

Generic Server Hosting Facilities

Hanze Talents Leading the Change MAPS



1 Executive summary

Starting this year the ICT department is providing services for research and development projects part of the education program run by Schools at Hanze University of Applied Sciences.

The purpose of this service is to provide better IT facilities for these Schools. The Hanze University IT department provides a safe and flexible environment for Schools to run their R&D projects. The risk of data loss due to legal and technical issues is minimized.

The demand for these services first rose in the projects 'Hanze Talents Leading the Change' and 'MAPS', new are following. These projects asked the IT department of Hanze University to provide them with a hosting environment that fits their needs. They want to have a more sustainable IT solution which provides them with a number of services, for instance backup and recovery of data.

The Hanze University IT department created a separate Virtual LAN (VLAN) where the research and development servers are positioned. This is a VLAN with a DMZ and a secure zone. The latter will be used to store user and research data. Accordingly an easy and transparent process is being installed in order to easily create new servers when necessary.

Hanze Talents Leading the Change and MAPS both have requested 3 servers which will be delivered at last on January 31st 2012. Two servers are located in the DMZ for client and application functionality. One server is located in the secure zone for storage of user and research data.

2 Problem statement

In order to perform research and development projects with internal and external partners the network infrastructure has to partially redesigned and reconstructed.

The School of Computer Science commits itself to perform more and more challenging research and development projects to accommodate students in satisfying them in their learning needs and challenging them for excellent performance. Part of this is running projects with partners inside and outside Hanze University. This demands a state of the art facility which on one side allows the students to constantly show the progress of their work. Which on the other side it allows the partners to follow progress and enables them to give feedback during the proceeding in progress.

Currently only facilities are available to facilitate projects inside the School of Computer Science boundaries. This disqualifies the School for some of the more challenging projects available in the market. Not because of their knowledge and skills but because of the lack of supporting facilities. In this particular case both the projects aren't able to communicate.

3 Alternatives

There are several alternatives to the above formulated problem:

- All research and development projects arrange their facilities by themselves. One of the ways to be able to participate in research and development projects is to let projects arrange their own facilities that accommodate their needs.

There are a several issues with this approach. One is that of intellectual property. As there are

limited means of making a considered decision of what is a proper facility for a project. The risk is that intellectual property can reside everywhere: somewhere in the cloud, on a leased server, on a workstation or somewhere at a guest server at somebody's attic (which is an actual situation we are confronted with). The problems associated with this solution are that Intellectual Property can't be protected sufficiently. There is no control over backup and in case of disaster of what nature over a proper restore. Another important aspect is that there are no hard means to enforce proper access and control privileges. Meaning that only the people who need access get their proper authorization.

In terms of an alternative, this is a bad one.

- Integrate the project facilities integral as part of the IT infrastructure of Hanze University. Internal regulation at this moment prohibits the integration of experimental or research and development hosting facilities. This regulation is with reason. In the past network suffered severely from conducted experiments. Restoring this old situation without proper measures isn't good one. If no proper technical measures can't be enforced, it depends on human agreement. This is proven to be a very weak link.

As one of the alternatives this alternative is only usable if regulations can sufficiently be enforced technically. This results in a complex and hard to maintain infrastructure where logical separate elements are gathered together. There is also the continuous risk that researchers, students, external participants get or enforce access to systems of Hanze University that are the vital for running its business.

- Create a separate infrastructure that is seemingly part of the Hanze University Infrastructure for server hosting. This alternative separates all elements in the IT infrastructure that aren't logically connected and puts them in an enclosed environment. This allows technical means to control the effects of experiments that may exceed normal limits. It allows to control proper access control and eventually connect is to the access control mechanism of Hanze University IT infrastructure. Intellectual property is preserved within the boundaries of Hanze University and can be archived for later access.

From all the presented alternatives, this one accommodates the requirements the best.

4 Conclusion

Considering all the challenges versus the benefits the formentioned alternatives give, the described alternative 'Separate Infrastructure seemingly part of the IT Infrastructure: server hosting'. Customer needs are best served by this solution. As being part of the IT Infrastructure of Hanze Community, high availability of the network infrastructure is guaranteed, currently 99,9999% availability. Backup and restore in case of disaster recovery are well defined and available within reach. Intellectual property resides within Hanze University boundaries. There is a huge freedom for experimenting, research and development, without interfering (normal) educational and backoffice processes.

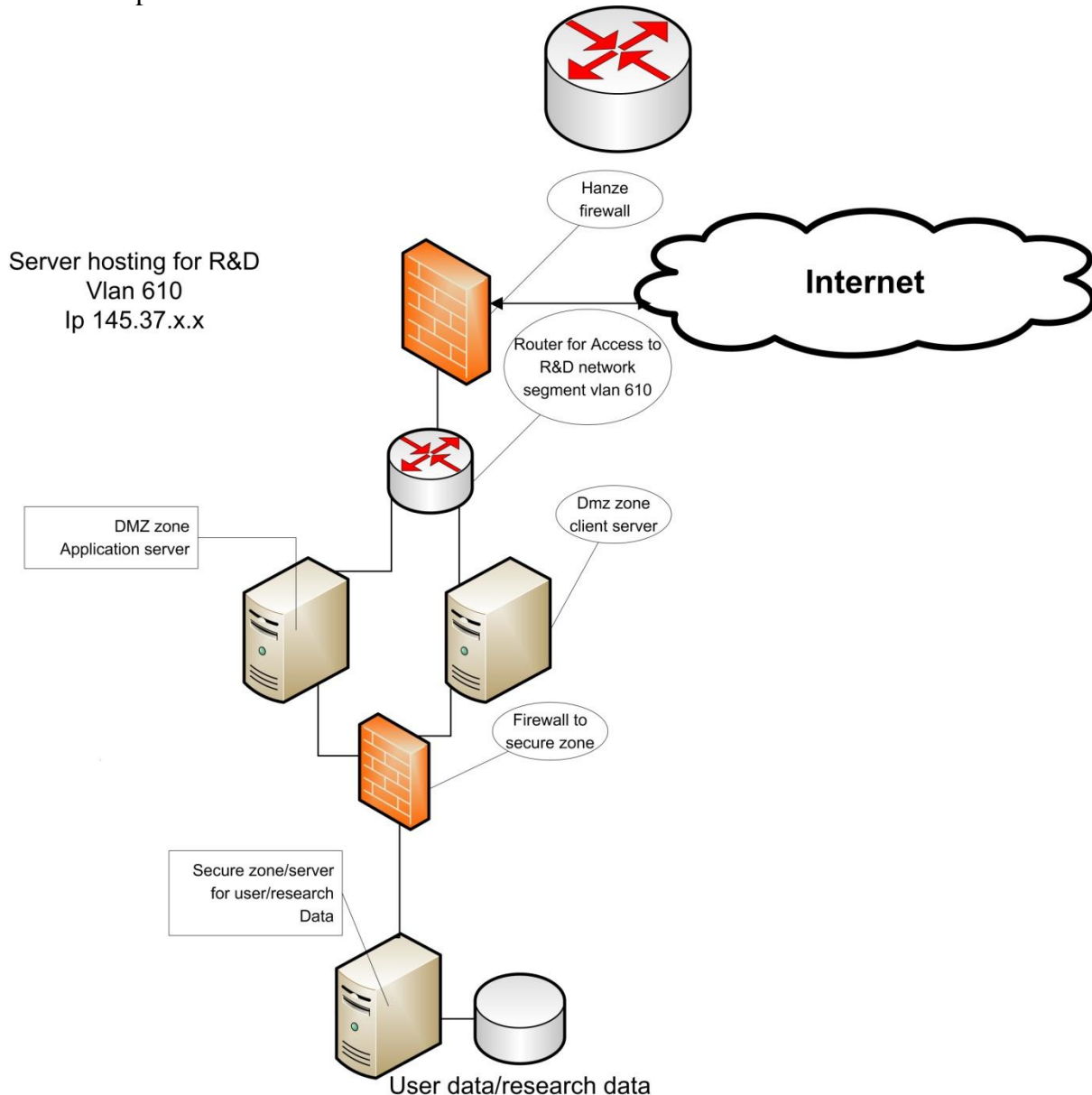
5 Implementation

This picture shows the proposed solution. It isolates the hosting for research and developments projects. It ensures continuity, backup and restore, accessibility from inside and outside Hanze University IT

infrastructure and proper access control. Furthermore it gives the Schools flexibility in the way they want to setup their environments. Considering intellectual property, Implementation is divided in 2 phases.

Phase 1: inventory of customer needs and designing the solution based on supplier building blocks. This phase is almost completed.

Phase 2: implementation of the technical solution. Describing the service as part of the internal servicing process and as part of the services provided by the IT department. Launching the service to the customers. This phase has to be started.



This drawing is a simplified map of the infrastructure that is being created for research and development for the Hanze Talent Leading the Change, the MAPS project and others. It consists of 2 web/application servers and one database server. There are 2 zones, the DMZ which is partial accessible from the internet and a secure zone which is not accessible from the internet. All user data will be stored in the

secure zone. This infrastructure is provided by the IT department of Hanze University of Applied Sciences.

6 Participants

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IT Department	Bert-Jan Klaren (Project Manager) Johan Wensink (Information Architect) Dirk Pijl (Service Manager) Raymond Dagelet (System Manager) Jurgen Zeedijk (Service Manager) Carolien Wolff (Policy advisor) Michel Sondagh (Network Specialist) Peter Kruit (Systems Specialist) Daniel Bareld (Process Manager) Jeroen van der pLuijm (Capacity Manager) Henk Hoekstra (Technical Information Architect)