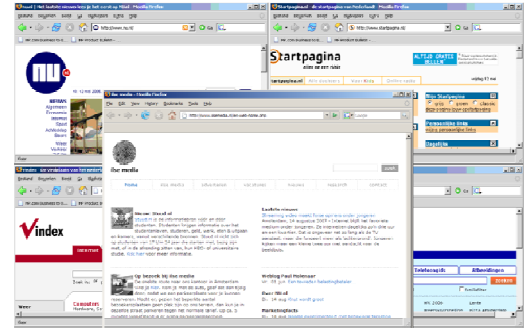




ilse media's challenge

After an extensive selection process the Netherlands' largest internet publisher, ilse media, decided to trust the hosting of its network of 96 websites to Terremark. The publisher is primarily known through by its websites NU.nl, Startpagina.nl, SchoolBANK.nl, Kieskeurig.nl and the search engine ilse.nl. ilse media is a full subsidiary of Sanoma Uitgevers.

Consumers spend more of their media time on online channels. ilse media wants to optimally service this new 'online anytime, anywhere' generation. ilse media's 96 sites differ substantially in size, expressed in the amount of data comprising an individual site. The differences are mainly caused by the differences in goal and technology; it for instance goes without saying that a web sites such as ilse.nl is based on an unusually large database. When expressed in numbers of servers, the individual sites differ even more; a site in its first stage of development may reside on single server whereas a fully matured site may run on a multitude of servers.

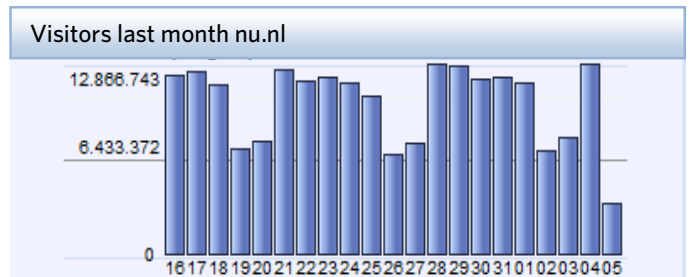


ilse media's question

Jointly the sites of ilse media reach 79% of internet users of 13 years and above in the Netherlands. New developments, such as putting photographs and videos online, brought about a surge in the demand for bandwidth. A web site like NU.nl, providing news coverage, may use up humongous amounts of bandwidth up to some 3 Gb per second. Hence ilse media requires high quality connectivity. In addition ilse media sought after a solution to quickly make available popular information such as pictures, videos, and texts. During high profile news events high number of visitors put a high strain on the web servers. One example is the NU.nl web site that in average serves over nine million pages and on peak days serves almost twenty million pages.

Reach of ilse media

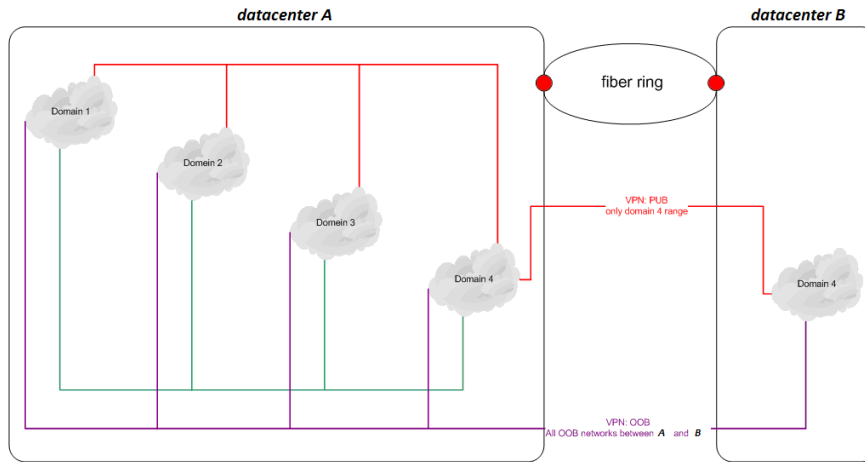
Total reach	78.9%
Reach of men 13+	78%
Reach of women 13+	79.9%
Total absolute reach	8,099,000
Absolute reach men 13+	4,143,000
Absolute reach women 13+	3,956,000
Total pages views (x1000)	888,000
Page views men 13+	489,000
Page views women 13+	399,000



Source STIR, December 2007. Page views and reach are measured on a monthly basis with the online population.

Terremark's solution

Due to the sheer number of web sites and the varying requirements they have regarding the infrastructure, we chose to build a solution that consists of four domains, each with its own degree of availability. Domain one holds the machines that should be managed professionally but that do not require a full-blown uptime guarantee. But the other side of the spectrum there's domain number four; all systems are fully redundant and are divided over two data centres. Its Uptime therefore is guaranteed at 99.99%, measured per month. ilse media's system managers access the environment sent via a separate network so as to prevent production traffic and management traffic from interfering with one another.



Scalability

A modular design makes it possible to add documents of servers, storage, firewalls, and network services. The design even facilitates cloning an entire rack and bringing it live without any service interruption.

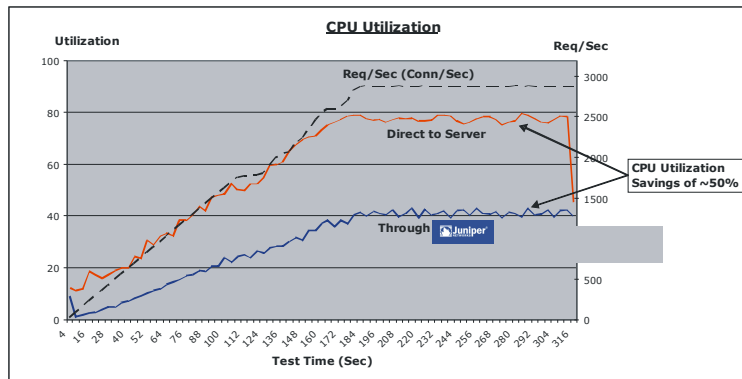
The bandwidth provisioning is also scalable, virtually without any limit. Terremark is independent in its choice of telecommunication companies, enabling us to simply choose the best network suppliers.

And to prevent our connection with the internet exchange point 'AMS-IX' from becoming a bottle neck during unexpected peak loads we have a whopping 15 GB uplink capacity to it.

Major sections of the environment have been virtualized; the servers are 'mere' logical systems running on physical hosts (typically many virtual machines on a single host). When rolling out new systems, ilse media need not wait until the actual hardware has been delivered. Instead, they simply bring live virtual servers that were at the ready in the form of templates. From there on it is a matter of fine-tuning the virtual machine for its specific tasks and taking it into production.

Maximal performance

In the event of calamity, web sites covering the news come under a high load. The many visitors however typically look for exactly the same information... Using intelligent caching-devices it is possible to quickly make available exactly those pieces of information. A caching device will present optional information directly from its cache, instead of having each visitor download that information directly from the web server. As a result each web server is able to service 5 to 8 times more visitors.



Proactive daily management

Similar to the other customers of Terremark, ilse media enjoys nonstop support on the services delivered. Only support issues of the lowest priority are limited to office hours. Whenever a customer contacts us, he or she need not leave a message with a helpdesk employee. All of our engineers are 'third-line' engineers, enabling them to help them quickly and to the point. Without exception all planned maintenance is scheduled in close cooperation with an authorized representative of ilse media. Unplanned maintenance (reactive maintenance) is covered by the Incident Management process.

"Terremark fully manages the infrastructure", says Rik Blog, Operations Manager ICT at ilse media. "This enables our teams to concentrate on the development of applications and new services for our users."



Redundancy throughout the hosted environment

You will find redundancies in all (horizontal) layers of each domain; internal networks and public uplinks have been outfitted redundantly. Operating systems as a standard are installed on a separate RAID disk set while supporting active network equipment such as load balancers, firewalls, and so on, have been clustered. And since there is a substantial overcapacity for the virtualised systems to move them from a failing host to another one, redundancy even apply to this technology as deployed for ilse media.

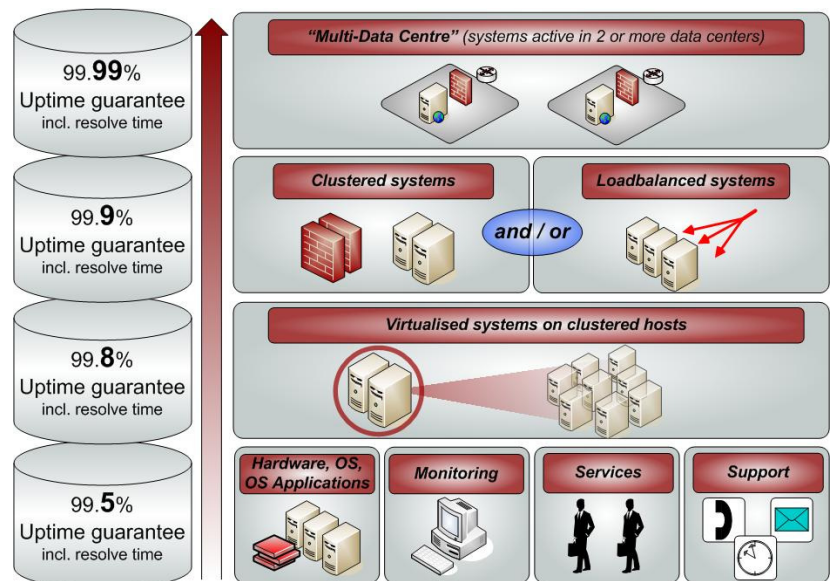
Important data bases are run from clustered systems. This form of redundancy negates the risks of a failing primary server by migrating the full workload to the secondary system, should the primary ever fail. This will go unnoticed by its end-users.

Almost all the front-end systems use loadbalancing, a technology enabling ilse media to withstand the loss of several front-end systems since the remaining machines have sufficient overcapacity. The core systems in addition have been installed in a second data centre; should the primary centre ever suffer a severe disaster, these systems will remain available at the backup data centre. The geographic load balancers facilitating this form of redundancy are fully redundant, too.

Almost without exception, Terremark delivers services to organizations that see downtime as a non option. ilse media clearly falls into this category; the guaranteed availability was an important factor when choosing Terremark. The main pillars under this SLA are the use of unique technologies, years of focusing on relations that truly require high availability and the deployment of high-grade personal.

Guaranteed resolve times

The main reason for ilse media to cooperate with Terremark was our very stringent SLA. Regardless of the type of calamity that takes out to the primary data centre, the backup data centre automatically takes upon the full brunt of the workload.



Focus back on core business

ilse media expects all forms of Internet-capable devices (such as PCs, digital video recorders, game computers, etc) to play an ever more important role in the daily life and, specifically, the consumption habits of consumers.

ilse media's strategy aims to offer a broad services portfolio on any device that is of importance to the consumer.

In doing so, ilse media enables the consumer to relax, make better decisions based on relevant information, and to communicate with others at any given time.