



LIVIGENT implementation in the IT infrastructure of an Internet services provider

Introduction

The Livigent installation in the IT environment of the X Internet services provider and the service supply of monitoring, filtering and reporting the access of Internet content had as a goal meeting the needs of the clients receiving Internet provision services:

- ▶ directing the companies' employees, as well as pupils from the educational institutions towards the controlled access of an accepted Internet data content;
- ▶ managing the bandwidth assigned to each user and department;
- ▶ enforce the legal usage of the Internet downloaded materials.

Implementing Livigent had as result the complete elimination of the access to inappropriate content (XXX, gambling, entertainment, games, illegal content, etc.), the problems due to the occupation of the Internet bandwidth by a small number of users for the purpose of downloading material through file-sharing applications, as well as solving the conflicts with the authorities after users installed unlicensed computer programs, downloaded from the Web.

Approach

The **context** of the X Internet services provider: all its client categories needed filtering services, as a consequence of the need to manage data content reaching the final users (employees, pupils, children, etc.):

- ▶ observing the access rate of sites with inadequate content (XXX, gambling, entertainment, games, illegal content, etc.);
- ▶ downloading illegal content on the Internet, entering under the legislative provisions;
- ▶ using the bandwidth by downloading files for personal reasons.

The increased rhythm of the usage of bandwidth connection with non-adequate content in the IT networks of the Internet provider's clients highlighted the need of **limiting access** to certain categories of data accessed content, monitoring the sites and the allowed categories, studying the users behavior and reporting the accessed sites.

In this situation, the X Internet provider was presented the offer of implementing Livigent in his IT framework, having the possibility of offering data content differenced filtering services for the locations of its clients.



Internet provider specifications

- Location X Internet provider: New York, United States.
- The covered area of the Internet offer spreads in the entire area of United States of America and Canada.
- The types of clients that it has: 65% companies, 15% schools and 20% home users.
- The filtering services offered to clients target the accessed Internet sites, by blocking the content based on the whitelist/blacklist spam categories, viruses, as well as the private networks - without Internet access.

The clients percentage using filtering services:

- 80% of the corporate clients;
- 100% of the educational institutions clients;
- 100% of the home users.

The average traffic data rate registered by the provider is over 200 Mbps in/out;

The types of connections allowed are the following:

- Dial-Up
- T1/E1
- DSL
- Optical fiber

The number of active IPs on the average in the following timelines:

- 9a.m – 5.00p.m: 3/4000 permanently active IPs
- 5p.m – 9a.m: 2/3000 permanently active IPs

Hardware system configuration to implement Livigent

- processor: 4 x Intel Xeon E5335 @ 2.00GHz
- cache size: 4096 KB
- memory: 4096 MB RAM
- motherboard chipset: Intel Corporation 5000
- video card: ATI Technologies Inc ES1000
- network card: 2 x Broadcom Corporation NetXtreme II BCM5708 Gigabit Ethernet (rev 12)
- hard disk: 72, 7 GB



The solution

The Livigent Internet content filtering system is an innovative solution for managing the Internet access for environments ranging from enterprise customers (including Internet service providers) to public institutions (like schools and libraries) to home users. Livigent is designed to handle different connection types and to flexibly allow specific filtering policies.

-  **content-based filtering** - the system analyzes each requested page's text content before
-  it reaches the Web browser and acts based on the **administrator-defined policies** (allow, block or coach);
-  **multiple layers of filtering** - Livigent offers multiple layers (methods) of filtering based on: text, image, URL, MIME type and protocol;
-  **image altering** - a new feature introduced by Livigent, image modification allows for on-the-fly recoloring of pictures which contain colors similar to the skin color;
-  **bandwidth management** – Livigent includes traffic shaping: specifying the maximum bandwidth available per user;
-  **monitoring, logging and reporting** – the administrative users have access to detailed logs and statistics about the local traffic recorded by the system;
-  **multilanguage support** - Livigent supports filtering of content from six languages: English, French, Spanish, Russian, German and Romanian;
-  **ease of use** - the system is designed to make setting up and configuring easy while not compromising the range of features or the filtering performance;
-  **reliable appliance** - the hardware appliance is able to meet the requirements for stability and scalability.

In the IT environment of the X Internet provider, Livigent was **installed** on a private virtual network having a low priority for the back-up route. It was logically **placed** between the border router and the first hub of the client.

Reactions

Changes in the functioning of the IT environment after implementing Livigent: it was not detected a fluctuating decrease of the data transfer after the activation of the Livigent filters. There were made tests to identify the loading degree, being placed testers in locations of different testers.

There have not been detected traffic delays due to Livigent. The functioning mode of the product was stable, while running the traffic content of the Internet provider's clients: there have not been observed traffic decreases. The computer on which the product ran had most of the time 95% free resources, exceptions being the moments of filtering the images content, when the loading capacity of one of the 4 processors would go up to 100% for a time interval of 200-300 milliseconds.

The monitoring of the traffic content of the clients of the Internet provider: it functioned without any blockings, changing the content according to the modification threshold set by the product administrator. There have not been observed identification and content modification errors on the Internet monitored pages.



Placing Livigent in the IT infrastructure of the Internet provider determined a positive response reaction from its clients:

- the defined content categories and the Internet data flow were monitored and filtered according to the criteria set by the decision makers, to improve the efficiency of the productivity;
- there has been ensured the respect of the internal access policy for Internet access;
- there has been adequately managed the bandwidth assigned to departments, as well as to specific users;
- there has been ensured the respect of the legislative provisions concerning the Internet sharing of a data legal content.

The X Internet provider did not register complains from its clients concerning possible blockings of the Livigent product. The product ran stable, not having syncopes and was well integrated in the IT infrastructure of the Internet provider. Its clients manifested a high level of satisfaction concerning the impact of the Livigent settings applied over their data traffic, together with a positive feedback concerning the modification of the users' behavior in accessing the nonadequate content categories.