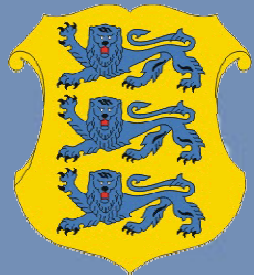


Interoperability, identity management and trust: the case of Estonia

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Estonia:

Capital: Tallinn

Inhabitants: 1.4 mln

Territory: 45,226 km²

EU member since
May 1st, 2004

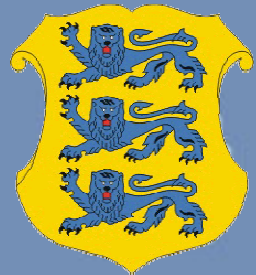
NATO member since
April 2nd, 2004

Gov. declared IT test
site 1996



E-stonia

- ICT expenditure on IT (% of GDP): 2,9% (2006)
- Households with Internet access: 50 % (2007)
- Enterprises with Internet access: 94 % (2007)
- Individuals using the Internet: 59 % (2007)
- E-government on-line availability: 80% (2006)
- Mobile phone's (per 100 inhabitants): 136 (2007)
- Share of digital transactions in banks: 98% (2007)
- Use of e-banking: 24,5% of all transactions (2007)



Databases / information systems

Banks



⋮



Security server

Security server

Security server

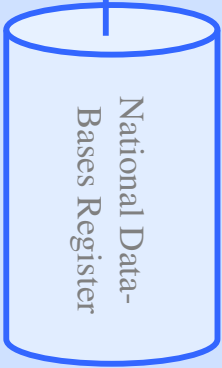
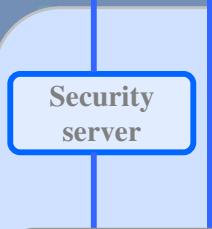
Security server

Security server

Security server

Security server

Internet - X-road



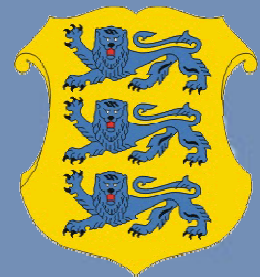
Tools centrally developed by the State, i.e. the State Portal

X-road center



Cyber attacks

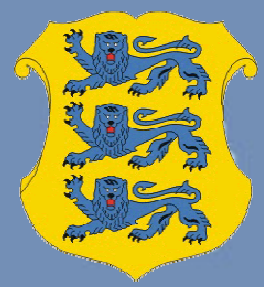
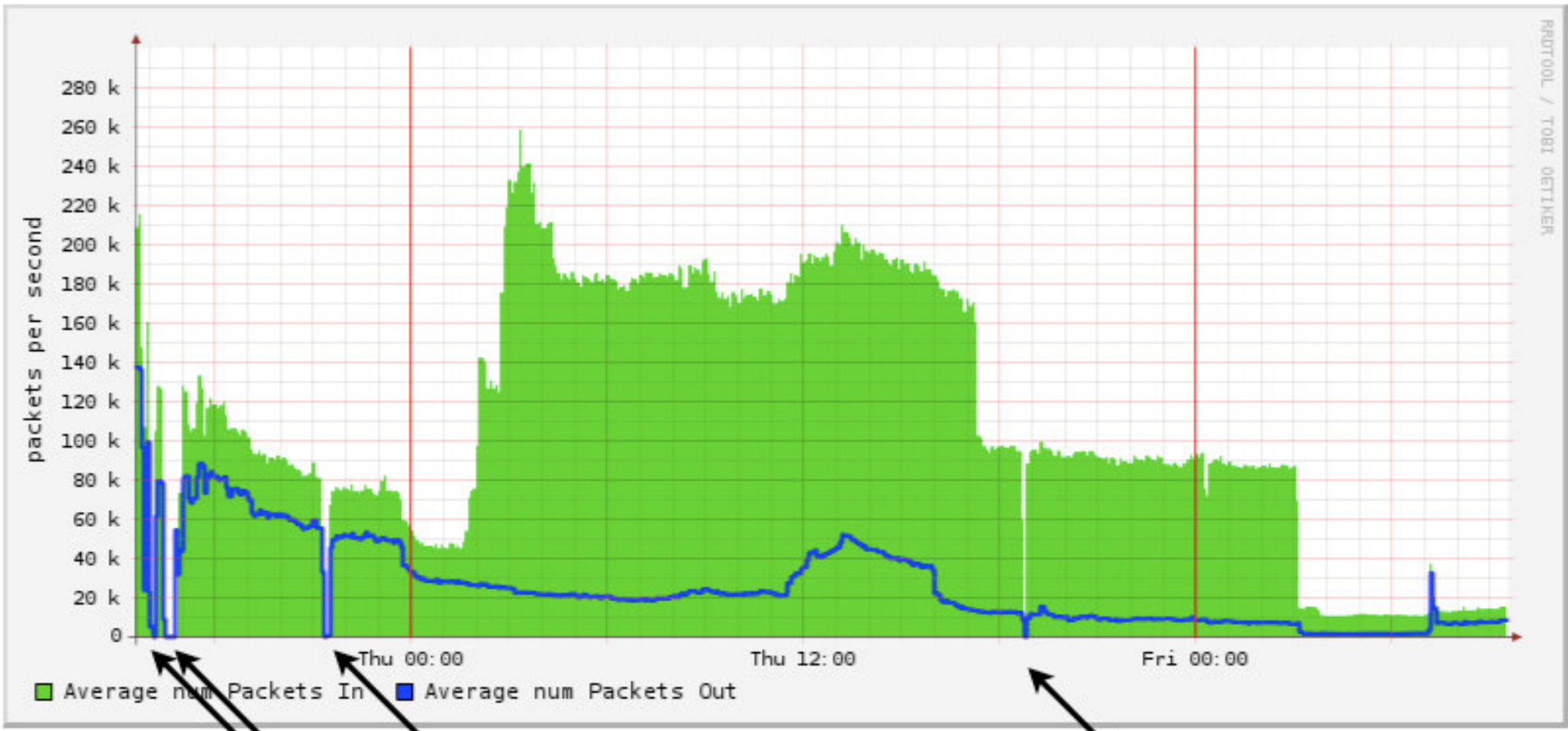
From April 27th to May 19th 2007



Calls and instructions

The image shows a multi-monitor setup with several browser windows open, illustrating a DDoS attack on the Estonian government website.

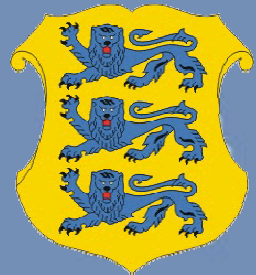
- Top Left Window:** A forum post on http://www.ufa-sretnie.ru/plugins/forum/forum_viewtopic.php?1458. The post discusses the Estonian government's actions and provides instructions for a DDoS attack. The instructions include: "Начинаем в 9 часов утра по Москве: включаем комп, подключаемся к Инте", "Пуск -> Выполнить (или жмем Win+R)", "ping -n 5000 -l 1000 www.valitsus.ee", "ping -n 5000 -l 1000 www.riik.ee", "ping -n 5000 -l 1000 www.reform.ee", "ping -n 5000 -l 1000 www.president.ee", "ping -n 5000 -l 1000 www.nis.ee", "ping -n 5000 -l 1000 www.riigikoju.ee", "ping -n 5000 -l 1000 www.riigikontroll.ee", "ping -n 5000 -l 1000 www.oiquskantsle.ee", "ping -n 5000 -l 1000 www.riigikantsele.ee".
- Top Right Window:** A banner with the text "Our Honour Our Freedom Our Victory ..." and "ВЕБ ДОЗОР: ЭСТОНИИ ПОЗОР!". It features a Russian military medal and the Russian tricolor flag.
- Middle Window:** A forum post titled "DDoS-атака на сайт правительства эстонии! - Mozilla Firefox" on http://forum.xakep.ru/m_877196/mpage_1/key_tm.htm#877196. The post is dated 28.04.2007 4:20:59 and contains the same DDoS instructions as the top-left window.
- Bottom Left Window:** A "Problem loading page - Mozilla Firefox" window showing a "The connection has timed out" error for <http://www.vm.ee/>. The error message states: "The server at www.vm.ee is taking too long to respond." and provides troubleshooting steps: "The site could be temporarily unavailable or too busy. Try again in a few moments.", "If you are unable to load any pages, check your computer's network connection.", and "If your computer or network is protected by a firewall or proxy, make sure that Firefox is permitted to access the Web." A "Try Again" button is visible.
- Bottom Right Window:** A forum post on http://forum.xakep.ru/m_877196/mpage_1/key_tm.htm#877196 dated 28.04.2007 12:22:04. The post is by user "asylum" (Junior Member) and contains the text: "Никто не заметил во сколько <http://www.riik.ee/> ушел в даун?", "< Сообщение отредактировано asylum -- 28.04.2007 12:37:26 >", and "Dr. Asylum".



Sites attacked

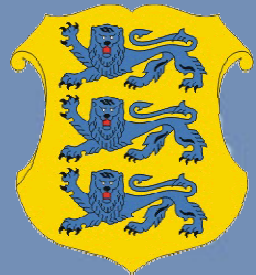
www.mkm.ee (Ministry of Economic Affairs and Communications): unreachable
www.peaminister.ee (Website of the prime minister): unreachable
www.riigikogu.ee (Estonian Parliament): unreachable
www.sisemin.gov.ee (Ministry of Internal Affairs): unreachable
www.valitsus.ee (Estonian Government): unreachable
www.vm.ee (Ministry of Foreign Affairs): unreachable
www.agri.ee (Ministry of Agriculture): reachable
www.envir.ee (Ministry of the Environment): reachable
www.fin.ee (Ministry of Finance): reachable
www.just.ee (Ministry of Justice): reachable
www.kul.ee (Ministry of Culture): reachable
www.mod.gov.ee (Ministry of Defence): reachable
www.pol.ee (Estonian Police): reachable
www.reform.ee (Party of the prime minister): reachable
www.sm.ee (Ministry of Social Affairs): reachable

On May 10 2007 - we lost 50% of milk, bread and gasoline for 90 min!



Conclusions

- Conception of trust changed in the cyber society
- We are very tightly related to cyber room globally and dependent on e-services
- It's easy to organize the cyber attack
- Cyber attacks are very serious threat today and increasing threat in the future
- Critical Information Infrastructure Protection will be very important
- Partnership is important



Thank you for your attention!

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www.riigikantselei.ee

