration to Microsoft Windows 7
> - LAN Customer
>   - Microsoft Windows Server > 2008
>   - Client Migration to Microsoft Windows 7
> - Network
>   - Citkomm's Linux appliance supports IPv6
>   - Connection to the Internet / providers' ability to deliver/connect IPv6
> - DOI (German national government backbone network)
>   - Successful Pilot of IPv6
>   - Introduction into production network has started
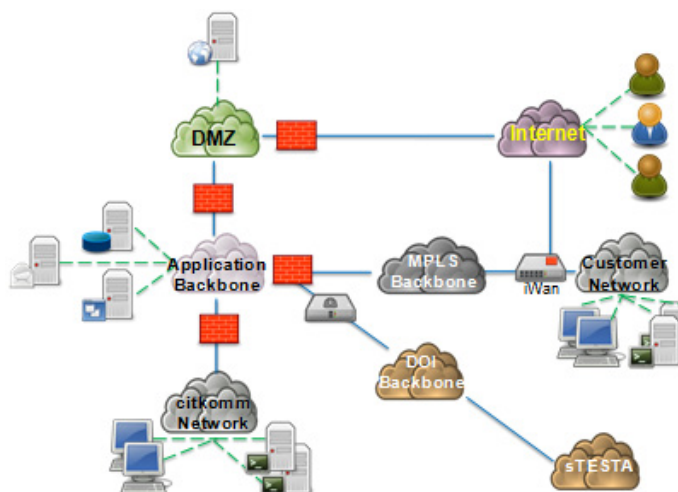
Citkomm enables infrastructure and applications for IPv6

> - Dual stack implementation
> - Covering all areas of the data centre network
> - Extending into a customer site network
> - Installation preferred in place, adding value to the existing production systems

> - Field tests for well known municipal business applications

> - Development of
>   - proven solutions
>   - best practice
>   - knowledge base

The pilot will show how an IPv6 transition can be mastered in a real world heterogeneous IT infrastructure.

Challenges

Special challenges for governmental and municipal business applications

> - Public governments use a multitude of highly specialised software
> - Most suppliers are focused on one single application
> - IT development is focused on the professional user and functionality for the task to be solved
> - Little emphasis on administration and software design
> - Network innovations like IPv6 sometimes out of focus
> - Several applications contain legacy cores or are entirely based on legacy technology