

Internet Censorship In China

Yang Li

CPSC 557

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Definition of Internet Censorship

Internet censorship is control or suppression of publication of or access to information on the internet.



Golden Shield Project



Administrative Actions

- ◆ Pass Laws
- ◆ Set up oversight bodies
- ◆ Enforce internet real-name system
- ◆ Cooperate with big internet and technology companies
- ◆ Guide public opinion

Pass Laws

公益



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腾讯动态

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- 腾讯公布2013年第二季度及中期业绩【PDF file】
- 中共中央政治局委员、中央书记处书记、中宣部部长刘奇葆考察腾讯
- 腾讯公布2013年第一季度业绩【PDF file】
- 腾讯公布2012年第四季度及全年业绩【PDF file】
- 中共中央总书记、中共中央军委主席习近平考察腾讯
- 腾讯公布2012年第三季度业绩

视觉焦点



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深圳网络
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全网络监察



经营性网站
备案信息



不良信息
举报中心



中国文明网
传播文明



可信网站
身份验证



工商网监
电子标识

Pass Laws

2009年1月15日 ... [李开复](#)已经在谷歌工作了3年零4个月，至今，他依然保持着让员工惊讶的工作精力。当初和他一起开创谷歌中国的几位高层已经相继选择离开，唯有[李开复](#)依然 ...
[news.cdw.com.cn/people/.../20090115_578697.shtml](#) - [网页快照](#) - [类似结果](#)

根据当地法律法规和政策，部分搜索结果未予显示。

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李开复

Google 搜索

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Set up oversight bodies

深圳网络警察
SHENZHEN NETWORK POLICE



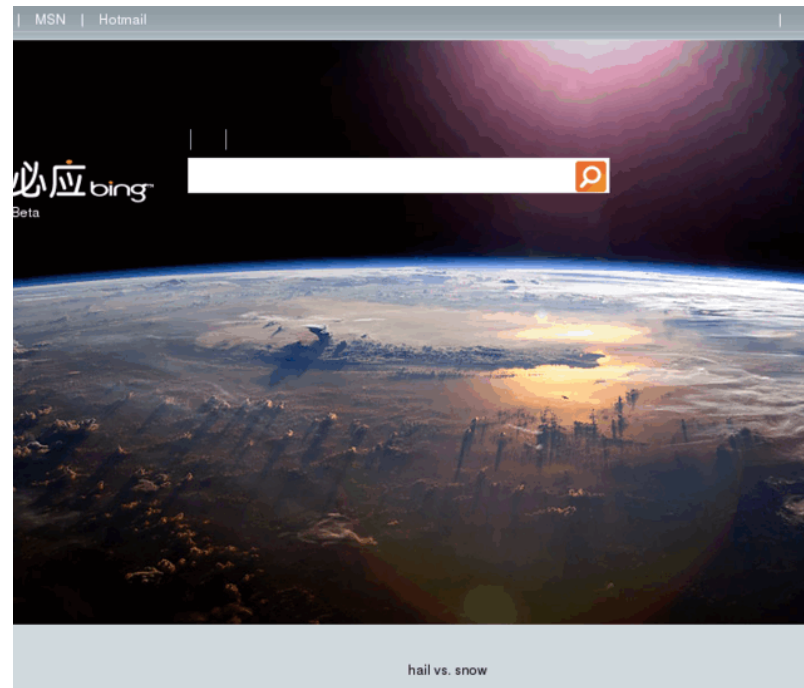
深圳市公安局公共信息网络安全监察分局



Enforce internet real-name system



Cooperate with big internet and technology companies



Guide public opinion

- ◆ Hire internet commentators
- ◆ Build official websites

The Great Firewall of China



Types of Censored Content

- ◆ Politically sensitive information (mostly)
- ◆ Pornographic, Gambling, and Violent Material

Targets of Censorship

- ◆ Search engines
- ◆ Discussion forums
- ◆ Social media websites



Technology Approaches to Censorship

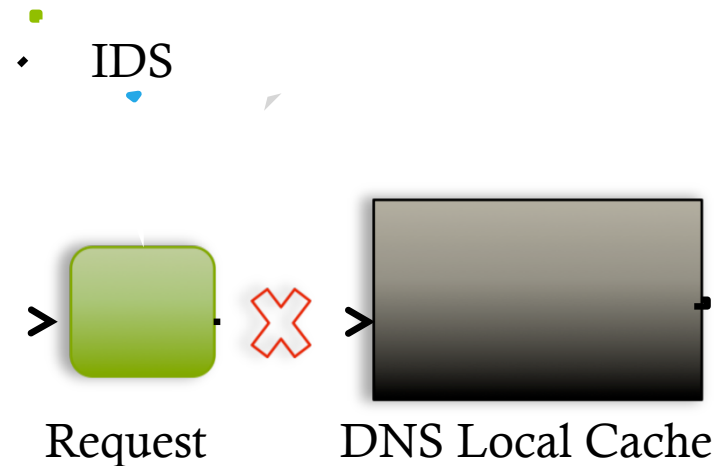
- ◆ DNS filtering and redirection
- ◆ IP blocking
- ◆ TCP Connection reset
- ◆ HTTP Packet filtering

DNS filtering and redirection



Incorrect IP

youtube.com



DNS Server (ISP)

▼
Parent DNS Server

DNS filtering and redirection

OPenDNS & Google DNS ?

```
nslookup -type=A www.youtube.com 129.42.17.103
```

4.36.66.178

203.161.230.171

211.94.66.147

202.181.7.85

202.106.1.2

209.145.54.50

216.234.179.13

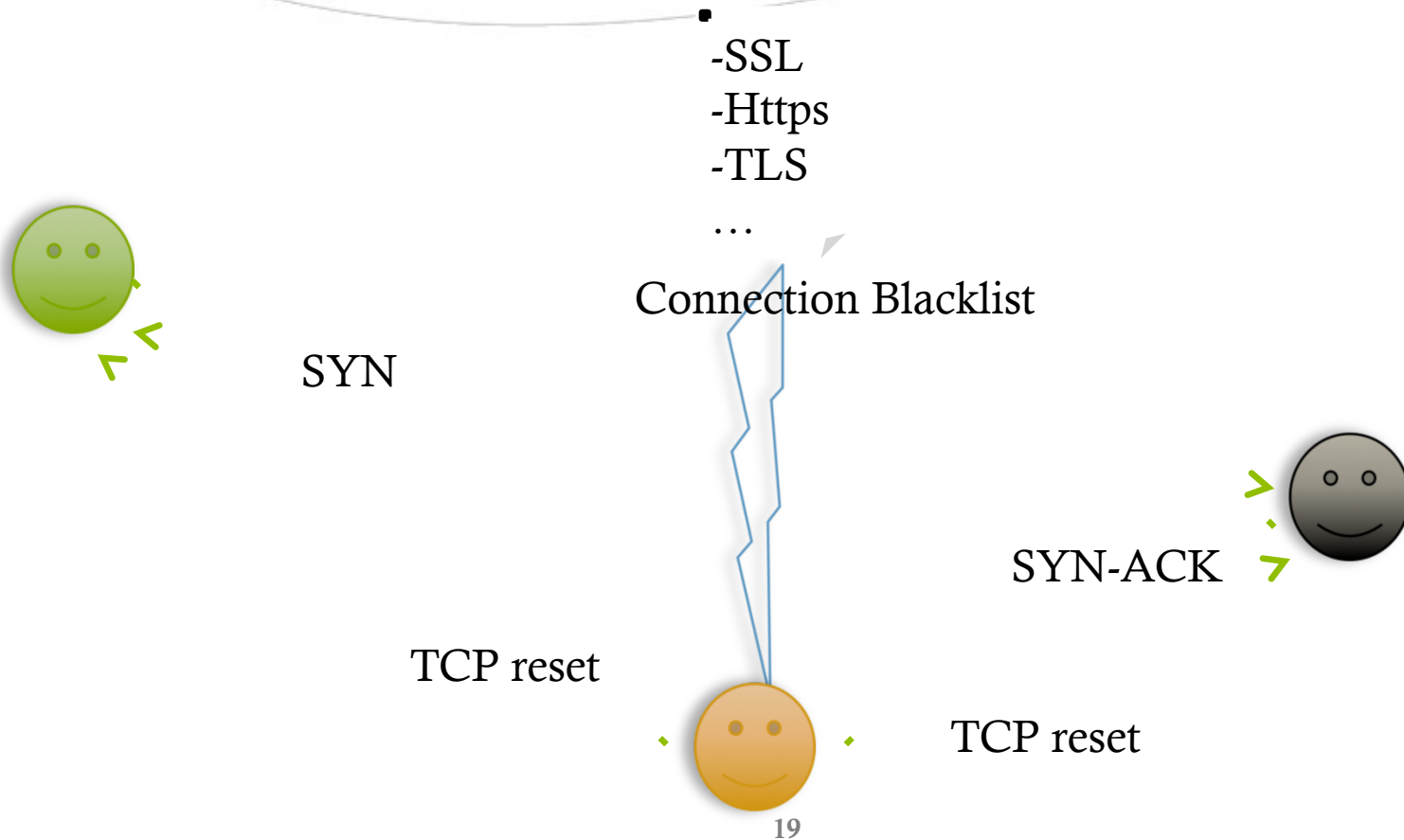
64.33.88.161

DDoS attack!

IP blocking

- ◆ Access Control Lists, ACL
- ◆ Routing table modification
- ◆ Port blocking

TCP Connection reset



HTTP Packet filtering

- ◆ “温”，“习”，“圆” are some of the sensitive characters
- ◆ You do not get a result when search things when the above words are included
- ◆ “温泉” [hot spring]
- ◆ “学习” [study]
- ◆ Both censored

HTTP Packet filtering

“胡” => “古”[ancient] & “月”[moon]

“Hu”

“Gu”

“Yue”

“和谐”[Harmony] => “河蟹” [crab]

both pronounced “He Xie”

Conclusion

- ◆ Pre-censorship
- ◆ Vague standards
- ◆ Strict restrictions on political speech

Discussion

- ◆ Do you think that the Chinese government has acted too harshly on internet censorship?
- ◆ Is it a good idea to eliminate internet censorship in China and allow messages to be transmitted freely?
- ◆ Can you think of a method to get connected with youtube.com in China?

References

- ◆ http://en.wikipedia.org/wiki/Internet_censorship_in_the_People%27s_Republic_of_China
- ◆ <http://www.hrw.org/reports/2006/china0806/index.htm>
- ◆ <http://zh.wikipedia.org/wiki/%E4%B8%AD%E5%8D%8E%E4%BA%BA%E6%B0%91%E5%85%B1%E5%92%8C%E5%9B%BD%E7%BD%91%E7%BB%9C%E5%AE%A1%E6%9F%A5>
- ◆ <http://www.cs.unm.edu/~crandall/icdcs2010.pdf>
- ◆ <http://gfwrev.blogspot.com/2009/11/gfwdns.html>

Thank you

Notes on Class Discussion of Yang Li's Presentation (1)

1. What's going on in Yang's Slide #17?

A user is trying to obtain the correct IP address of youtube.com. Instead of being sent to a real DNS server, his query is redirected to a fake DNS server with the address 129.42.17.103. This fake server replies with one of the other addresses on the slide (4.36.66.178, 203.161.230.171), none of which is the address of youtube.com. This could result in a flood of traffic to those addresses (an unwitting DDoS attack).

2. "Sensitive character" filtering, as on Yang's slides #20 and #21, is a problem in other languages and other countries as well. For example, many schools in the US try to filter out pornography by blocking all webpages that include pictures or names of certain human body parts. In the process, they block many webpages that contain medical and public-health information – even medical and public-health pages that are written and hosted by school systems!

Notes on Class Discussion of Yang Li's Presentation (2)

3. There are well known workarounds for many of the “blocking techniques” that Yang presented. Why aren't they widely used in China?

The first, short answer given to this question was “because the sites from which we could download those workarounds are blocked!” Moreover, the Chinese government is apparently very serious about blocking them and, more generally, about controlling internet use. People who manage to install those workarounds could be put in jail.

4. Possible answer to the first two questions on Yang's slide #23:

Is this really about censorship, or is it about protection of domestic industry? For each of the global internet businesses that is blocked or filtered (youtube, Google, facebook, *etc.*), there is a domestic Chinese equivalent.

5. Answer to the third question on Yang's slide #23:

We couldn't come up with an obvious workaround for the TCP connection reset.