

Your (not so) smart TV is currently busy
with taking down the Internet

Achim D. Brucker

a.brucker@sheffield.ac.uk

<https://www.brucker.ch/>

Software Assurance & Security Research

Department of Computer Science, The University of Sheffield, Sheffield, UK

<https://logicalhacking.com/>

May 15, 2017





Crock-Pot

Crock-Pot SCCPWM600-V2 Wemo Smart Wifi-Enabled Slow Cooker, 6-Quart, Stainless Steel

★★★★☆ ▾ [318 customer reviews](#) | [121 answered questions](#)

List Price: ~~\$149.99~~

Price: **\$129.99** & **FREE Shipping**. [Details](#)

You Save: **\$20.00 (13%)**

In Stock.

Want it tomorrow, May 16? Order within **11 hrs 6 mins** and choose **One-Day Shipping** at checkout. [Details](#)

Ships from and sold by Amazon.com in [easy-to-open packaging](#). Gift-wrap available.

- Adjust cook time & temperature using the WeMo Application
- Can be controlled via the WeMo Application or directly on the unit



AIMOX

AIMOX Smart Wifi Stainless Steel Electric Kettle through Smartphone Remote On/Off Switch and Temperature Control, 1.7 Liter Teakettles Kettle



9 customer reviews | 6 answered questions

Price: ~~\$159.99~~

Sale: **\$99.99** & **FREE Shipping**. [Details](#)

You Save: **\$60.00 (38%)**

Only 7 left in stock - order soon.

Want it tomorrow, May 16? Order within **9 hrs 22 mins** and choose **One-Day Shipping** at checkout. [Details](#)

Sold by [aimox sportband](#) and Fulfilled by Amazon in easy-to-open packaging. Gift-wrap available.



amazon tap

ALEXA-ENABLED PORTABLE
BLUETOOTH SPEAKER

JUST TAP & ASK
NOW WITH HANDS-FREE MODE

Amazon Tap - Alexa-Enabled Portable Bluetooth Speaker

Amazon

★★★★☆ 5,815 customer reviews

| 1000+ answered questions

#1 Best Seller in Compact Radios & Stereos

Price: **\$129.99** & **FREE Shipping**. [Details](#)

In Stock.


Want it tomorrow, May 16? Order within **11 hrs 44 mins** and choose **One-Day Shipping** at checkout. [Details](#)

Ships from and sold by Amazon Digital Services LLC. Gift-wrap available.

BY  **2020** **250,000,000**

VEHICLES WILL BE CONNECTED TO THE INTERNET

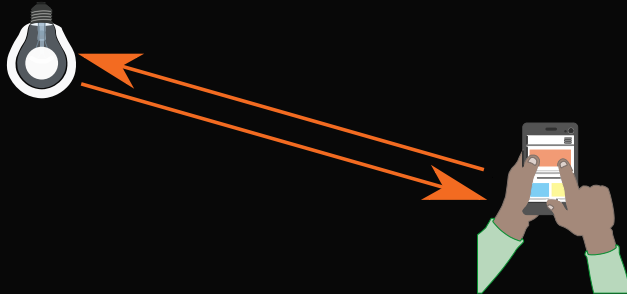
50,000,000,000



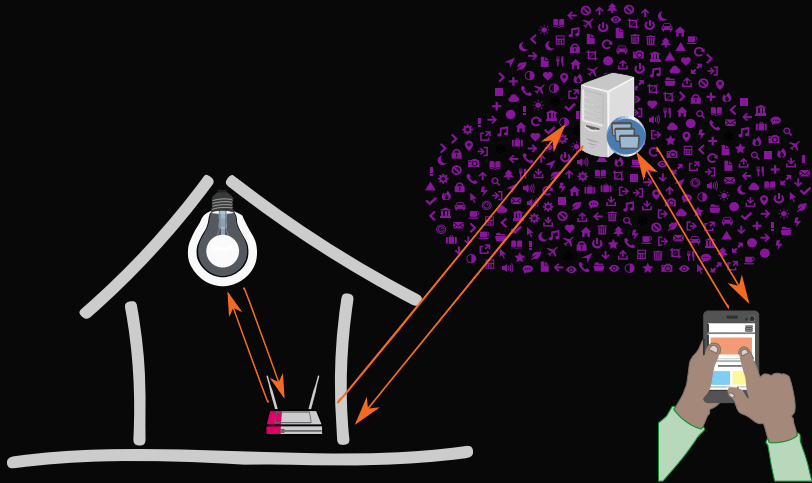
BY 2020, THE NUMBER OF **INTERNET-CONNECTED THINGS**
WILL REACH OR EXCEED **50 BILLION**

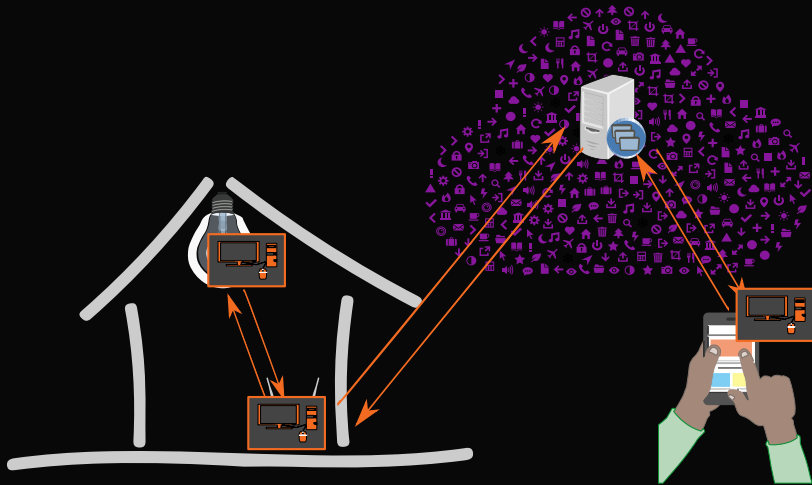
<http://www.comsoc.org/blog/infographic-internet-things-iot>











WEB REPORT US & WORLD

How an army of vulnerable gadgets took down the web today

Malware known as Mirai is taking down the web today
by Nick Statt | @nickstatt | Oct 21, 2016

Amazon UK - Amazon status back online following huge cyber attack on top sites

AMAZON has been taken down in MASSIVE cyber attack takes websites including Twitter, Spotify and Reddit offline as hackers launch attack on major web host.

By MICHAEL MOORE

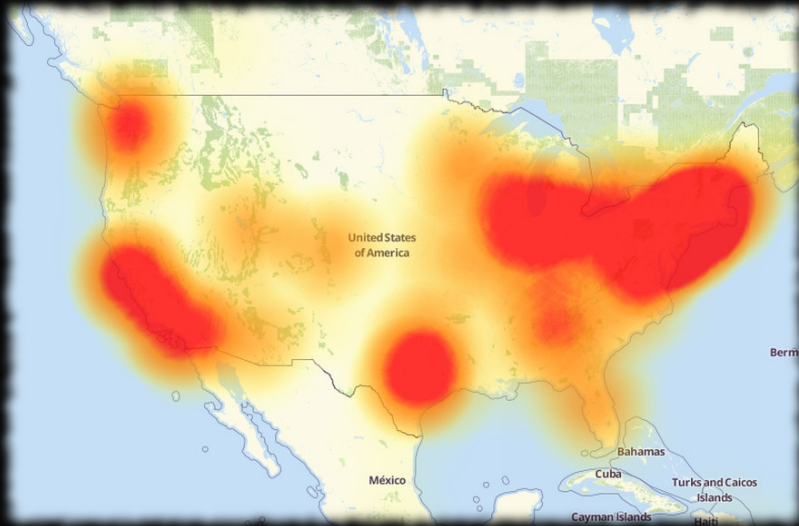
18:18, Fri, Oct 21, 2016 | UPDATED: 18:18, Fri, Oct 21, 2016

Large DDoS attacks cause outages at Twitter, Spotify, and other sites

Posted Oct 21, 2016 by Darrell Etherington

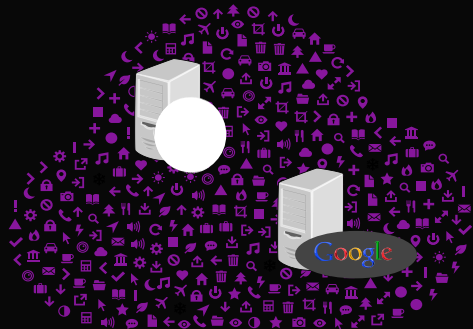
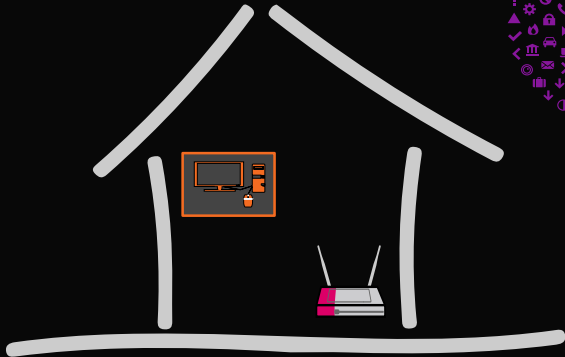
Kate Conger @kateconger

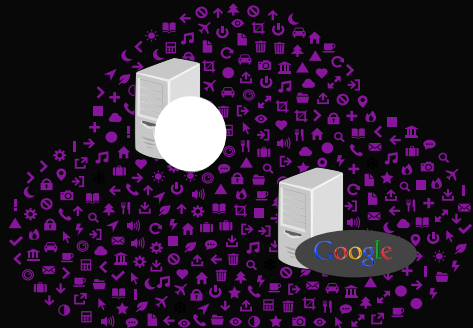
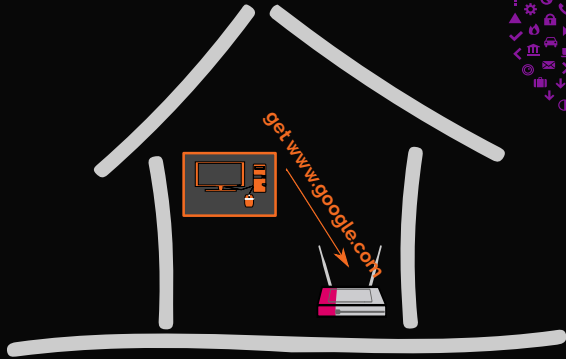
Next Story

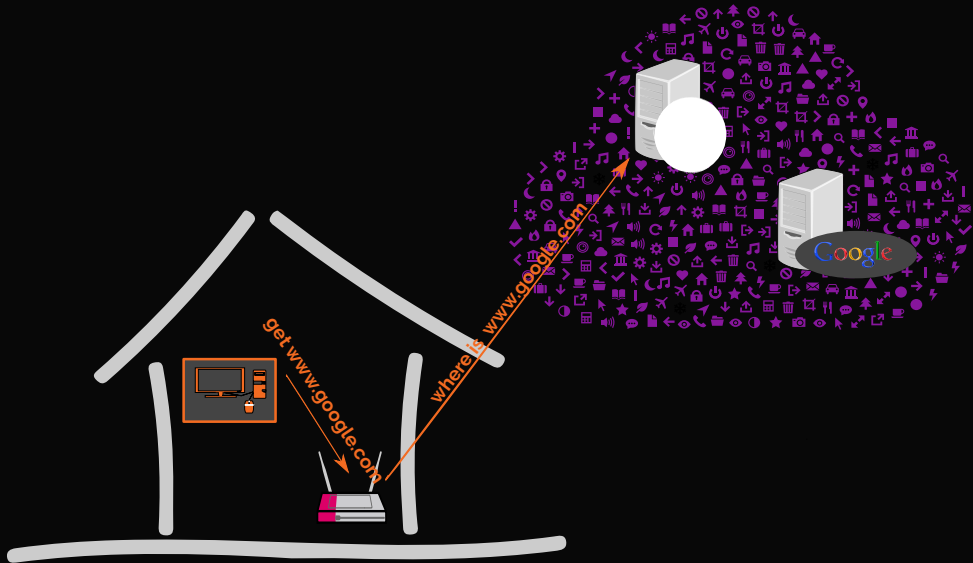


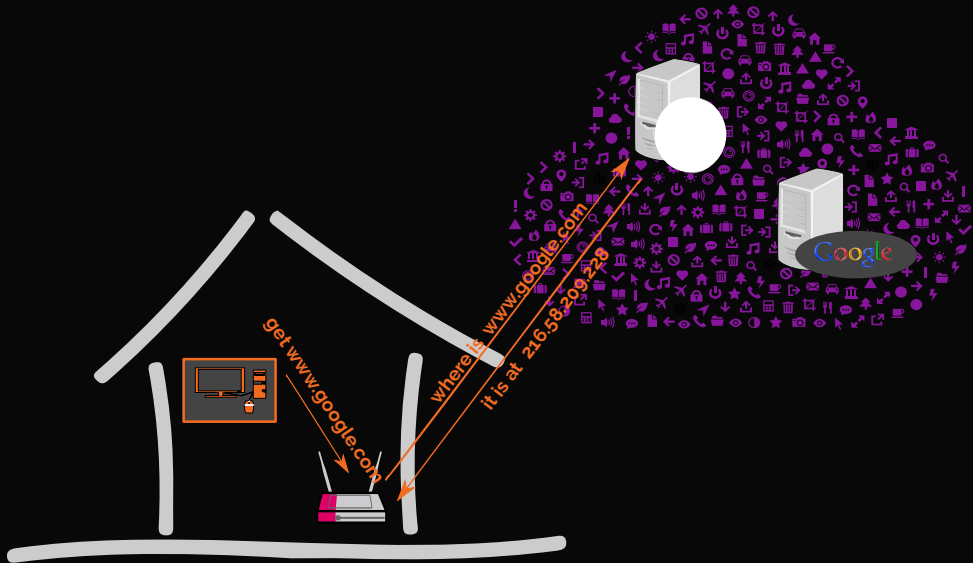
GOV.UK

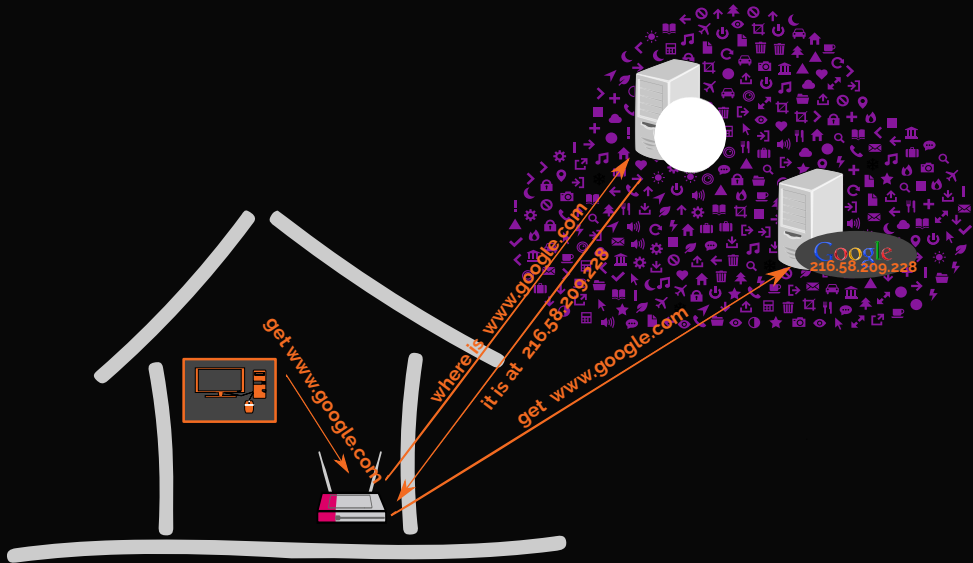


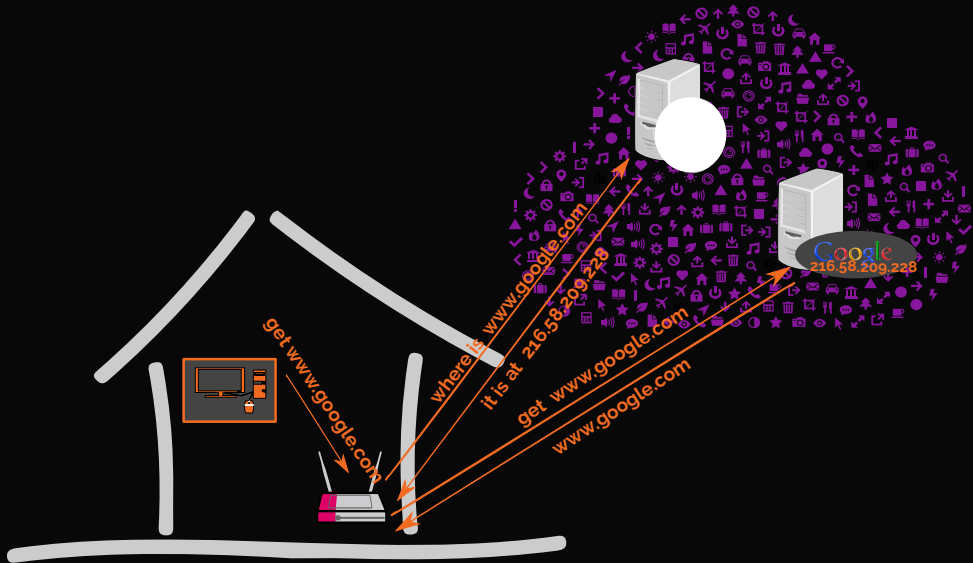












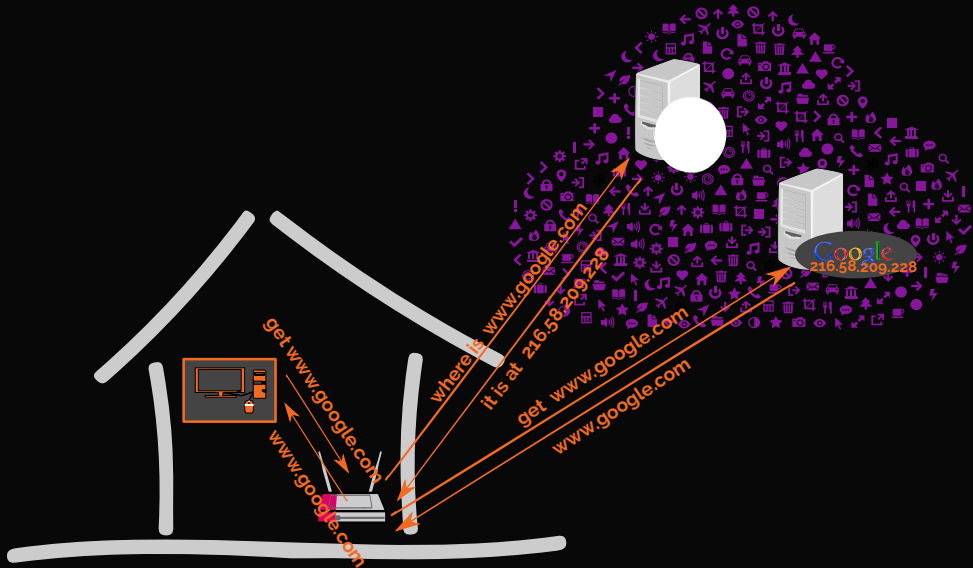


Image 1.2m devices
constantly
queering for
google.com ...

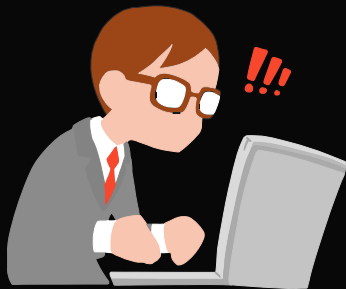


The background image shows a dark, dimly lit room, likely a bedroom. A window is visible on the right side, showing a reflection of the room. A bed with a dark blanket and a pillow is in the foreground. The overall atmosphere is dark and somewhat mysterious, with a warm light source visible near the window.

**Attackers are
exploiting
vulnerabilities
(bugs) to take control
over YOUR devices**

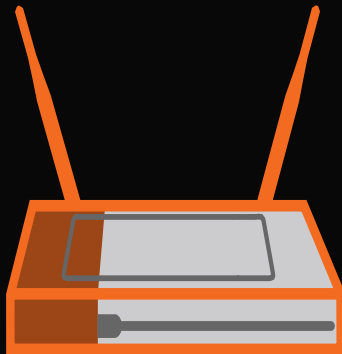
When was the last time you updated your

➤ computer



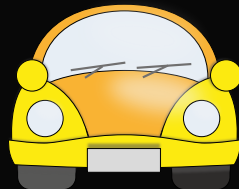
When was the last time you updated your

- computer
- wifi router



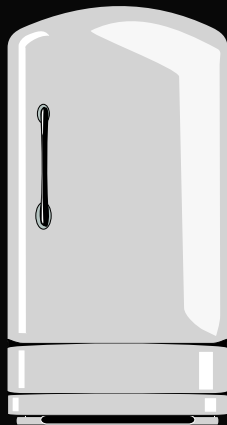
When was the last time you updated your

- computer
- wifi router
- car



When was the last time you updated your

- ❖ computer
- ❖ wifi router
- ❖ car
- ❖ fridge



When was the last time you updated your

- ❖ computer
- ❖ wifi router
- ❖ car
- ❖ fridge
- ❖ light bulb



Average life span

» computers



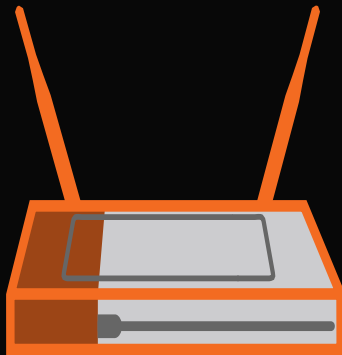
Average life span

- computers: 5 years



Average life span

- ❖ computers: 5 years
- ❖ wifi routers



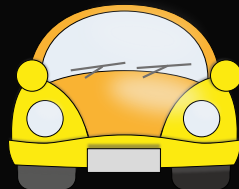
Average life span

- ❖ computers: 5 years
- ❖ wifi routers: 7 years



Average life span

- ❏ computers: 5 years
- ❏ wifi routers: 7 years
- ❏ cars



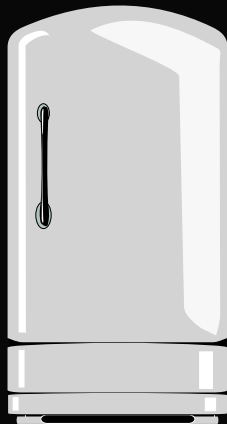
Average life span

- ❖ computers: 5 years
- ❖ wifi routers: 7 years
- ❖ cars: 14 years



Average life span

- ❖ computers: 5 years
- ❖ wifi routers: 7 years
- ❖ cars: 14 years
- ❖ fridges



Average life span

- ❖ computers: 5 years
- ❖ wifi routers: 7 years
- ❖ cars: 14 years
- ❖ fridges: 17 years



Average life span

- ❖ computers: 5 years
- ❖ wifi routers: 7 years
- ❖ cars: 14 years
- ❖ fridges: 17 years
- ❖ LED



Average life span

- ❖ computers: 5 years
- ❖ wifi routers: 7 years
- ❖ cars: 14 years
- ❖ fridges: 17 years
- ❖ LED: 20 years



and now to something
completely
different




and now to something
slightly
different



Abfahrt **Linie** **Ziel** **Gleis**

Zeit	Über	Nach	Gleis
22:10 RB81	Flöha - Pockau-Lengefeld	Obernhau	8
22:30 RB30	Flöha - Freiberg - Fahrt heute	Hbf	11
22:31 RB30	Hohenstein	(S) Hbf	10
22:36 RB80	Flöha - Zsch...	g-B. Süd	8
22:36 RB45	irt heute von		9
22:44 RE6	Geithain - B...	lbh	5
22:45 RB89	Einsiedel - Thalheim (Erzgeb)	Aue (Sachs)	14
23:30 RB30	Flöha - Freiberg (Sachs) - Tharandt Fahrt heute von Gleis 11 -	Dresden Hbf	11

Oops, your files have been encrypted!



Was geschah mit meinem Computer?

Alle wichtigen Dateien sind verschlüsselt. Ihre wichtigen Dateien, Fotos, Videos, Datenbanken und andere Dateien sind nicht mehr zugänglich, weil sie verschlüsselt wurden. Vielleicht sind Sie damit beschäftigt, einen Weg zu finden, um Ihre Dateien wiederherzustellen, aber verschwenden Sie nicht Ihre Zeit. Niemand kann Ihre Dateien ohne unseren Entschlüsselungsdienst wiederherstellen.

Kann ich meine Dateien wiederherstellen?

Sicher. Wir garantieren, dass Sie alle Ihre Dateien sicher und einfach wiederherstellen können. Aber du hast nicht genug Zeit. Sie können einige Ihrer Dateien kostenlos entschlüsseln. Versuchen Sie jetzt, indem Sie auf <Überprüfen> klicken. Aber wenn du alle deine Dateien entschlüsseln willst, musst du bezahlen. Sie haben nur 3 Tage, um die Zahlung einzurichten. Danach wird der Preis verdoppelt. Such wenn du nicht in 7 Tagen bezahlen hast, kommt du deine Dateien nicht für immer wiederherstellen. Wir haben freie Vorkonstellungen für Benutzer, die so arm sind, dass sie nicht in 6 Monaten bezahlen können.

Wie bezahle ich?

Die Zahlung wird nur in Bitcoin akzeptiert. Für weitere Informationen klicken Sie auf <Kontakt>.

Send \$300 worth of bitcoin to this address:

Kontakt Bitcoin

120YDPgwueZ8Hylfgw61p7AA8lej6SMw

BMG | MIS

Ooops, your files have been encrypted!

English

**What Happened to My Computer?**

Your important files are encrypted.

Many of your documents, photos, videos, databases and other files are no longer accessible because they have been encrypted. Maybe you are busy looking for a way to recover your files, but do not waste your time. Nobody can recover your files without our decryption service.

Can I Recover My Files?

Sure. We guarantee that you can recover all your files safely and easily. But you have not so enough time.

You can decrypt some of your files for free. Try now by clicking <Decrypt>.

But if you want to decrypt all your files, you need to pay.

You only have 3 days to submit the payment. After that the price will be doubled.

Also, if you don't pay in 7 days, you won't be able to recover your files forever.

We will have free events for users who are so poor that they couldn't pay in 6 months.

How Do I Pay?

Payment is accepted in Bitcoin only. For more information, click <About bitcoin>.

Please check the current price of Bitcoin and buy some bitcoins. For more information, click <How to buy bitcoins>.

And send the correct amount to the address specified in this window.

After your payment, click <Check Payment>. Best time to check: 9:00am - 11:00am

CMT from Monday to Friday

Payment will be raised on

5/16/2017 00:47:55

Time Left

02:23:57:37

Your files will be lost on

5/20/2017 00:47:55

Time Left

06:23:57:37

[About bitcoin](#)[How to buy bitcoins?](#)[Contact Us](#)**Send \$300 worth of bitcoin to this address:**

12t9YDPgwueZ9NyMgw519p7AA8isjr6SMw

Copy

Check Payment

Decrypt

Ooops, your files have been encrypted!



What Happened to My Computer?

Your important files are encrypted. Many of your documents, photos, videos, databases are not accessible because they have been encrypted. We can help you recover your files, but do not waste your money on other decryption services.

Payment will be raised on

5/16/2017 00:47:55

Time Left

02:23:57:37

Your files will be

5/20/2017

News

Internet News

What is WannaCry? Our guide to the NHS ransomware fiasco

What is WannaCry? Our guide to the NHS ransomware fiasco

Send \$300 worth of bitcoin to this address:

12t9YDPgwueZ9NyMgw519p7AA8isjr6SMw

Copy

Check Payment

Decrypt

Dec 11, 1989: 20'000 envelopes containing a 5.25" floppy disk loaded with the first known ransomware ('AIDS') where mailed.



Dear Customer:

It is time to pay for your software lease from PC Cyborg Corporation. Complete the INVOICE and attach payment for the lease option of your choice. If you don't use the printed INVOICE, then be sure to refer to the important reference numbers below in all correspondence. In return you will receive:

- a renewal software package with easy-to-follow, complete instructions;
- an automatic, self-installing diskette that anyone can apply in minutes.

Important reference numbers: A5599796-2695577-

The price of 365 user applications is US\$189. The price of a lease for the lifetime of your hard disk is US\$378. You must enclose a bankers draft, cashier's check or international money order payable to PC CYBORG CORPORATION for the full amount of \$189 or \$378 with your order. Include your name, company, address, city, state, country, zip or postal code. Mail your order to PC Cyborg Corporation, P.O. Box 87-17-44, Panama 7, Panama.

Press ENTER to continue

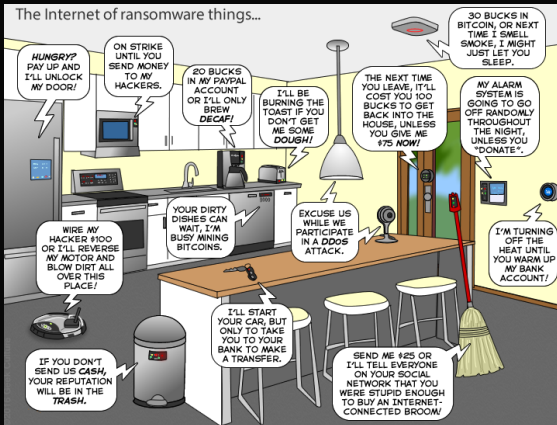


Blaming the victim
does not work!



Recommendations

- ❖ For users:
 - ❖ update your devices regularly
(for your personal devices: use automated updates, if available)
 - ❖ back-up your data frequently
 - ❖ choose vendors that provide security fixes for their products during the expected life-time
- ❖ For researchers and vendors:
 - ❖ make it easier to write high quality software
 - ❖ make it easier to upgrade systems



<http://www.geekculture.com/joyoftech/joyarchives/2340.html>

Thank You!

Contact:

Dr. Achim D. Brucker
Department of Computer Science
University of Sheffield
Regent Court
211 Portobello St.
Sheffield S1 4DP, UK

✉ a.brucker@sheffield.ac.uk
🐦 [@adbrucker](https://twitter.com/adbrucker)
🌐 <https://de.linkedin.com/in/adbrucker/>
🔗 <https://www.brucker.ch/>
📖 <https://logicalhacking.com/blog/>



Document Classification and License Information

© 2017 LogicalHacking.com, A.D. Brucker.

- ❑ This presentation is classified as *Public (CC BY-ND 4.0)*:
Except where otherwise noted, this presentation is licensed under a Creative Commons Attribution-NoDerivatives 4.0 International Public License (CC BY-ND 4.0).