



Das Ziel ist klar.

## HAMBURG WASSER protects web applications for customers and employees with airlock

30,000 Hamburg citizens can use the Internet today to find out more about their water consumption patterns, their meter readings and bills; thanks to the online service provided by HAMBURG WASSER. All it takes is a few mouse clicks and customers can inform Germany's largest municipal drinking water supply and wastewater disposal company electronically when they change banks or move house. This online service has been guarded by the airlock Web Application Firewall (WAF) now since June 2006. And another application was placed under the WAF's protective shield in May 2007. Since then airlock has also been protecting some 1,700 company employees who communicate with each other using the Lotus Notes Groupware system.

All HAMBURG WASSER customers can manage their personal data themselves using the online service. This includes granting direct debit authorisation, changing bank account particulars, submitting the meter reading, address changes, viewing the water bill and adjusting the monthly advance payment rates. With the formation of the horizontal company HAMBURG WASSER closes the water cycle in the Hamburg metropolitan region. Affiliated group companies - such as the Hamburger Wasserwerke GmbH (HWW) and the Hamburger Stadtentwässerung AöR (HSE) - focus upon a securing drinking water supply and wastewater disposal at all times. HWW delivers to some two million consumers in Hamburg, 21 neighbouring municipalities in Schleswig-Holstein and supplies five others as a re-distributor with drinking water that originates exclusively from ground water via its 5,500 kilometre long pipe network. The water is obtained from 460 fountains wells in up to 400 metres depth and treated in 18 waterworks. In 2006 they supplied some 110 million cubic metres of water. HSE disposes Hamburg's sewage and that of 28 neighbouring municipalities via its 5,400 kilometre long tidal outlets (sewers). It runs the association of wastewater treatment plants Köhlbrandhöft/Dradenau and 209 pumping stations. In recent years the treated sewage totalled some 145 million cubic metres.

"We wanted to create a centralised, particularly safe access to which future systems can also be connected to secure our SAP-based web applications", recalls Peter Saile, System Planning Manager at HAMBURG WASSER. The Group turned to secunet Security Networks AG, who had already provided consultation on IT security issues in the past. "The advice from secunet, the scope of services and the good references all convinced us of airlock in the selection process", explains Saile.

The system should protect bank account details, addresses and other sensitive customer data reliably and in full from potential external "onlookers".

"Several months down the line, we also gave the same protection to our Lotus Notes email system with the Web Application Firewall (WAF). More systems are set to follow," comments the IT expert. HAMBURG WASSER has an extremely modern approach to web application protection at its disposal with this solution. The security concept is designed to remove all security-relevant points of attack from the outset which may compromise web applications.

Rules for the use of the offered web contents are defined precisely. "Visitors", who stick to these rules can use the offered web contents and services.

### Company Facts

- **Sector**  
Water supply & distribution
- **Revenues 2007**  
€ 454.1 million
- **Number of employees**  
Approximately 2,437
- **Headquarters**  
Hamburg, Germany
- **Service area**  
1,000 km<sup>2</sup>
- **Rohrnetzlänge**  
5,478.2 km
- **Sewage disposal**  
Approx. 400,000m<sup>3</sup> per day

Source: www.hamburgwasser.de / August 2008



Ventilating fungus, Source: HAMBURG WASSER

The authorisation to use the provided services is immediately removed for anyone who moves outside of the defined code of behaviour. "We can attribute the fast success of the project to the good cooperation between HAMBURGWASSER, secunet and the phion airlock team as well as to the close dovetailing between the solution provider and product vendor. This is an example of how the short communication channels between the phion airlock team in Germany and Switzerland really pay off", explains Uwe Demsky, who is responsible for the project at secunet as Key Account Manager.

### Launching the Web Application Firewall

Ten consultant days were planned for the implementation. All in all, the internal effort required for extending the firewall took some 15 days. Saile recalls: "The initial installation ran smoothly and was completed within just a few hours. The basic customizing demanded extensive network knowhow, while basic instruction was required to set up the address areas for frontend and backend and for the system management." Another challenge was the precise definition of WAF filter regulations: "However, final questions could be resolved quickly subsequent to intense product training and with the straightforward support from the phion team." At the same time the airlock validation made weak spots in the web application's source text visible so that they could be resolved simply. And how have the first few weeks with the new online protection been? "The Management interface is clear and easy to use. It would be helpful to view the log information within the web interface - but that feature is included in the new version 4.1 anyway", explains Saile.

Since using airlock for web mail the HAMBURG WASSER employees can download their mails at any time from the Internet without having to worry about undesired intruders. In addition the IT department can also guarantee backend system protection.

### The solution at work

This is how the WAF works in detail: The important, confidential information is transferred via a public network, and thus has to be completely protected against unauthorised attacks.

The Multilevel Filter by airlock monitors the requests to the web application here at different levels. The first step involves testing the individual user's identity and authenticity. Ten filter levels including a network level filter, SSL termination, protocol validation, character encoding and uniform code validation, cookie protection, preceding authentication, blocking attacks, URL-encryption, Smart Form Protection as well as Response Content Filter and Rewriting ensure a strong security network. At the same time the WAF allows the infrastructure to be optimised and streamlined, since the operating system neither has to be configured nor administered and a modification or integration of client or applications software is not required. The Web Application Firewall precedes the web server and thus relieves it of any security tasks. As such, unauthorised requests are blocked automatically by the extensive filtering and non-authorised users rejected by the preceding authentication. airlock is based on the hardened Solaris 10, an extremely robust operating system with secure zone architecture and RBAC support (Role Based Access Control). The System Planning Manager and his colleagues are pleased: "We are really delighted to have found a system designed for these fundamental web application security requirements. Based on the current status, HAMBURG WASSER will continue to monitor its security systems regularly in the future, extending these if necessary. Following the successful implementation of airlock the path is now free for further web applications such as Internet portals for electricians and property management companies, for example", summarises Saile.



Peter Saile  
System Planning Manager at  
HAMBURG WASSER.