Internet traffic to and from Egypt on January 27 - 28. At 5:20 pm EST, traffic to and from Egypt across 80 Internet providers around the world drops precipitously.

source: Arbor Networks
Not Unprecedented

- 2 countries have completely blocked internet traffic before this time
  - Nepal - 2005
  - Myanmar - 2007
- Not regionally significant
- Much smaller (population and area)
  - Egypt pop: 80 million
“Shaping the Internet”

- Most countries don't try to “kill” the internet.
- Instead “shape” the internet traffic
  - China's “Great Firewall”
  - Iran govt. blocks Twitter / social networking
  - Slow down internet so as to make it unusable
  - Filter “objectionable” sites / traffic
- 40(ish) countries employ this technique at a governmental level.
Regionally Significant

- One of best infrastructures in Africa
- More than a dozen ISPs (Internet Service Providers)
- Serves as high-speed path to/from Europe
Egyptian Internet

- Not privatized in same way US's internet infrastructure is
- Controlled by govt. organization
  - Telecommunications Regulatory Agency (TRA)
- In exchange for being allowed to operate in Egypt, ISPs agree to be regulated by the TRA.
How?

- Removed all Border Gateway Protocol (BGP) routes.
- BGP is a set of rules used to establish route between two computers.
- Effect is of removing Egypt from the internet map.
Technically Interesting

- Traffic through Egypt not affected.
- Traffic to & from Europe / Middle East continued to operate as long as destination or source wasn't in Egypt.
- One route left open: Noor
  - Egyptian stock market
  - American University Cairo
  - National Technology Group (IT for aviation, banking, financial services, etc)
  - Also pulled offline 3 days later
- This was not a “pull the plug” type of action
Also...

- Might have started refusing queries from DNS.
  - can't use http://www.egypt.gov.eg/
  - instead, must use numerical IP address.
- Hard to tell if this was intentional action or by-product of removing BGP routes
- DNS is extremely useful and important, but it isn't a “kill switch”
Interesting Food for Thought

• Should the US have a kill switch?
  • Legislation currently proposed to protect against “significant” cyber threats.

• How to still use the internet?
  • Satellite internet with out-of-country provider
  • Phones
    – Dial-up to out-of-country ISP
    – Satellite phone → dial-up.

• Software solutions
  – Google set up system to enable Twitters / posts via voicemail