

# Increased security and availability for the Slovak Tax Directorate's portal



## The company

Tax Directorate of the Slovak Republic

## Line of business

Management and application of specific tax regulations, supervision of the Tax Offices' activities

## Number of employees

5 698

## Requirements

- \* Optimization of the Tax Directorate's portal usage
- \* Firewall solution with a high availability

## Aim of the project

- \* Significantly renovate basic components of the network's infrastructure
- \* Maximize the performance and availability of applications for taxpayers
- \* Replace the old software firewall with a new hardware solution

## Solution

- \* Two separate but related projects
- \* Replacement of soft-balancing with a hardware load-balancer
- \* Implementation and configuration of Cisco ACE 4710 switches
- \* Centralized Cisco ASA firewall solution (called "Spiker") with a high pass-through rate

## Result

- \* Effective redistribution of server usage
- \* Significant improvement in the availability of applications to citizens
- \* Trouble-free system for electronically filing tax returns

## Situation

One of the main tasks of the Tax Directorate is to ensure a functioning system for filing tax returns. In response to the growing trend of digitalization, since 2007 the Tax Directorate has offered both physical and legal persons the option of filing tax returns electronically through the Tax Directorate's portal and eDane application.

According to statistics, it is possible to claim that almost half of taxpayers deal with their tax-return obligations during the last three days, between March 27th and 31st. During this period, the Tax Directorate is forced to prolong its opening hours because of the huge onslaught of people. The internet portal as well faces a high amount of requests during this period.

The Tax Directorate of the Slovak Republic faced a serious problem in 2010 (during the filing period for 2009 tax returns) when it had to expand the opening hours of all tax offices because of the limited operation of the Tax Directorate's internet portal. A few days before the tax return deadline, the Tax Directorate's web page did not function properly, which was the main reason why taxpayers had problems filing their tax returns.

"The slowdown and possible temporary unavailability of the portal are caused by the simultaneous log in of tens of thousands of users to the

system. The Tax Directorate and application provider are working 24 hours a day on diagnosing and eliminating the problem," said Mr. Dobák (Tax Directorate of the Slovak Republic) in March 2010.\*

At that time, the portal of the Tax Directorate operated through several servers which ensured the receipt of requests and their subsequent processing. Regarding electronically filed tax returns, the requests were processed through a software solution (software load-balancer), which distributed requests among individual servers.

However, the software solution did not guarantee a sufficiently effective and optimal distribution especially when faced with a high number of requests; thus, the system very often did not work properly or collapsed completely. In the last days of March, the portal of the Tax Directorate became a bottleneck which very significantly affected and functionally limited the availability of services for taxpayers.

\* Article published at [www.hnonline.sk](http://www.hnonline.sk), SITA, March, 30, 2010; "Problems with internet forced Tax Office to prolong its opening hours" (<http://hnonline.sk/ekonomika/c1-42061680-problem-s-internetomdonutil-danovy-urad-predlit-uradne-hodiny>)







As a state administrative office, the Tax Directorate handles extremely delicate data, such as the financial or personal data of taxpayers, daily. The Tax Directorate of the Slovak Republic is conscious of the importance and confidentiality of this kind of information; therefore, it puts an increased emphasis on security.

The system for protecting sensitive information thus includes gates for secure access to the Internet and for citizens' secure access from the Internet to the Tax Directorate's application servers. In the past, these services were secured by a software firewall running on the Solaris operating system.

However, this system consisted of only one device, which represented a huge risk if it failed. If serious problems occurred, there were no other components that could automatically replace it and ensure continuous operation. Furthermore, due to its age, the former software solution posed an escalated risk because of the low availability of updates and technical support.



The former system encountered occasional outages, which created a relatively serious security problem due to the type of information with which the Tax Directorate works.

These facts and risks were the main reasons why the Tax Directorate of the Slovak Republic started to consider replacing the previous systems with a modern and more effective solution. Two separate but related projects were planned based on the technical requirements of the Tax Directorate, and in accordance with the law of public acquisition, two public tenders were held. Due to its proposals with the best offers for both projects, Soitron won both tenders.

## Project solution

The solution to the Slovak Tax Directorate's two separate issues was actually, from our point of view, one complex project to ensure the security and optimization of the Tax Directorate's network and web services for citizens. "Thanks to Soitron, the Tax Directorate gained an appropriate and properly dimensioned solution that is not directly visible to users but ensures the trouble-free operation of all application and user services," says Gabriel Blesák, account manager at Soitron.

The solution to the problem with the Tax Directorate's web portal usage was achieved through the management of the portal load by implementing a hardware load-balancer. To prevent security risks, the new Cisco ASA firewall architecture Spiker, which provides high availability, was installed for the Tax Directorate of the Slovak Republic.

### \* Management of the web services' load

The main purpose of this part of the project was to replace the former software load-balancer with a hardware solution. The implementation and configuration of Cisco ACE 4710 security and optimizing switches were part of the project. The major goal was to ensure an intelligent and especially effective distribution of the requests to the Tax Directorate's servers. Currently the system is set up in such a way that during the return filing process, the hardware load-balancer ensures the distribution of a particular request among servers in the first line, which subsequently move this request to the servers in the second line, where it is processed.

### \* High-availability firewall platform

The foundation of the central firewall solution was the replacement of the former software platform with a more reliable and up-to-date hardware solution, which should ensure an increase in performance. The main subject of this contract was the delivery, connection and configuration of the relevant equipment, and it was also one of the first installations of the Spiker firewall in Slovakia.

The solution consisted of two units of Cisco ASA 5585-20 equipment. In case of primary (ACTIVE) module failure, the reserve (STANDBY) module will replace it. In contrast to the former solution, this solves the problem that could occur if a functioning component fails.

The current solution is redundant, which means that the two installed hardware components are independent but in back-up configuration. During the implementation of these hardware components, it was necessary to ensure that the solution be completely compatible with the existing network infrastructure built on Cisco Technologies.

The solution also consisted of installation, configuration within the existing infrastructure preserving all of its security rules, delivery of all necessary licenses, and testing and operator training. The transition to the new operating system was divided into several phases.

During the migration process, it was necessary to ensure cooperation with the Solaris system formerly used by the Tax Directorate of the Slovak Republic. Soitron's expert team had to ensure the adequate setup and update of the security policies and optimal rules reflecting the real needs of the Tax Directorate.



*"Thanks to Soitron, the Tax Directorate gained an appropriate and properly dimensioned solution that is not directly visible to users but ensures the trouble-free operation of all application and user services."*

Gabriel Blesák,  
Account manager at Soitron a.s.

## Results

Soitron's solution ensured the trouble-free operation of the Tax Directorate's portal, especially in times of huge demand, as well as the appropriate setup of the security system. The hardware load-balancer provides effective distribution of the requests sent to the web portal of the Tax Directorate, which was especially evident at the end of March 2011 when during the electronic tax return filing process for 2010 (through the "eDane" application), no problems were registered.

And this is true even though the number of electronically sent tax returns increased almost 6 times compared to the previous year. While in 2010, there were 20,391 electronically filed tax returns, in 2011, 112,732 tax returns were registered. "During the peak time, the 'eDane' application ensured unlimited access to the current tax forms. This is the reason why the critical situation from previous years, when thousands of taxpayers were unable to communicate electronically and submit their tax returns through our portal, did not repeat." said a spokesperson of the Tax Directorate, Gabriela Dianová, to SITA in April 2011.\*

\* Article published on [www.itapa.sk](http://www.itapa.sk), SITA, April 5, 2011, "Number of electronically filed tax returns increases from year to year" (<http://www.itapa.sk/elektronicke-podavanie-danovych-priznani-sa-stava-uspesnym/>)



*"The new firewall solution allowed the Tax Directorate of the Slovak Republic to react appropriately to current security threats. The modern and high-performance firewall eliminated existing limits and significantly increased the effectiveness of services provided by the Tax Directorate to fulfill its role."*

Maroš Rajnoch,  
Product manager at Soitron a.s.

Also in reference to the hardware firewall solution, it is possible to note its significant added value, which increased the security operating system's performance. The main advantage is that this solution consists of two separate components which guard one another as the standby module can replace the primary module if it fails. The replacement of the software solution with a hardware version of a firewall fully covered the services of the former solution and significantly extended its operations.

### Tax Directorate of the Slovak Republic

The Tax Directorate is a government agency that is responsible for the uniform application of tax legislation and the proposal of law amendments; the development, maintenance and operation of the Tax Information System; and the management of the central register of taxpayers, etc. Moreover, it monitors the observance of the rights and obligations of taxpayers.

The most important task of this organization is to ensure the income part of the national budget. For this purpose, Tax Offices conduct tax administration and control, enforce the payment of taxes and provide public services to promote voluntary compliance to tax obligations.

### Soitron

Our company has long been active in the European market as a systems integrator in the areas of IT Infrastructure, Unified Communications, Customer Interaction, Content Management and Security. For more than 20 years, we have been helping companies such as Tatra banka, Slovenská sporiteľňa, Orange, E-On, J&T, Hewlett Packard and many others to grow their business. Our philosophy is to continue moving forward; that makes us the leader in implementing unique technologies and innovative solutions.

This is reflected in awards like IT Company of the Year 2010 and Cisco Enterprise Partner of the Year 2010, and inclusion among the Big Five in the Deloitte Technology Fast 50 (2011). Currently we have more than 500 international experts working for us, including professional teams in the Czech Republic and Romania.

For more information, please visit [www.soitron.sk](http://www.soitron.sk).