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**From:** Vincenzo Iozzo <[REDACTED]>  
**Sent:** Monday, September 26, 2016 11:56 AM  
**To:** Jeffrey E.  
**Cc:** Joi Ito; Danny Hillis; Reid Hoffman  
**Subject:** Re:

Warning: this is=likely going to be a long essay, but I think it gives some perspective on t=e topic.

The short version is:

I was talking to Joi about this the other day -=I wouldn't pay too much attention to this, Schneier has a long tradition of=dramatizing and misunderstanding things.

That said, buying cloudflare (it's pr=vate) or akamai stock might be an idea because DDos attacks are not going a=aay soon and as a trend they will likely increase.

Also to provide some perspec=ive, he links to this: <https://www.verisign.com/assets/report-ddos-trend=-Q22016.pdf>  
<<https://www.verisign.com/assets/repo=t-ddos-trends-Q22016.pdf>>

If you look at the numbers on page 9 they are an o=der of magnitude smaller than the attack on a, rather unknown to the genera= public, cyber security journalist: <https://krebsonsecurity.=om/2016/09/krebsonsecurity-hit-with-record-ddos/> <<https://krebsonsecurity=om/2016/09/krebsonsecurity-hit-with-record-ddos/>>

<=pan style="background-color: rgba(255, 255, 255, 0);>And we are talking a=verage not median..

CloudFlare was able to absorb most of the attack=on Krebs' website and they probably brought the website down because he wou=dn't be able to pay for the service at that rate anyway. So those numbers t=ere are nowhere close to "probing" the limits as he suggests..

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The more i=teresting aspect is that DDos attacks boil down to two strategies:

- 1) "=-mlication" attacks - which is a text book example of the tragedy of the co=mons
- 2) Force real traffic to happen. This often happens when you compromise a=device (that's what a botnet does). In that sense IoT is particularly dange=ous

(1) Is a good argument for Danny's idea of building a backup in=ernet. The problem there is that a lot of protocols (DNS, NTP etc etc) have=design flaws in that you can generate asymmetric amounts of traffic and for=e the traffic to go to some other destination. (eg: <https://www.us-cert.gov/ncas/alerts/=A13-088A> <<https://www.us-cert.gov/ncas/alerts/TA13-088A>> )

In a lot of cases people leave around the internet vulnera=le servers and those are used for these types of attacks (hence the tragedy=of the common).

(2) Is a much harder problem to solve and to a large extent it wouldn't go away even if we had a different internet.

And (2) is interesting because you don't necessarily need to compromise the target—if you have control of the network infrastructure. For instance, China attacked GitHub by injecting JavaScript into people's navigation session (<http://www.netresec.com/?page=Blo=&month=2015-03&post=China%27s-Man-on-the-Side-Attack-on-GitHub<=a>>). The Javascript code would then reach out to GitHub and DDoS the website.

Computer Science problem aside, (2) is problematic because it leads people to think that things like this:

<http://www.skatingonstilts.com/skating-on-stilts/spiking-the-great-cannon.html>

<<http://www.skatingonstilts.com/skating-on-stilts/spiking-the-great-cannon.html>> &nbsp;are a good idea..

These poor man's attempts at "sanctions" are not—a solution, neither from a diplomatic/political POV nor from a technical one in my opinion.

Sent from my Iphone

On Sep 26, 2016, at 10:40, jeffrey E. <[jeevacation@gmail.com](mailto:jeevacation@gmail.com)> wrote:

<=lockquote type="cite">

[http://fortune.com/2016/09/25/internet-infrastructure-attack/?xid=gn\\_editorspicks&google\\_editors\\_picks=tr=e](http://fortune.com/2016/09/25/internet-infrastructure-attack/?xid=gn_editorspicks&google_editors_picks=tr=e)

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= please note

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