"I Honorably Assure You: It is Secure" Hacking in the Far East

Paul S. Ziegler / HITB2012KL



Introduction

In 60 seconds or less

Paul Sebastian Ziegler



Cross-Site Scripting

Paul Sebastian Ziegler

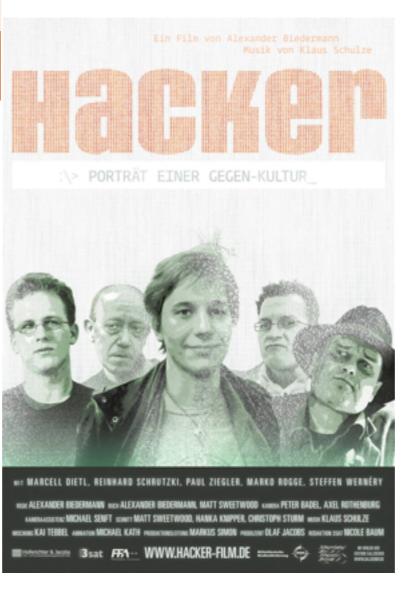
Cross-Site Scripting (XSS) ist die Schwachstelle in Webanwendungen schlechthin. Wie kaum eine andere Technik kombiniert diese Technik einfache Methoden und Ansätze zu letztendlich verheerenden Angriffen. Jedoch ist das Wissen um diese Schwachstelle und die damit verbundenen Angriffe derzeitig lediglich Sicherheitsexperten vorbehalten. Es existieren zwar umfangreiche Berichte und Dokumentationen, aber diese können zumeist nur von Insidern verstanden werden. Der normale Programmierer oder Nutzer, der sich mit Cross-Site Scripting auseinandersetzen muss, bleibt in der Regel außen vor. Dieses TecFeed ist bemüht, das zu ändern. In einfachen Schritten führt Sie der Autor in das komplexe Thema ein. Sie werden lernen, was Cross-Site Scripting ist und wie man mit seiner Hilfe Webanwendungen angreifen kann. Nach der Lektüre dieses TecFeeds werden Sie in der Lage sein, Schwachstellen zu erkennen und zu beheben.

O'REILLY®

Danksagung | 72

TecFeeds







O'REILLY"

Paul Sebastian Ziegler









Wednesday, October 10, 12



Wednesday, October 10, 12

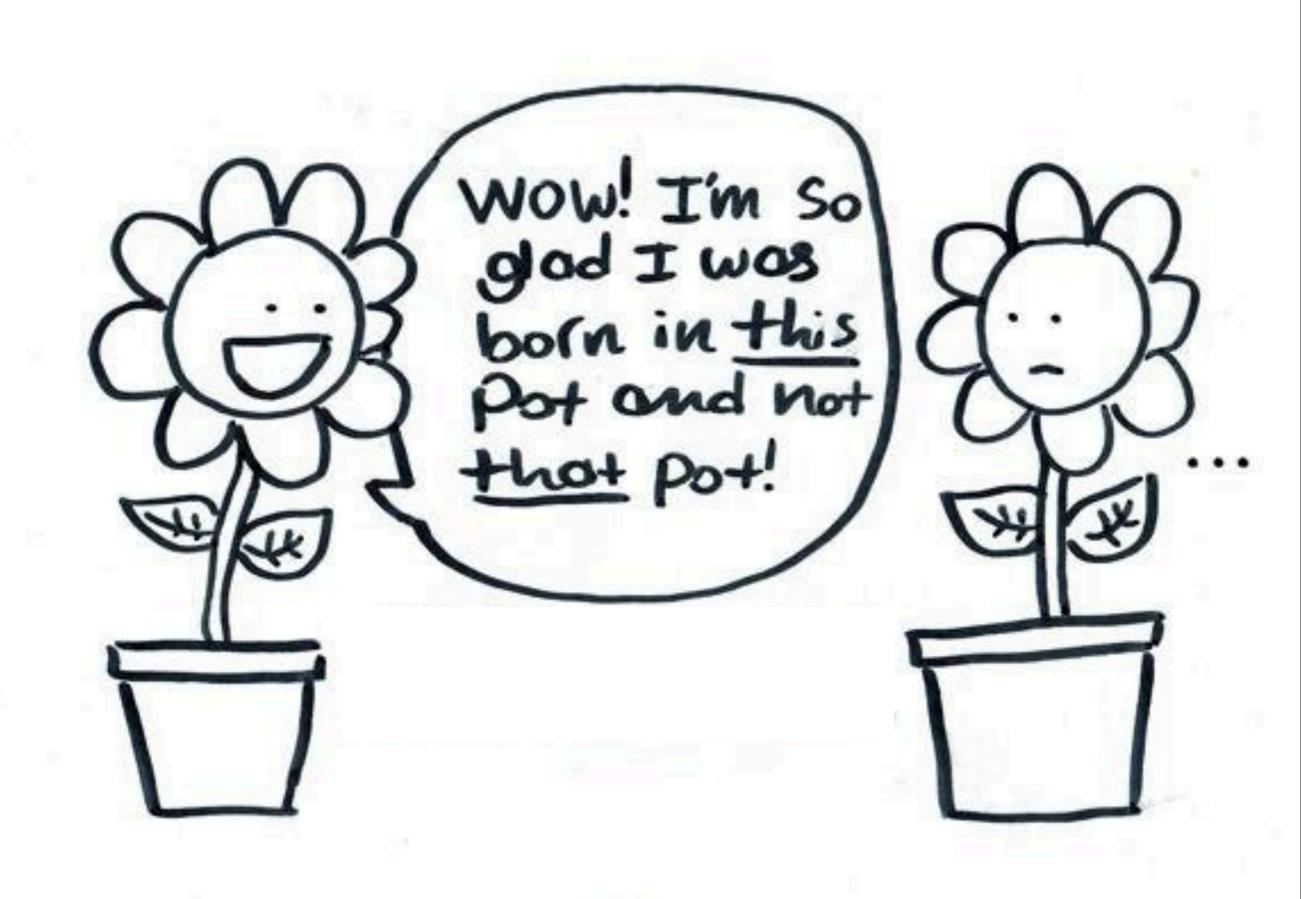
Anything else?

Ask

Feeling stalkerish?

http://observed.de





Less of this

Well then...

Three Wise Monkeys



See No Evil

See No Evil Hear No Evil

See No Evil
Hear No Evil
Speak No Evil



Wednesday, October 10, 12



Wednesday, October 10, 12



Wednesday, October 10, 12



Wednesday, October 10, 12



Wednesday, October 10, 12



Wednesday, October 10, 12



Wednesday, October 10, 12



Wednesday, October 10, 12



Wednesday, October 10, 12



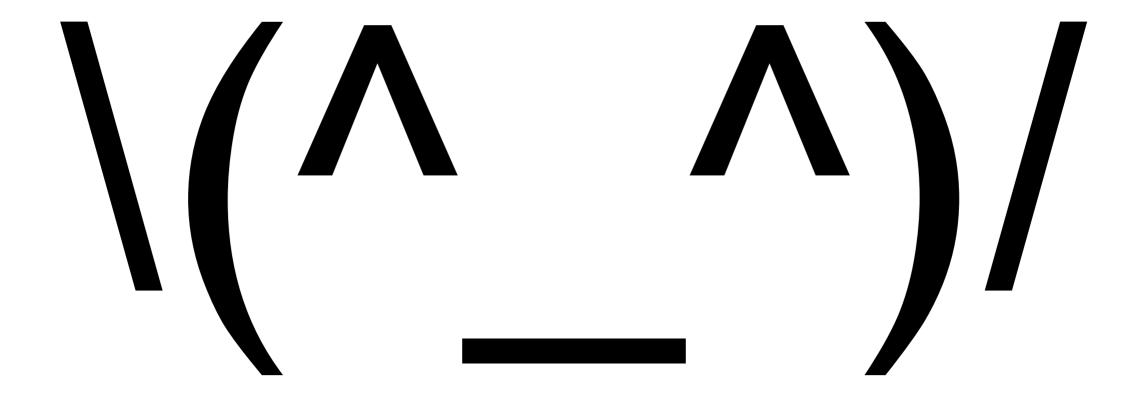
Wednesday, October 10, 12



Wednesday, October 10, 12



"I humbly apologize, but I must ask you to kindly leave this establishment."





Exploitation Vector:

Invest your time into intelligence gathering or exploitation - not covert operation.

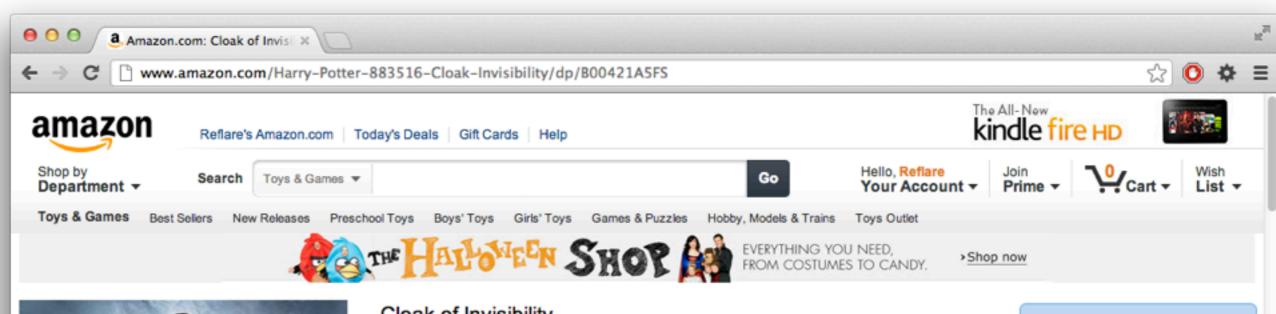
The Invisibility Cloak





NINJAS

There are four in this picture.





Click for larger image and other views



Share your own related images

Cloak of Invisibility

by Harry Potter

★★☆☆ ♥ (6 customer reviews) | Like (18)

List Price: \$395.00

Price: \$389.00 & this item ships for FREE with Super Saver Shipping. Details

You Save: \$6.00 (2%)

Only 2 left in stock (more on the way).

Ships from and sold by Amazon.com. Gift-wrap available.

Want it delivered Tuesday, October 9? Order it in the next 11 hours and 6 minutes, and choose One-Day Shipping at checkout. Details

3 new from \$389.00

Hot New Toys for Fall



Shop a wide selection of all-new toys from top brands for kids of all ages. Learn more

Quantity: 1 + Yes, I want FREE Two-Day Shipping with Amazon Prime Add to Cart or Sign in to turn on 1-Click ordering. Add to Wish List More Buying Choices SwordsandSw... \$389.00 + \$11.00 shipping

Comic Book Culture Add to Cart

Have one to sell? Sell on Amazon

Share M F 9

\$416.95 + Free Shipping

3 new from \$389.00

- · Officially licensed
- . Made from authentic materials true to the movie
- Screen accurate
- · Hand finished silk screened design, no two are alike
- Heavy velvet cloak with silk lining



25 of 47 people found the following review helpful

A Bit Disappointed., March 4, 2011

By Austin Jennings - See all my reviews

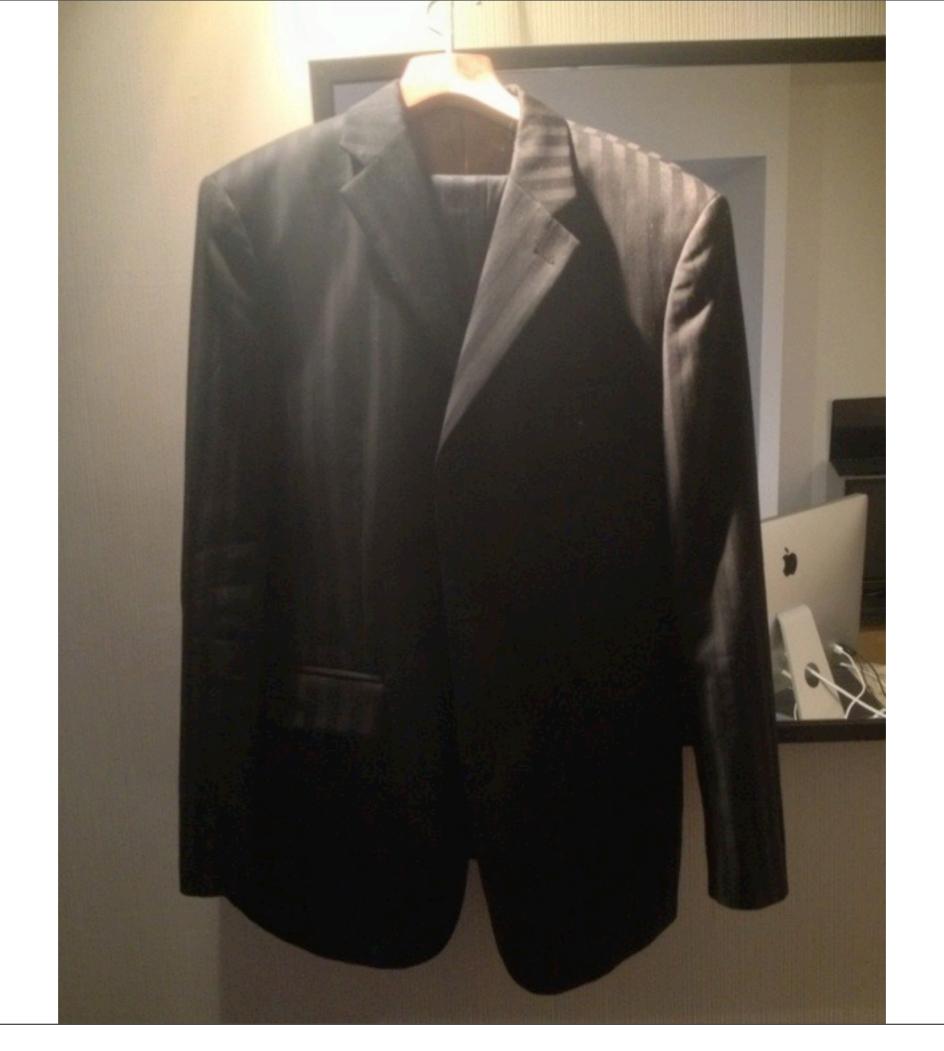
= Durability: **** = Fun: **** = Educational: ***

This review is from: Cloak of Invisibility (Toy)

Well, it didn't work. Otherwise nice looking, but... well, I'd prefer no one be able to see it at all.

Help other customers find the most helpful reviews

Was this review helpful to you? Yes No Comment



Invisible Cloak You Say?

- Obliterates badge requirements (even better when talking on a cellphone in English)
- Reduces random police ID checks from once a month to never
- Lets you get away with virtually any social violation

Works differently in South Korea

Honor Cloak

- Gets you service in restaurants as a foreigner
- Triples native's willingness to communicate in English / Japanese / Signs
- Strangers will walk you to the location you search for and randomly carry your stuff instead of running away or screaming
- Taxi acquisition time reduced to less than 60 seconds

Honor Cloak

- Taxi drivers actually drop you off at your door instead of kicking you out at the nearest intersection
- In short: If you're a foreign male, putting on a suit in Korea teleports you into a different country







Wednesday, October 10, 12



Military

Military

English Teachers

Military

English Teachers

Business

Military

English Teachers

Business

Also Works in Hong Kong

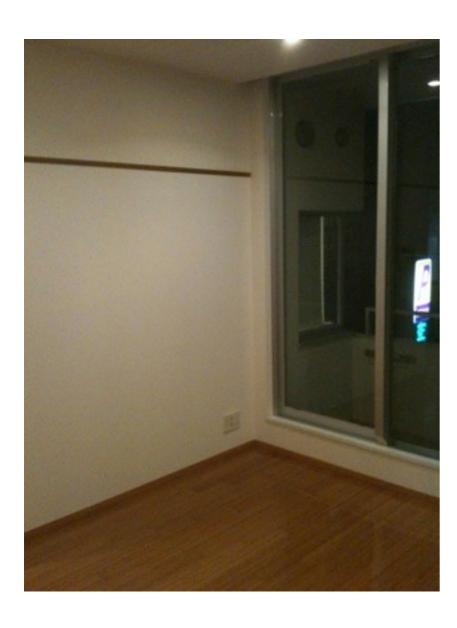
"Hey, look - it's another banker!"

Exploitation Vector



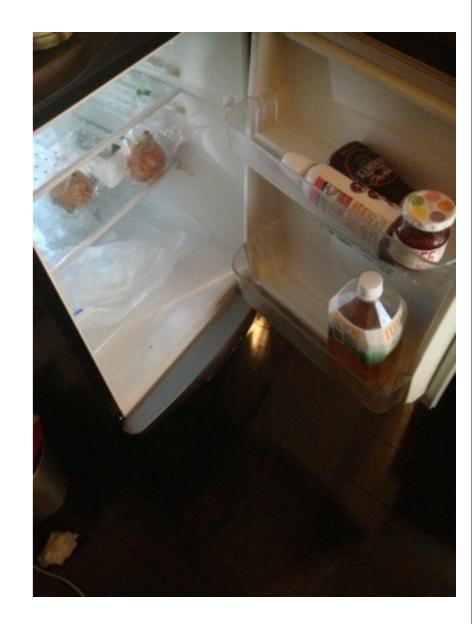
If all else fails, use the "dumb foreigner" card.

Home Insecurity





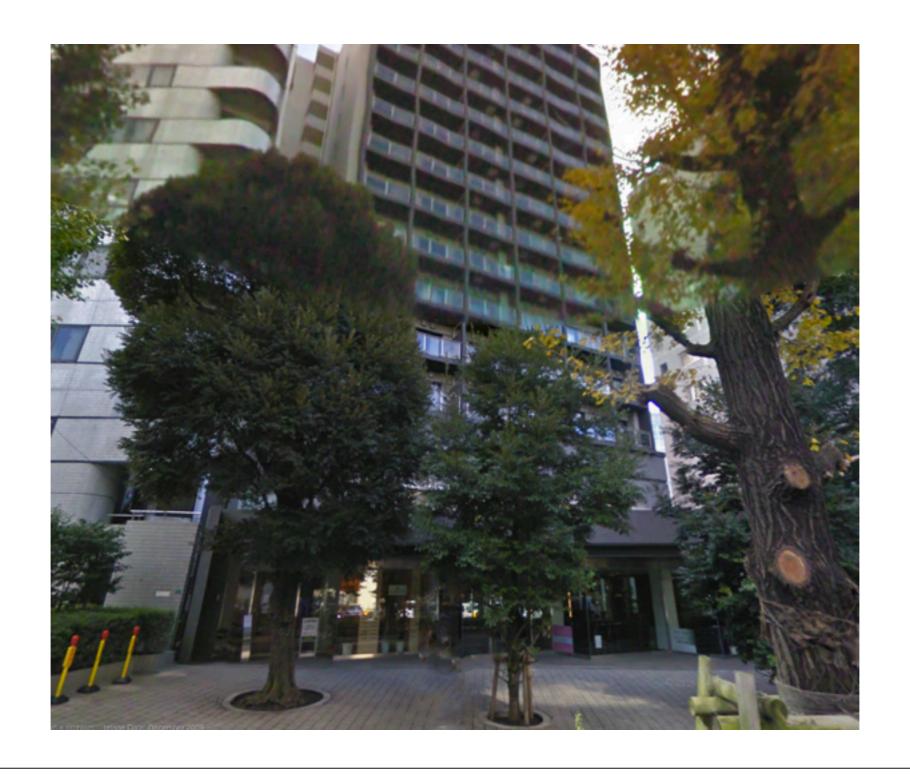




"Apartment"



"Mansion"



"Apartment"

- Cheap (rent & construction)
- Wood and Paper
- Not guaranteed to withstand a strong earthquake
- The concept of security just doesn't apply



Wednesday, October 10, 12



Wednesday, October 10, 12



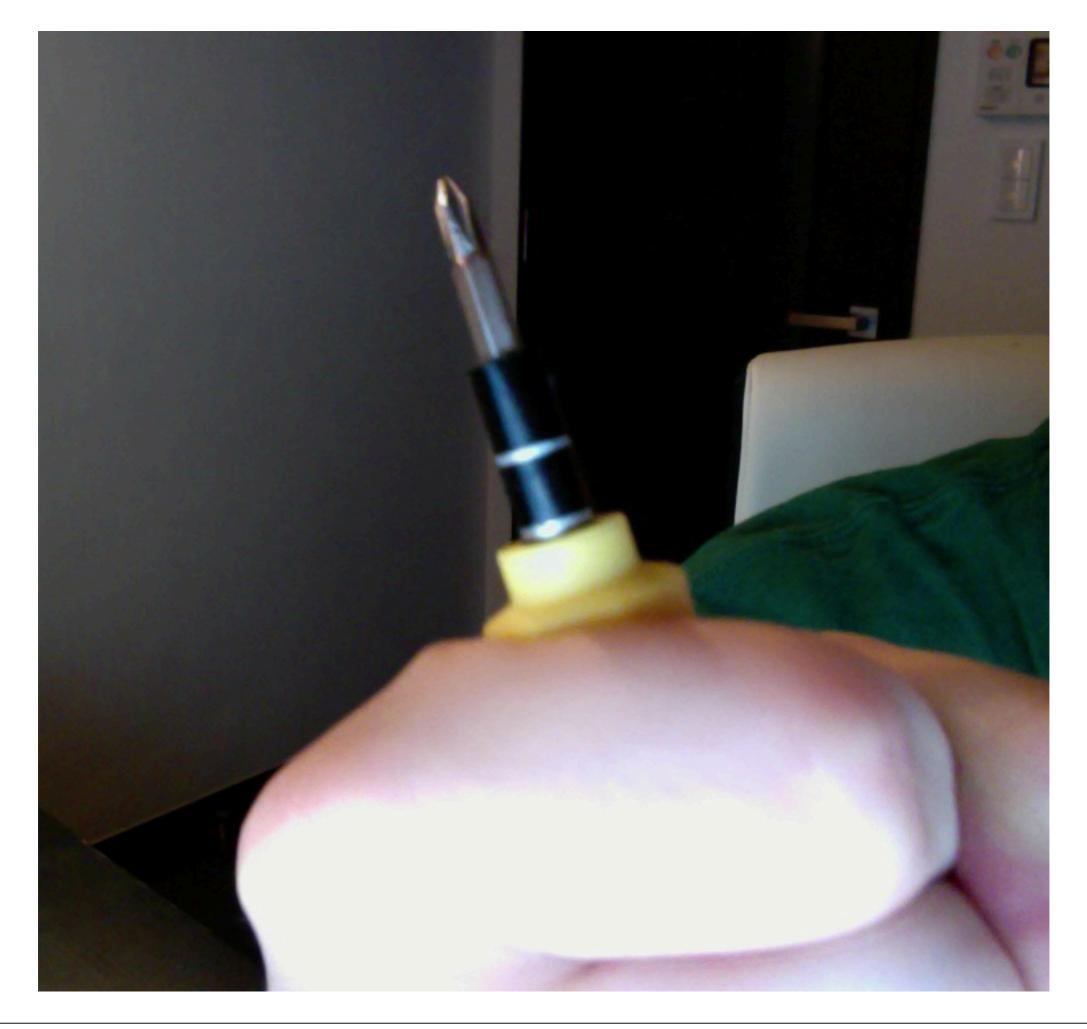
Wednesday, October 10, 12



Wednesday, October 10, 12



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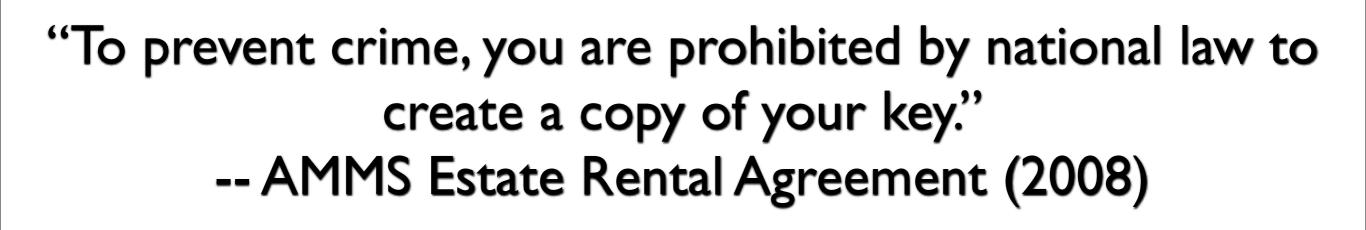




Wednesday, October 10, 12



Wednesday, October 10, 12









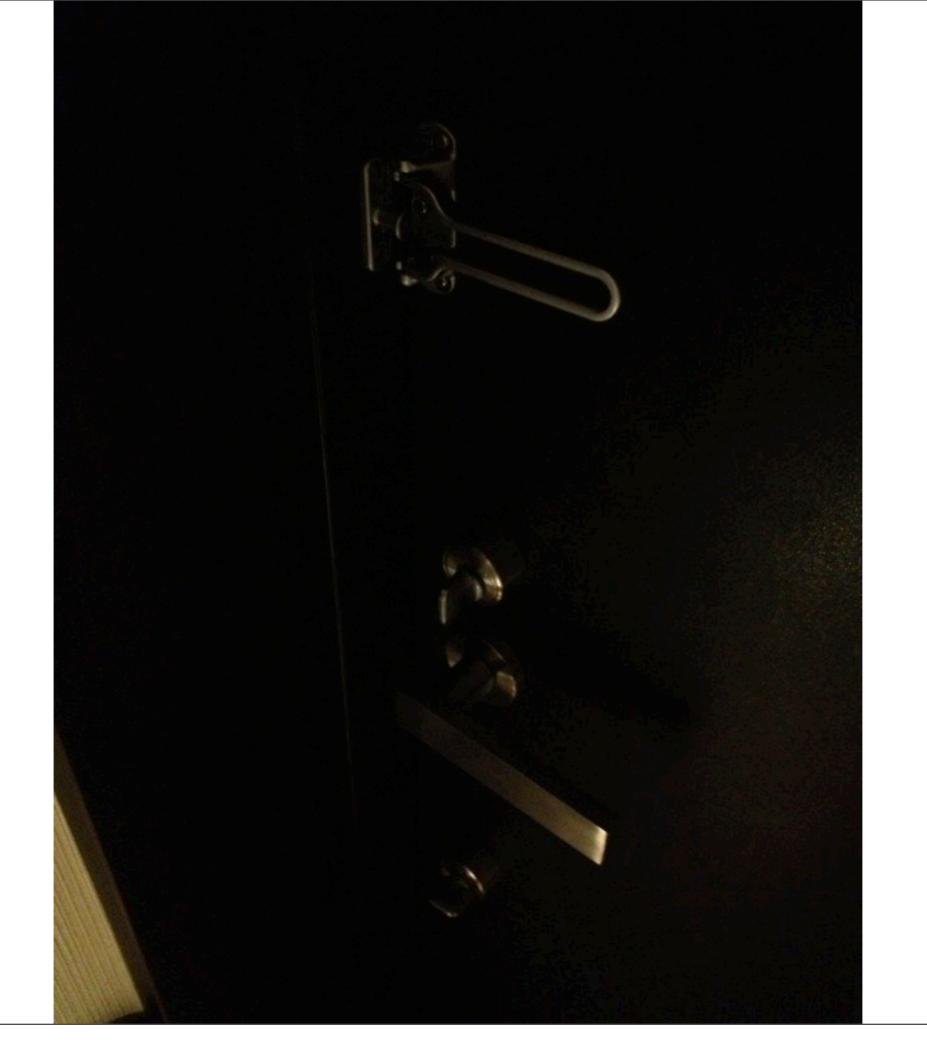


Wednesday, October 10, 12

"Mansion"

- You'll need to sell a kidney to afford one
- Sturdy construction
- Earthquake resistant
- Central lock
- (Often) Including security services



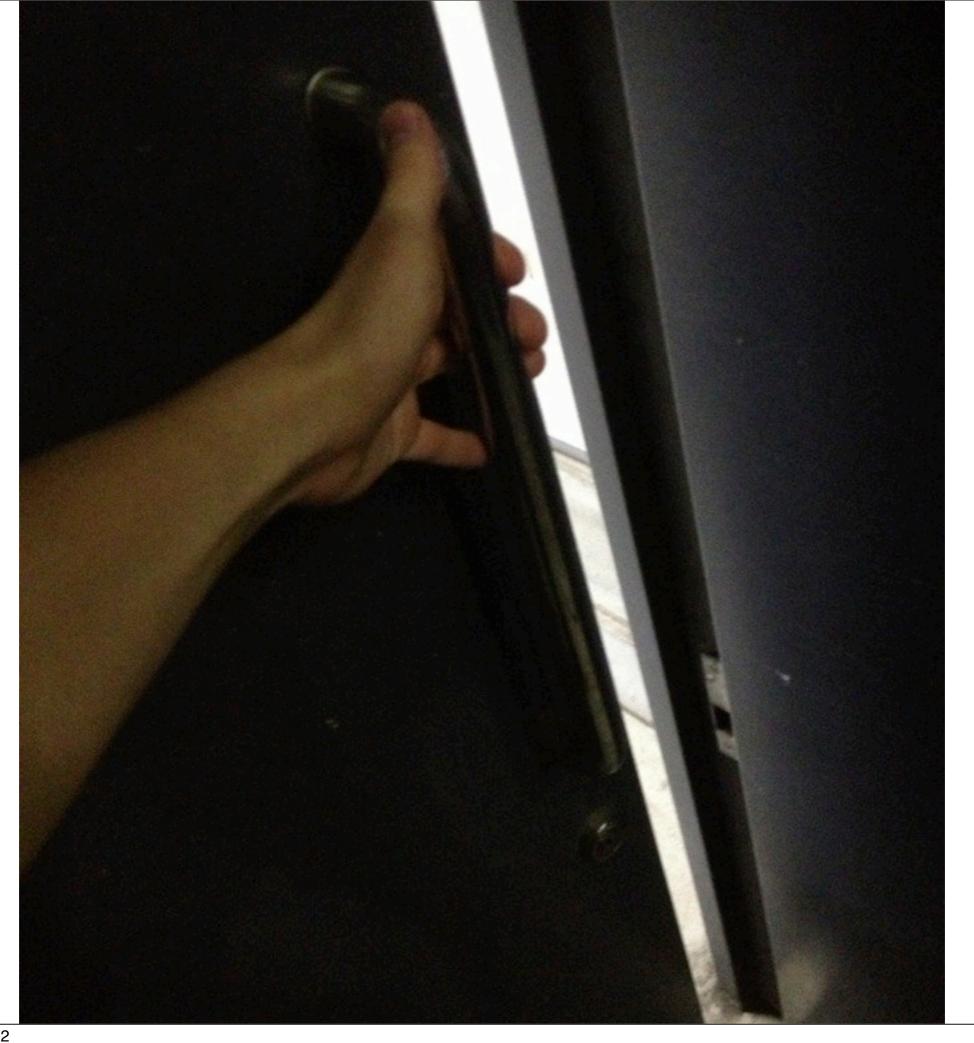








Wednesday, October 10, 12









Reducing Lock Efficiency to basically zero

In 4 easy steps

I. Legally prohibit mail locks with more than 3 digit combinations

2. Legally force all locks to open in a clockwiseclockwisecounterclockwise pattern

3. Legally force the first two digits of the combination to be the same

4. Don't integrate a separate opening crank, but simply open once the correct combination is entered

Time per attempt: 1.5 seconds

50% unlock chance 75 Seconds

100% unlock chance

150 Seconds

Jumping to Korea...



Well, albeit not a law, most locks only take up to 4 digits...

And the majority of them are not wired to any monitoring...

Or block you out after numerous attempts...

Time per attempt: 0.85 seconds

50% unlock chance 66 Minutes 38 Seconds

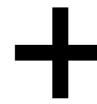
100% unlock chance

133 Minutes

16 Seconds













Counter Exploitation:

Work from the assumption that if someone wants to get into your place - they

Corporate Insecurity

"Lifetime Employment"

- Get a mediocre wage
- Guaranteed mediocre raises
- You can not be fired or laid off
- If you survive to retirement, the company pays you around 75% of your last wage until you die
- If you die, it pays your spouse until their death

"Bonus"

- Officially rewards good work
- Unofficially often dependent on overtime
- Can contribute up to 50% to annual wage
- Easy tool to keep employees in line

Don't fuck up



Requires Action

Make a judgement call that could potentially save the company a lot and seems very clear. Incur a small loss

Make a judgement call that could potentially save the company a lot and seems very clear. Incur a small loss

You fucked up.

Pedantically stick to protocol even though it is wrong for the current case and cost the company millions.

Pedantically stick to protocol even though it is wrong for the current case and cost the company millions.

Promotion secured.

Also, don't work too fast and stay until lam to secure that bonus.

Also, don't work too fast and stay until lam to secure that bonus.

(Alternatively become a contractor.)

Example A

1) Run nmap on customer network

- 1) Run nmap on customer network
- 2) Find Windows NT4 box

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- 2) Find Windows NT4 box
- 3) Find IRC server running on NT4 box

- I) Run nmap on customer network
- 2) Find Windows NT4 box
- 3) Find IRC server running on NT4 box
- 4) Find it runs on port 31337

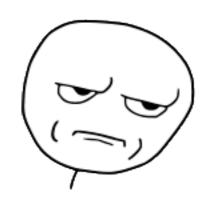
- I) Run nmap on customer network
- 2) Find Windows NT4 box
- 3) Find IRC server running on NT4 box
- 4) Find it runs on port 31337

How do you react?

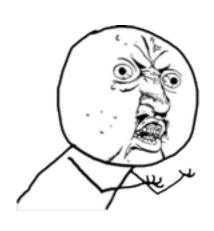
"We'll check into it."

2 Weeks Pass

"We have decided against shutting down or altering the affected machine..."



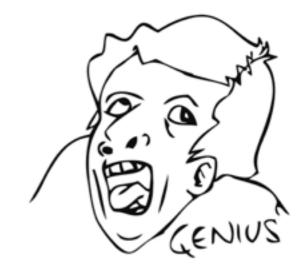
"Because the guy who set it up no longer works here..."



"And we have no idea what it does..."



"But it might be important, so we'll just leave it running."



Checklist

- I didn't touch it
- It is not obviously horribly broken from a middle management PoV
- If we get hacked, someone else "did it"
- I still get my raise and keep my job





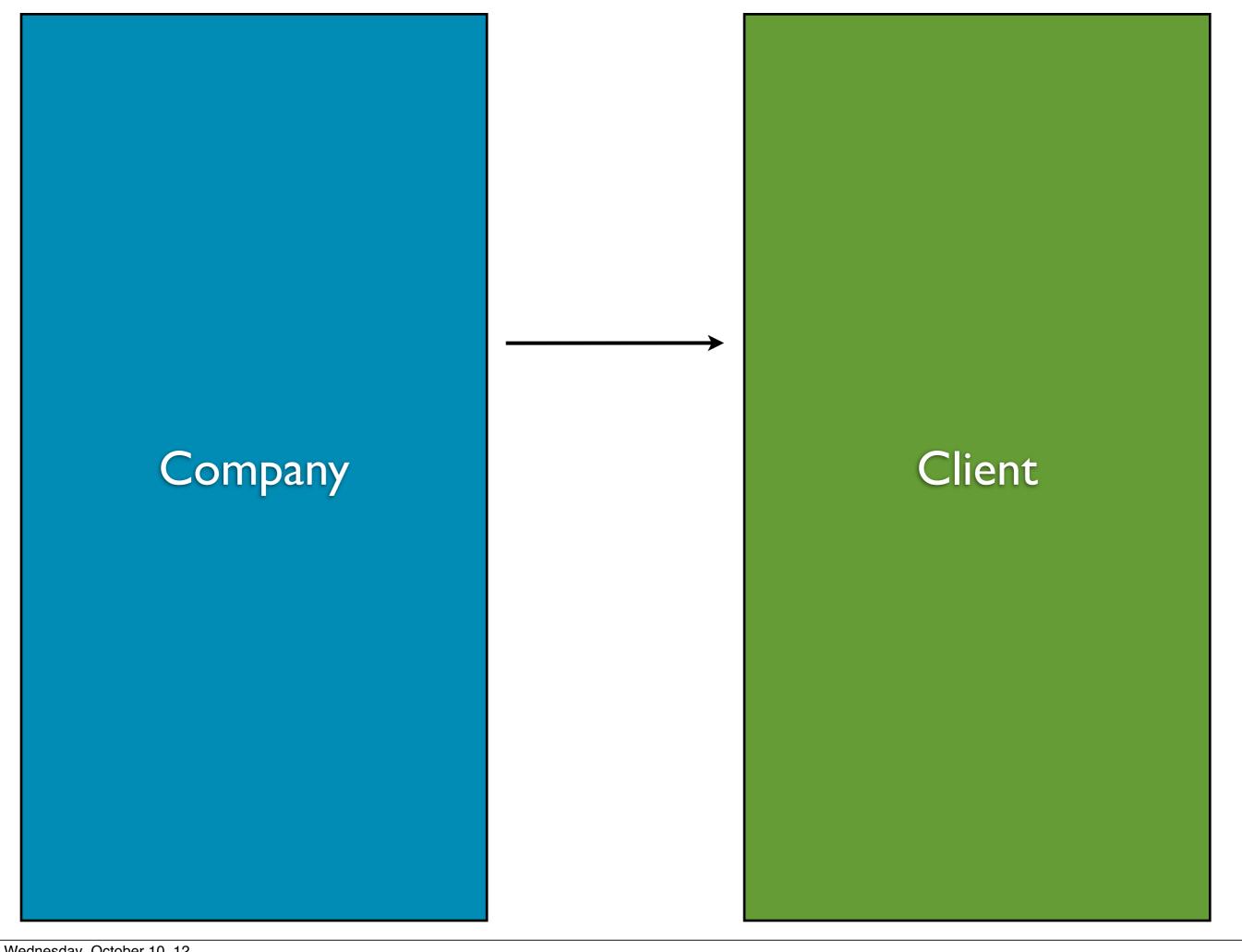
Client operates an SaaS API that integrates into their dashboard.

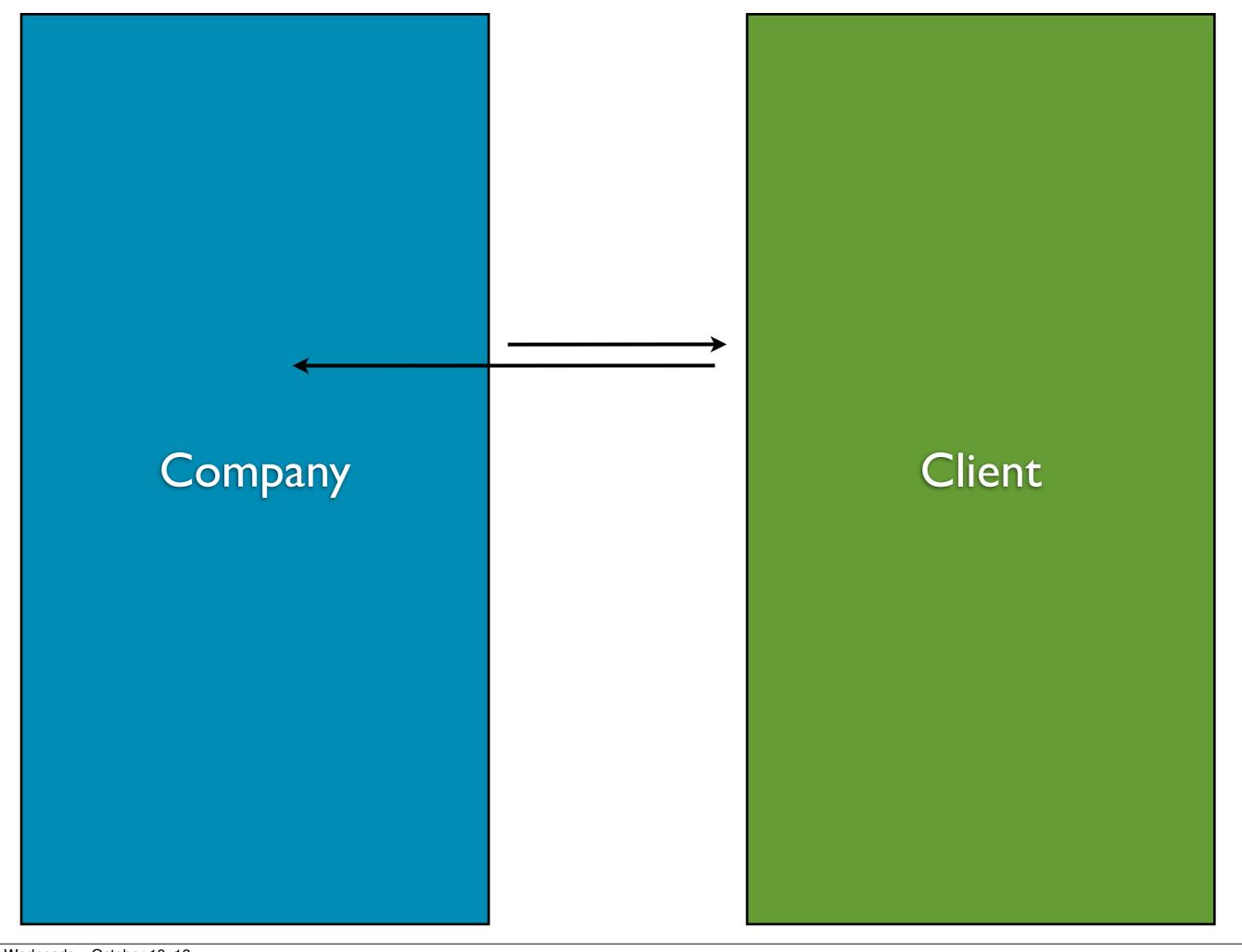
Japanese company integrates their product with it.

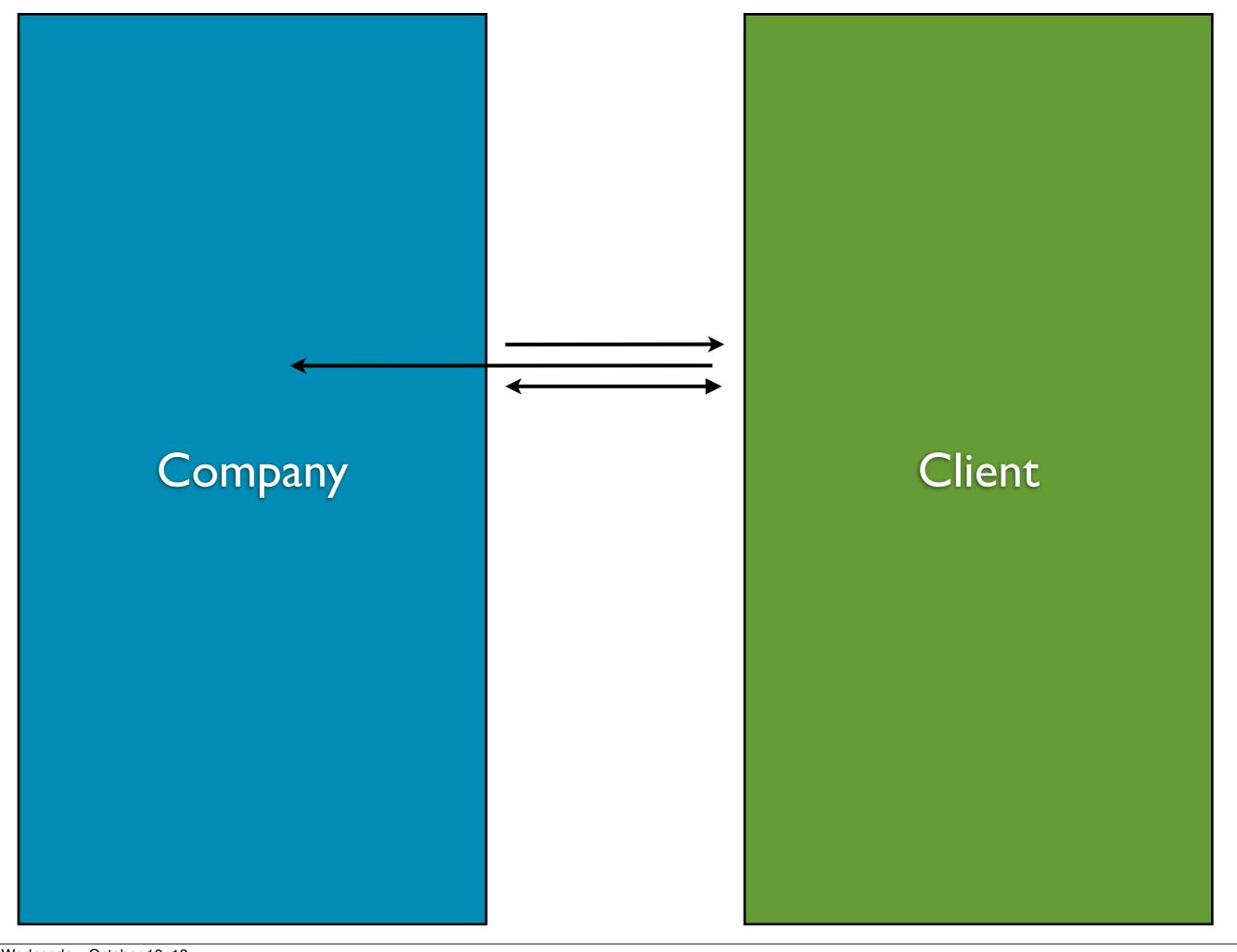
If the API isn't called for 24 hours, an error message is displayed.

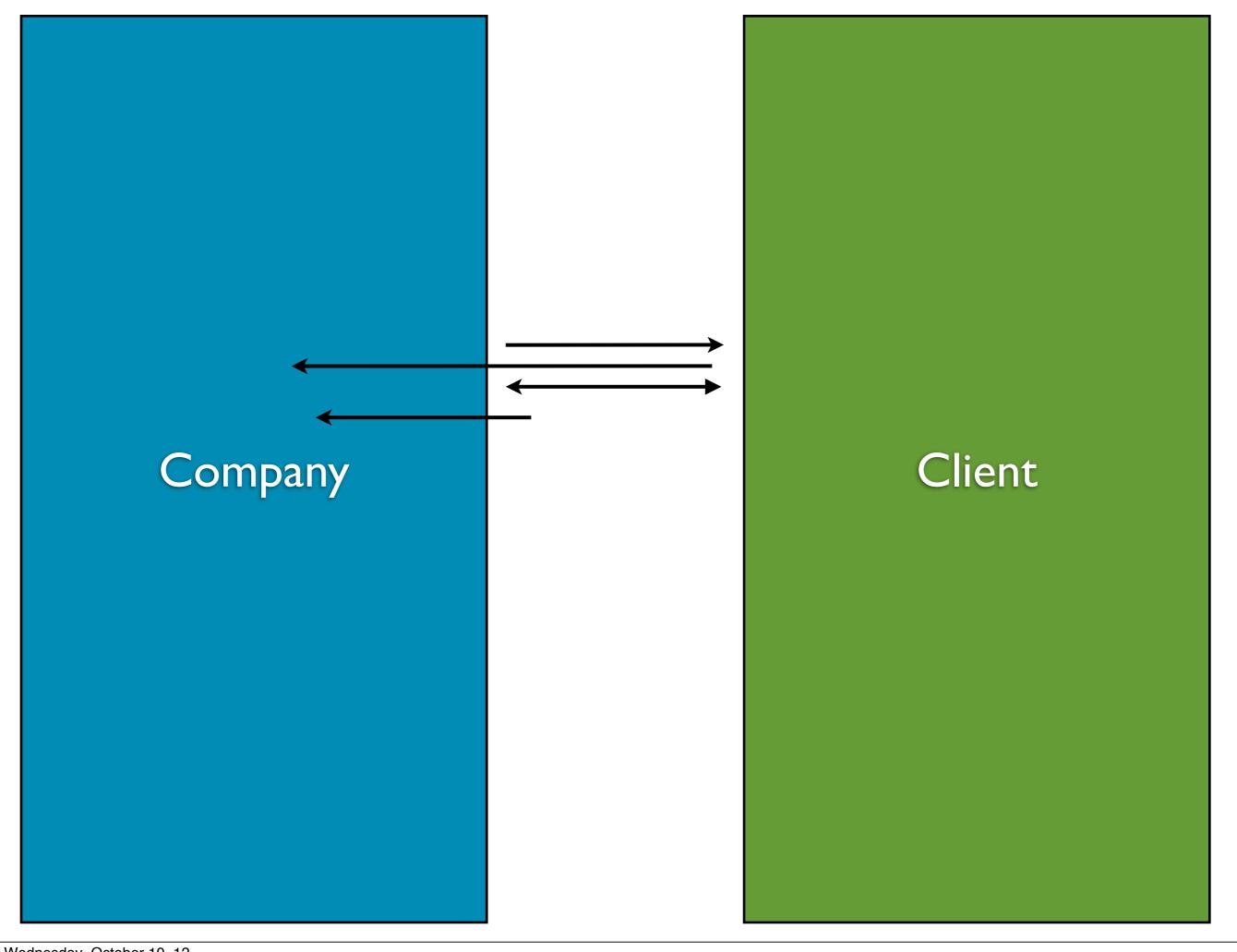
Of 25 possible causes, number 22 names "there may be issues with your encryption certificate".

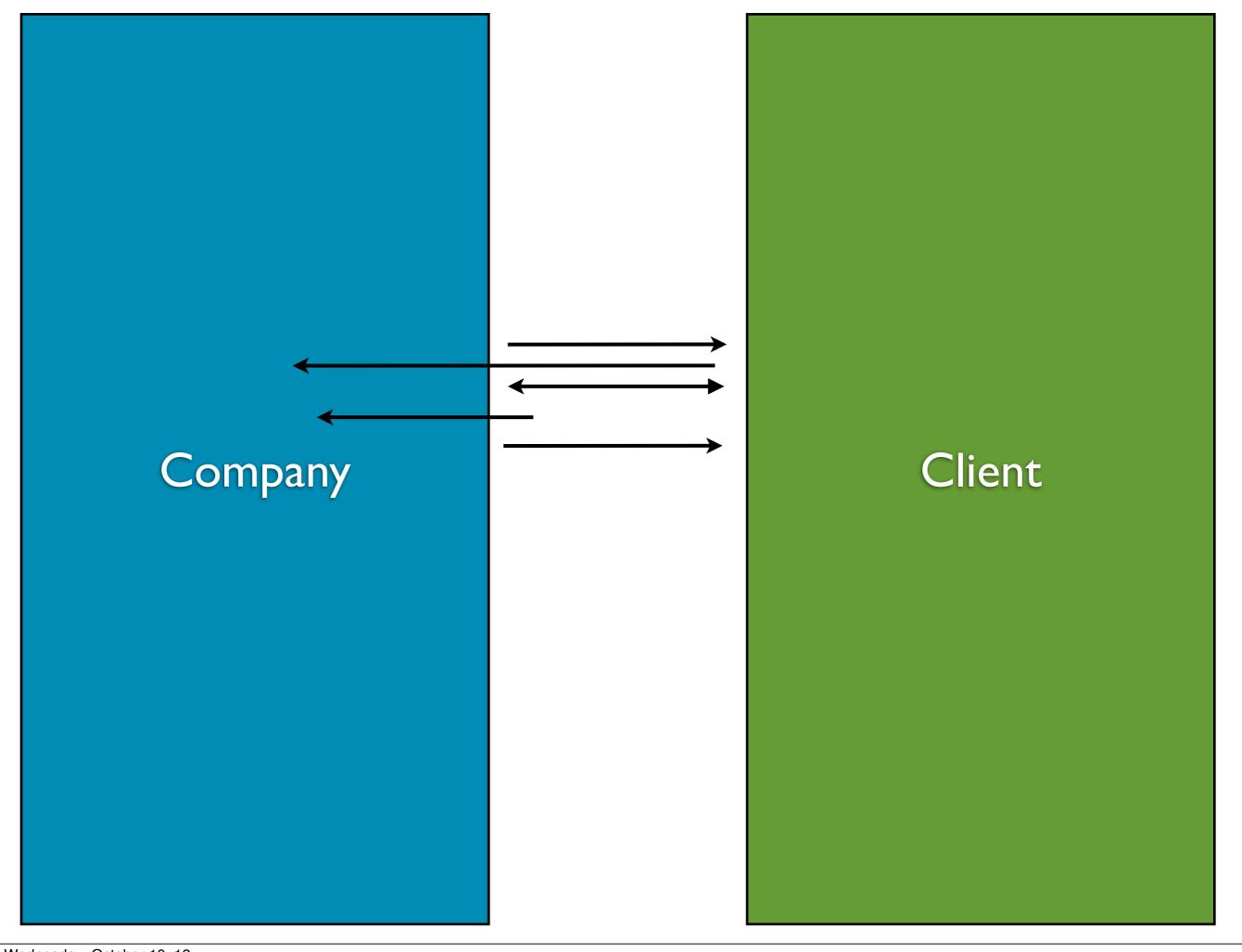
What do you do?

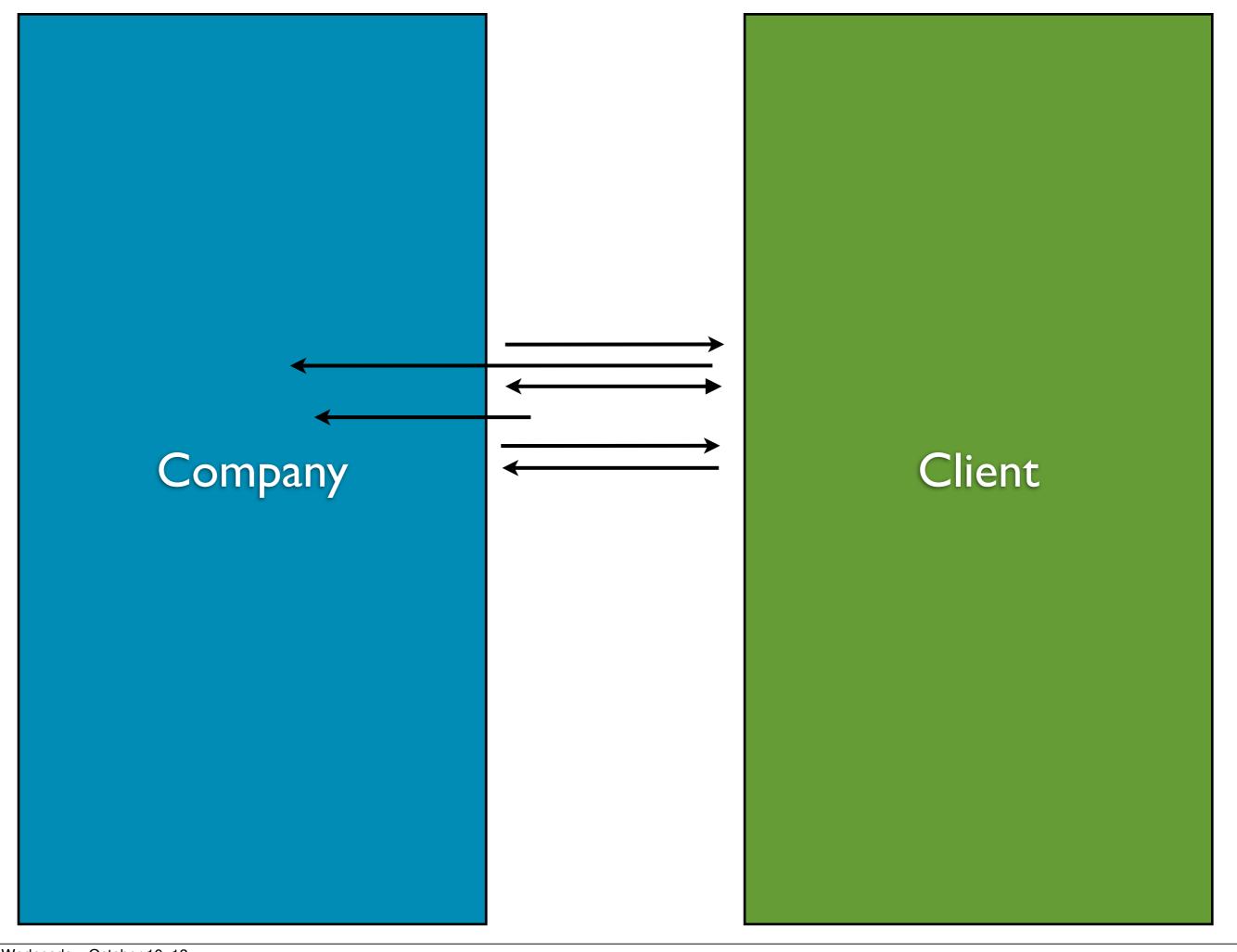


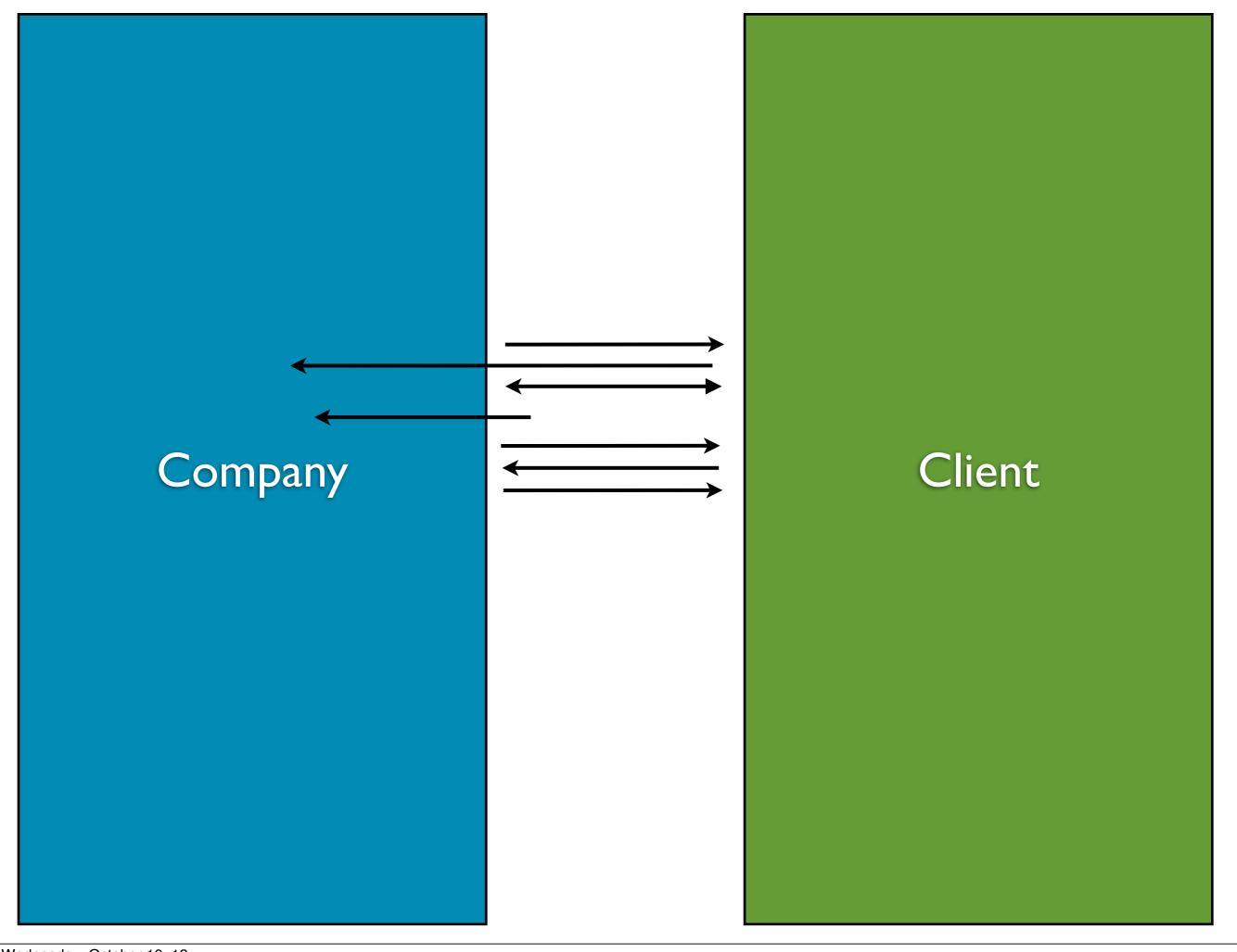


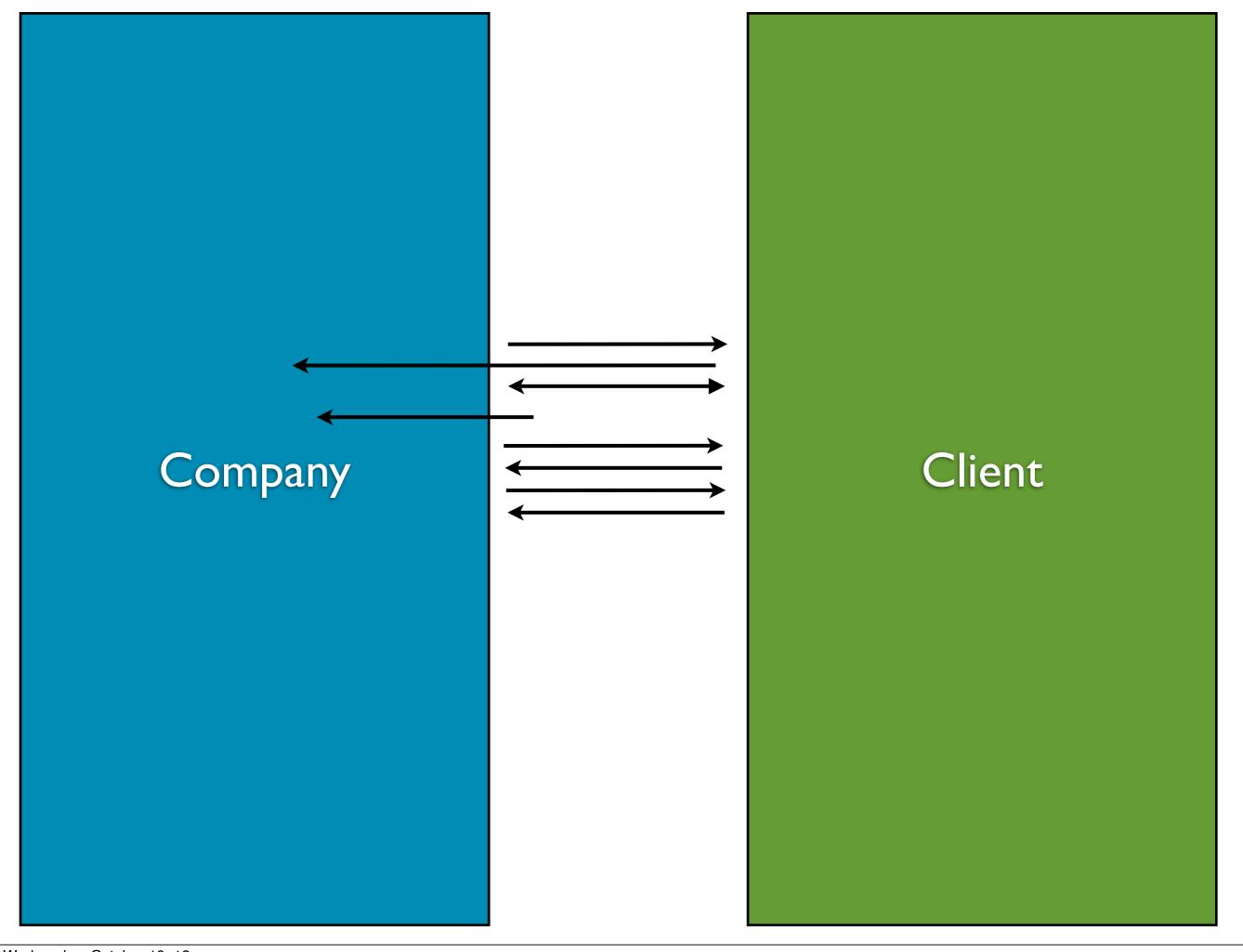


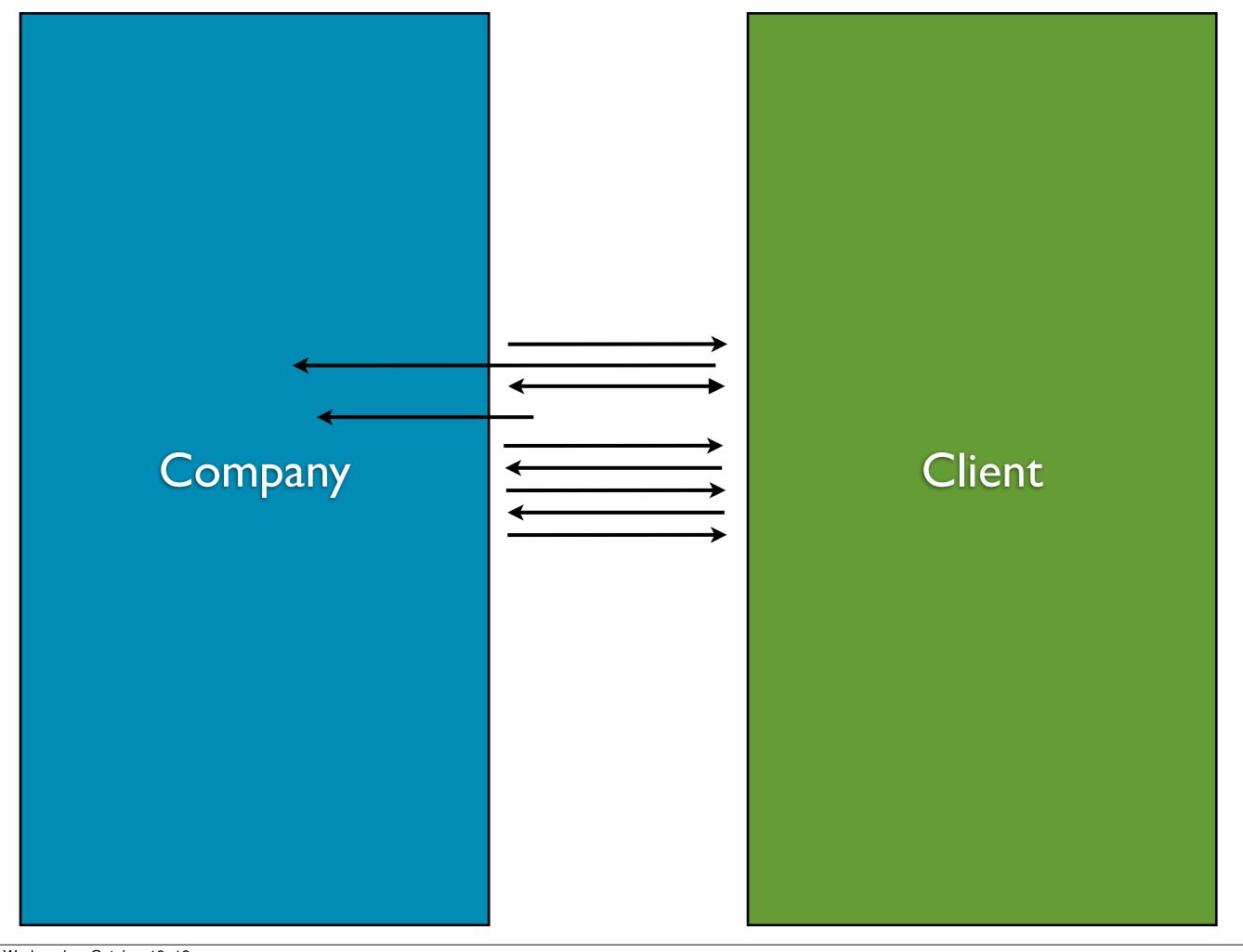


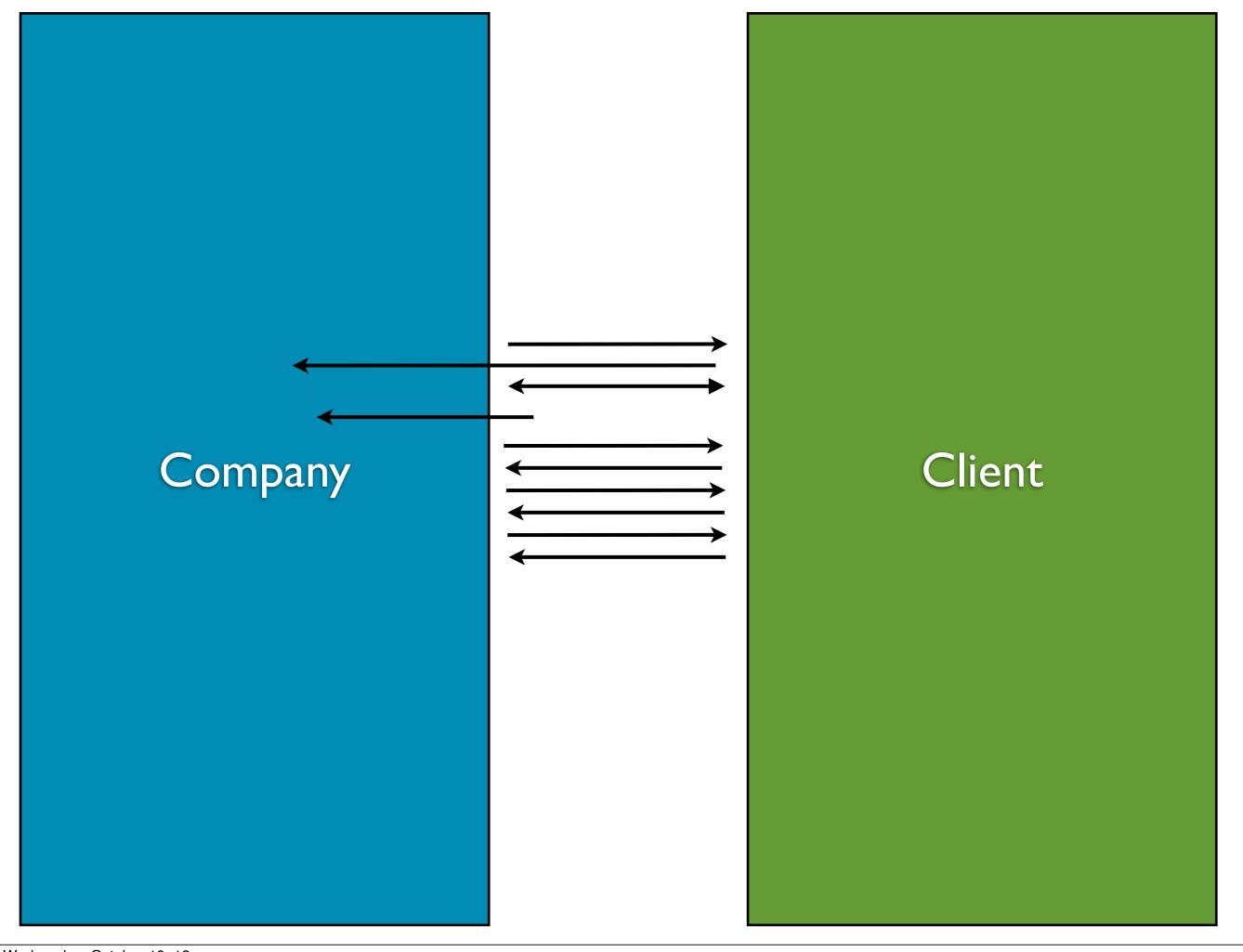


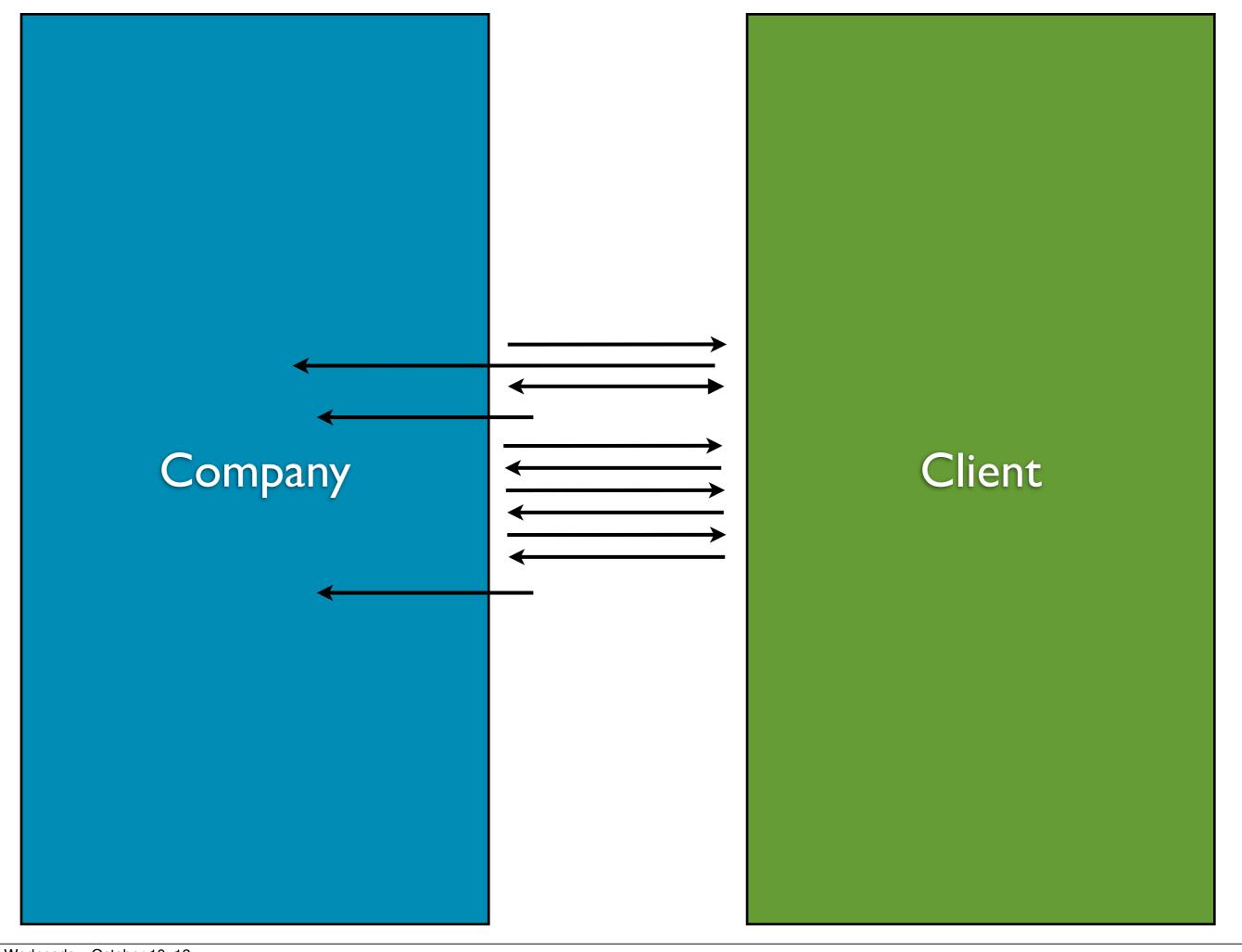


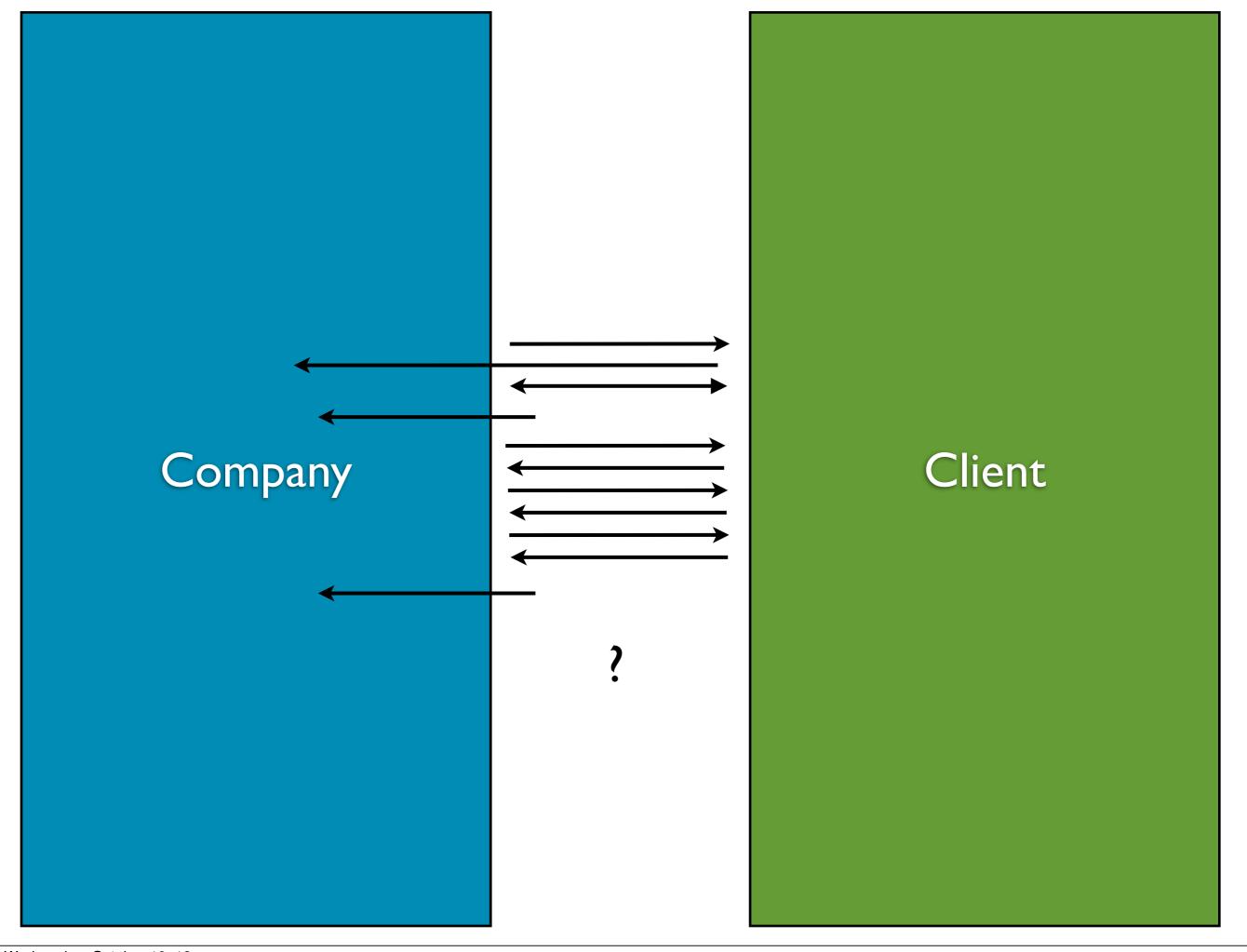














2 months in, I suggested the client removed the SSL warning, then call the company and say they fixed the problem.

Product was launched within 24 hours.

Checklist



It says it may be the certificate



I didn't put my neck out and escalated it



No one put their neck out



The entire operation delayed launch by 2 months and cost hundreds of thousands of dollars



Client took responsibility



I still get my raise and keep my job

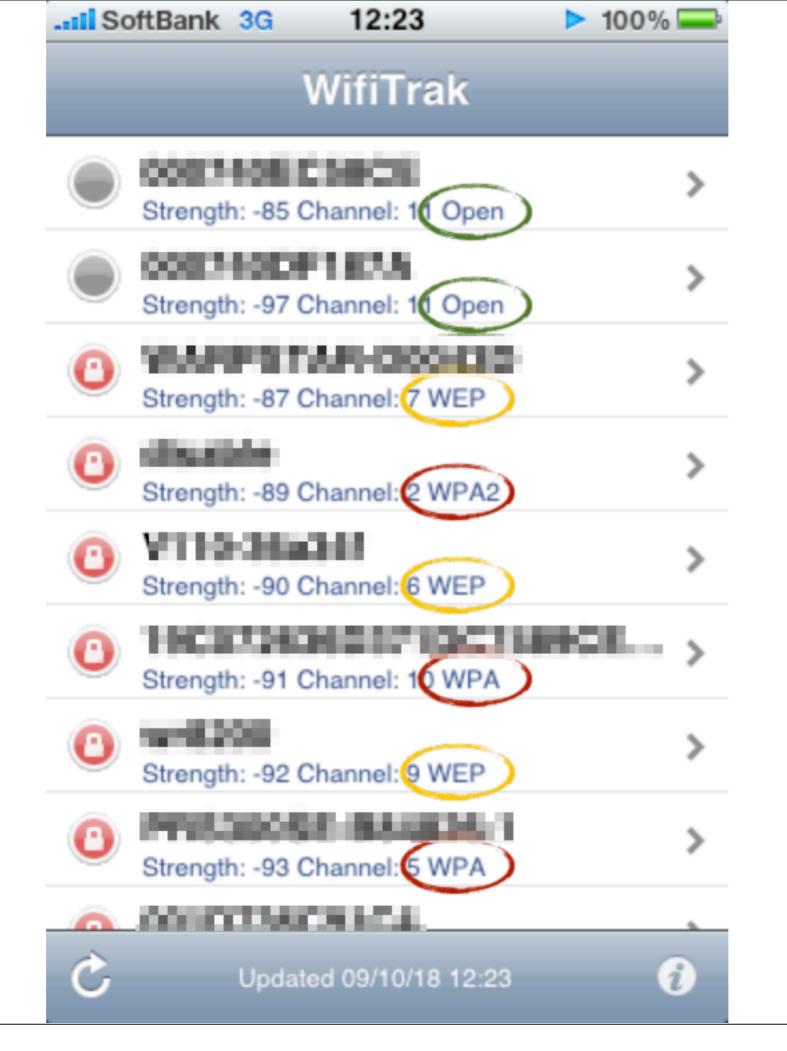
Exploitation Vectors

1) Stuff won't be fixed.

2) Create a responsibility setting and no one disturbs you.

"I am here on behalf of *unreachable high ranking manager*. VIII YOU be responsible when he finds out you disturbed my work?"

Wires? Where we're going we don't need wires!





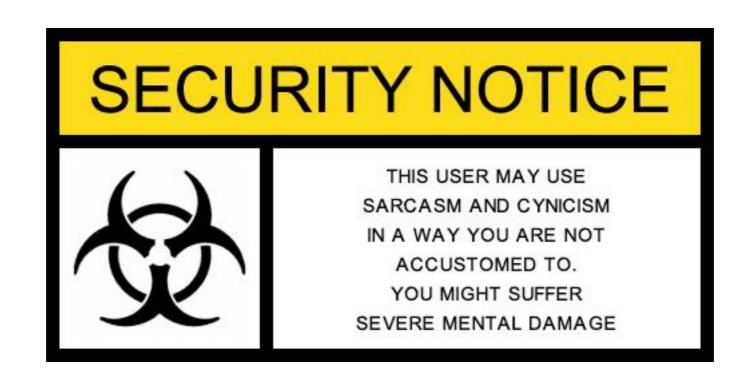


Cellphone hotspots

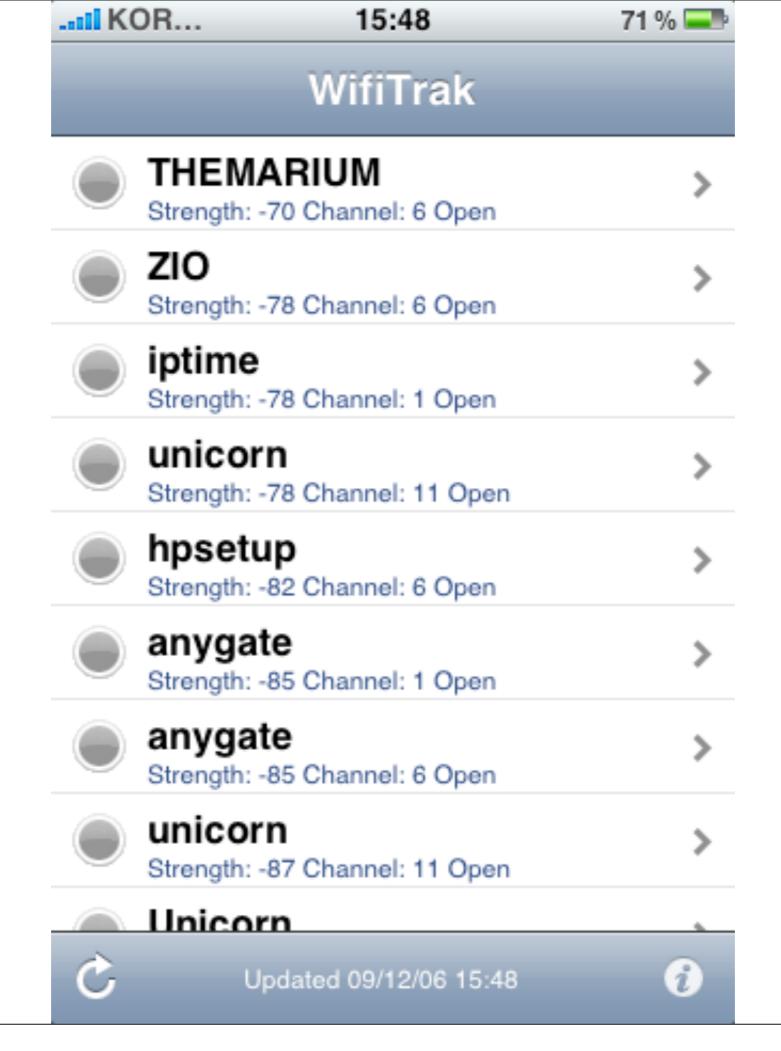


Access filtered by a mix of Mac Address and User-Agent sent to Gateway

Absolutely Secure



However Korea takes the Cake here



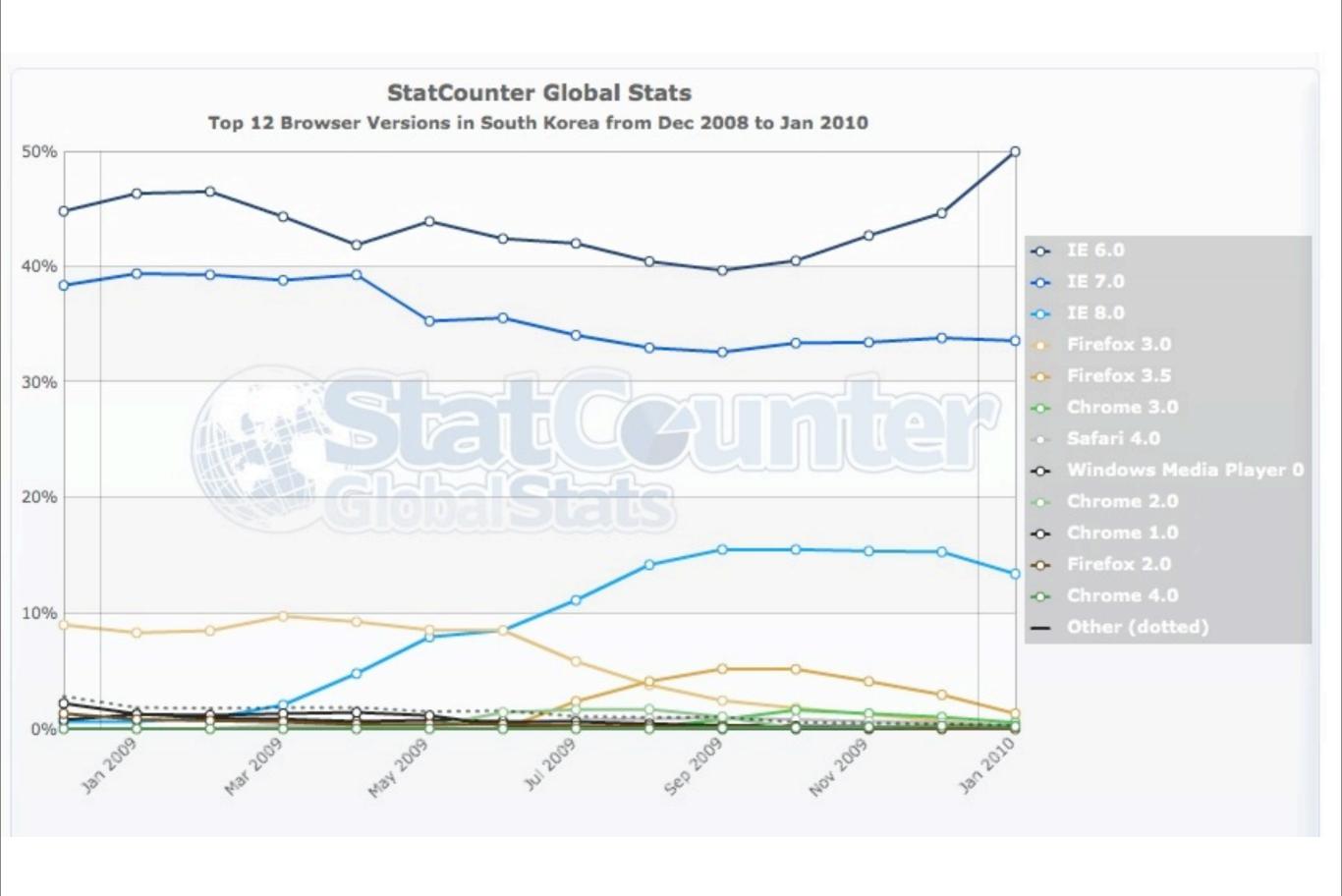
Exploitation Vector:

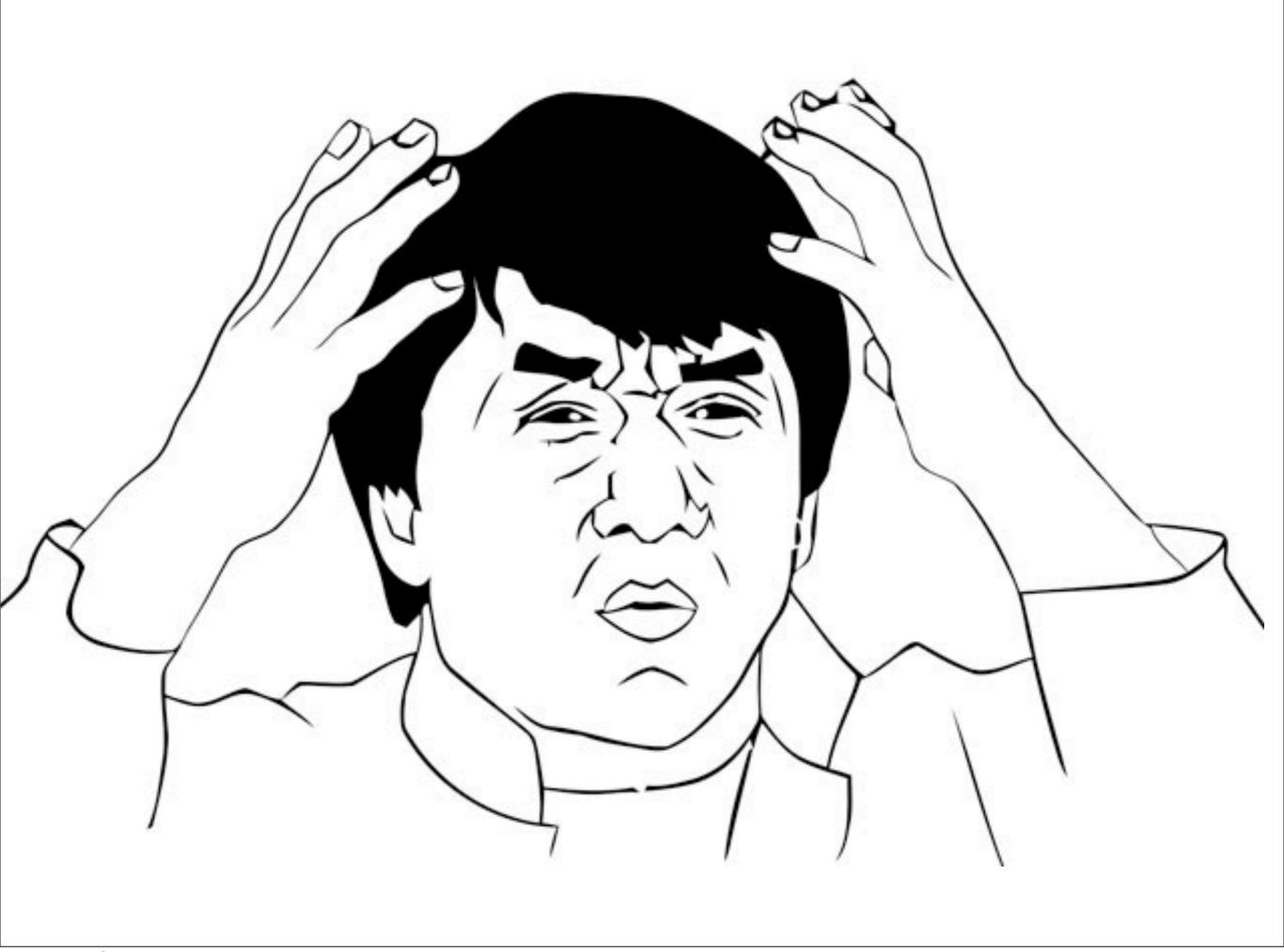
Yeah, gee, I wonder what anyone could ever do with anonymous open internet access.

Speaking of Korea

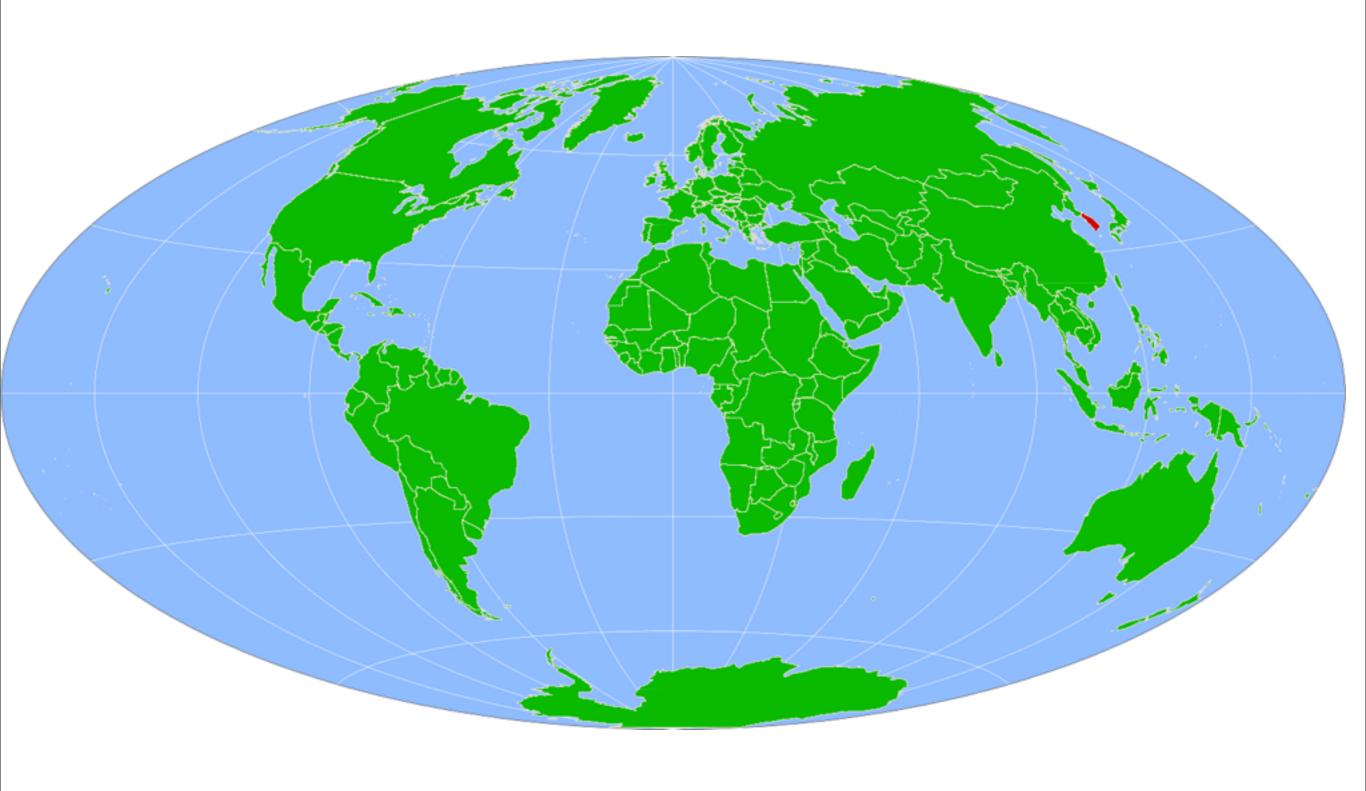
Taking all guesses - what's the browser market share for IE in Korea.







Adaption of SSL



SEED

- Published in 1998 by the Korean Information Security Agency
- 128-bit Block Cypher
- Alternative to SSL
- Required for online banking, online shopping, government transactions, etc
- Works as an ActiveX plugin compatible with some IE and Windows versions

Effects

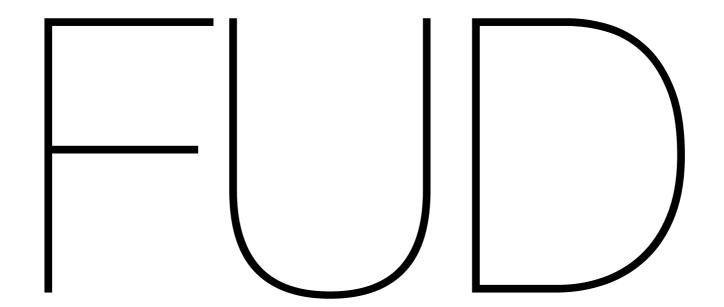
- Extremely slow adaption to new Windows versions
- Alternative browsers and OSs are virtually useless
- Also integrated with most cellphones (the iPhone was the first non-Korean cellphone sold)
- Very poor understanding of SSL

Many SEED variations allow for user identification, leading to a low perceived need for security.

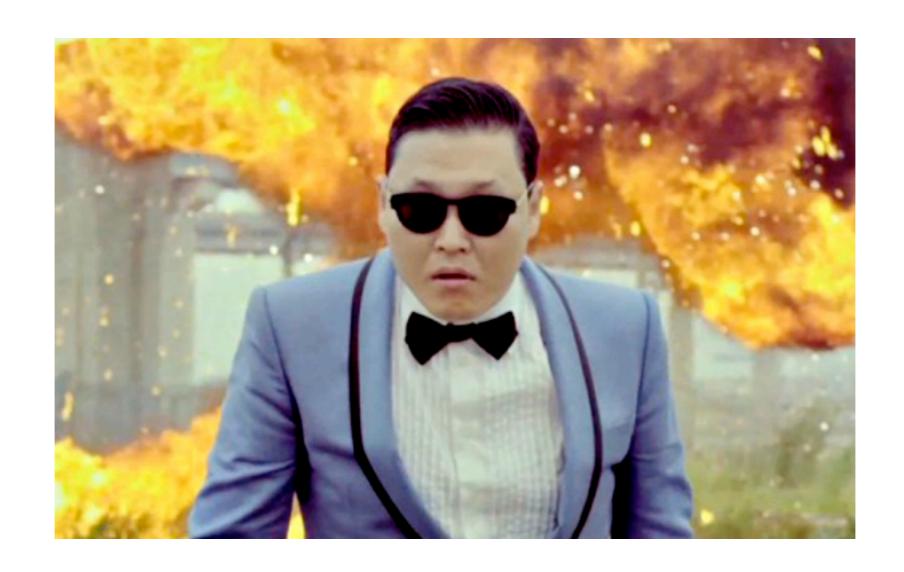
Many SEED variations allow for user identification, leading to a low perceived need for security.

More on this later...

Exploitation Vector

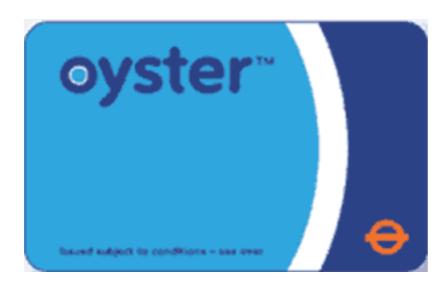


Oppan SEED Style



Too-Near Field Communication



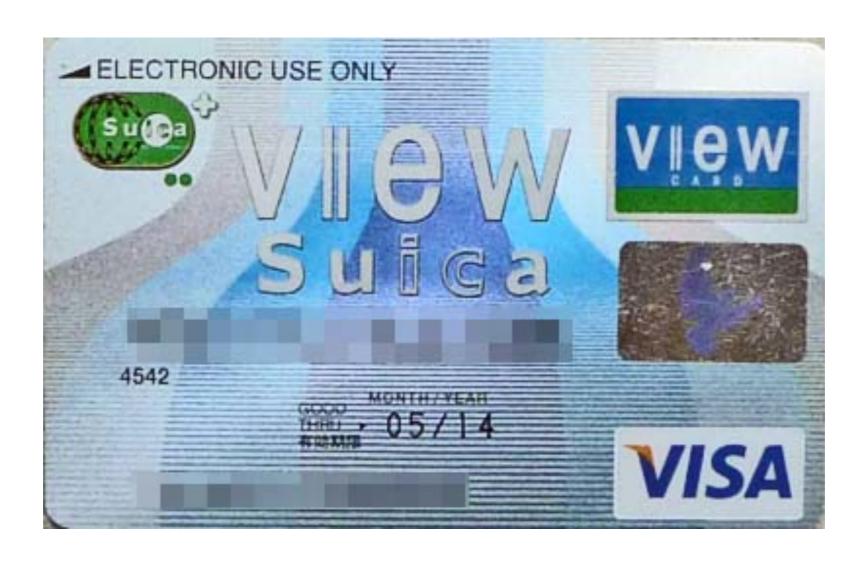














Why?

- Used virtually everywhere
- Always carried on body
- Automatically recharged or charged to phone bill (loose and/or high limits)
- Accepted by lots of online stores
- Stores your purchase history and reveals it without authentication





¥11,670

関連サイト

メニュー

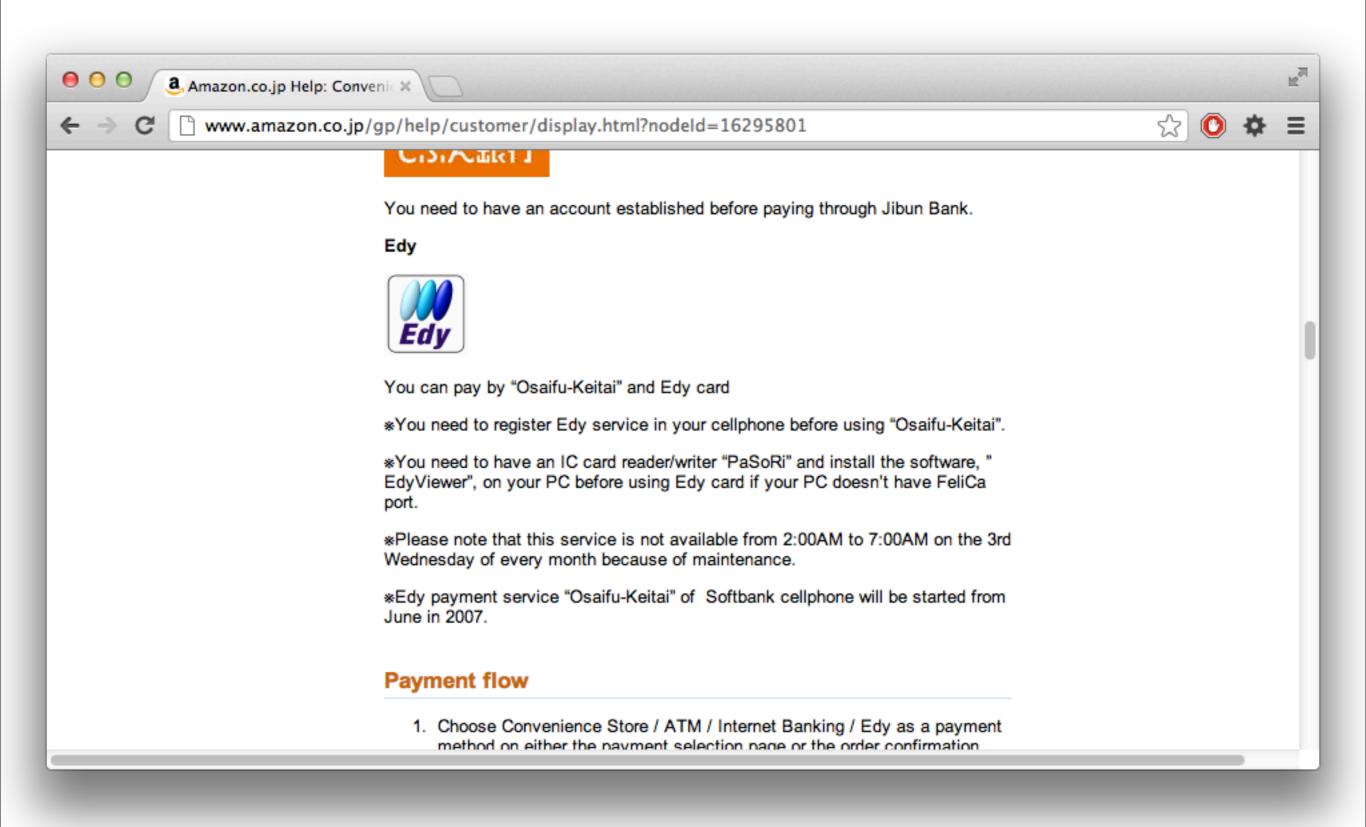
利用年月日 入場駅 出場駅 残額 メモ メロの6/12/29 JR東 JR東 JR東 メロの6/12/23 JR東 JR東 JR東 エリー・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・					
Second Second	利用年月日	入場駅	出場駅	残額	メモ
2006/11/26 JR東	2006/12/29 2006/12/23 2006/12/23 2006/12/23 2006/12/18 2006/12/18 2006/12/17 2006/12/11 2006/12/03 2006/12/02 2006/12/01 2006/11/26 2006/11/26 2006/11/11	JR東東東ルストの東東東の東東東の東東東の東東東の東東の東東の東東の東東の東東の東東の東東の東	JR東東東東東東 JR東東東東東東東東東東東東東東東東東東東東東東東東東東東東	¥11,670 ¥12,070 ¥12,230 ¥12,390 ¥12,700 ¥13,200 ¥13,700 ¥14,170 ¥14,170 ¥14,820 ¥15,320 ¥15,790 ¥16,000 ¥16,000 ¥16,350 ¥16,350	精算 磁気券購入 磁気券購入





Purchase Tracking









Purchase Tracking



Buying stuff on other people's tab





Purchase Tracking



Buying stuff on other people's tab

But Paul, Felica Cards only work across millimeters. You couldn't possibly get that close to a person with a reader without them noticing! You, sir or ma'am, have obviously never seen the Tokyo morning rush-hour.







Purchase Tracking



Buying stuff on other people's tab

Top 3 Hit List

#3 Airport Security

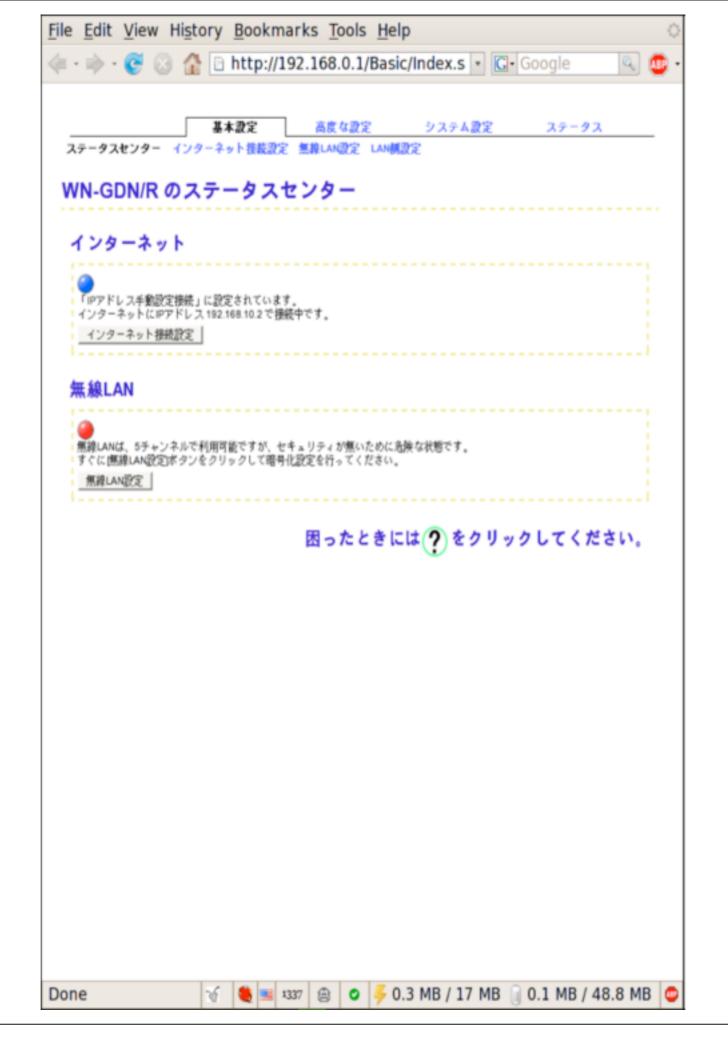


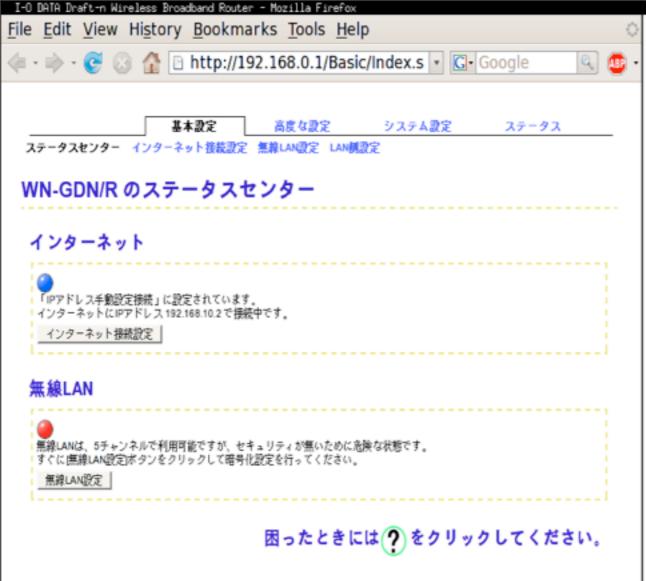
Wednesday, October 10, 12



Wednesday, October 10, 12

#2 Ultra Secure JavaScript



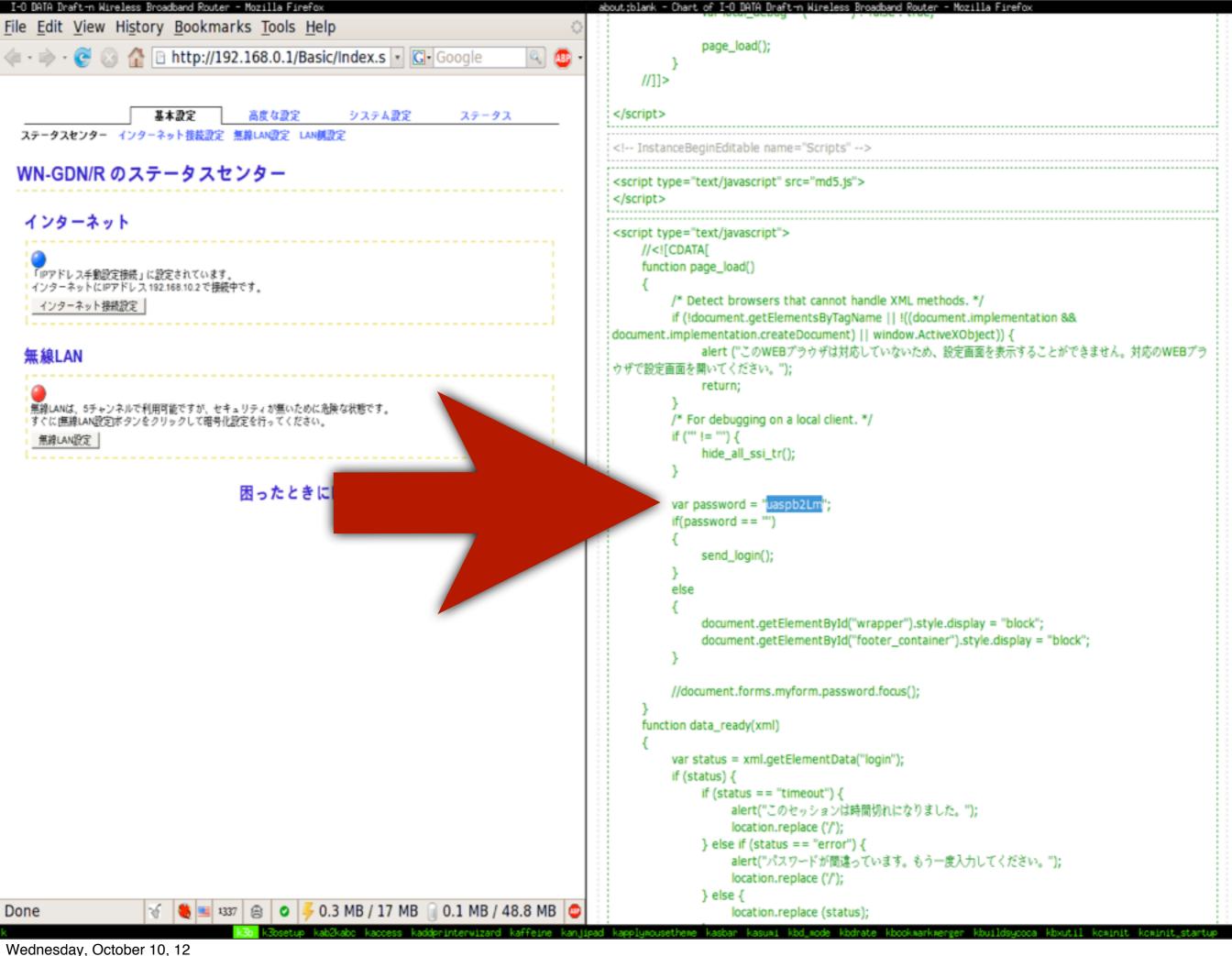


0.1 MB / 48.8 MB | @

```
page_load();
    //]]>
</script>
<script type="text/javascript" src="md5.js">
<script type="text/javascript">
    //<![CDATA[
    function page_load()
         /* Detect browsers that cannot handle XML methods. */
         if (!document.getElementsByTagName | | !((document.implementation &&
document.implementation.createDocument) || window.ActiveXObject)) {
              alert ("このWEBプラウザは対応していないため、設定画面を表示することができません。対応のWEBプラ
ウザで設定画面を開いてください。");
              return;
         /* For debugging on a local client. */
         if ("" != "") {
              hide_all_ssi_tr();
         var password = "uaspb2Lm";
         if(password == "")
              send_login();
         else
              document.getElementById("wrapper").style.display = "block";
              document.getElementById("footer_container").style.display = "block";
         //document.forms.myform.password.focus();
    function data_ready(xml)
         var status = xml.getElementData("login");
         if (status) {
              if (status == "timeout") {
                   alert("このセッションは時間切れになりました。");
                   location.replace ('/');
              } else if (status == "error") {
                   alert("パスワードが間違っています。もう一度入力してください。");
                   location.replace ('/');
              } else {
                   location.replace (status);
               kasbar kasumi kbd_mode kbdrate kbookmarkmerger kbuildsycoca
```

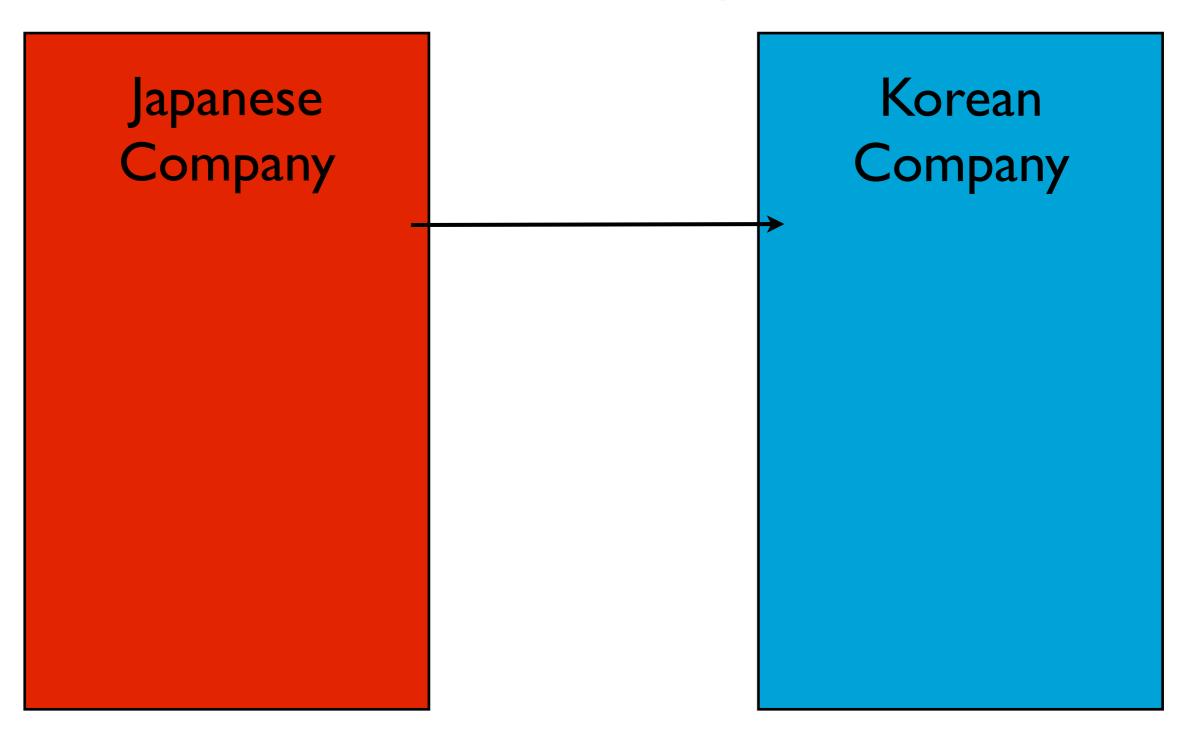
about;blank - Chart of I-O DATA Draft-n Wireless Broadband Router - Mozilla Firefox

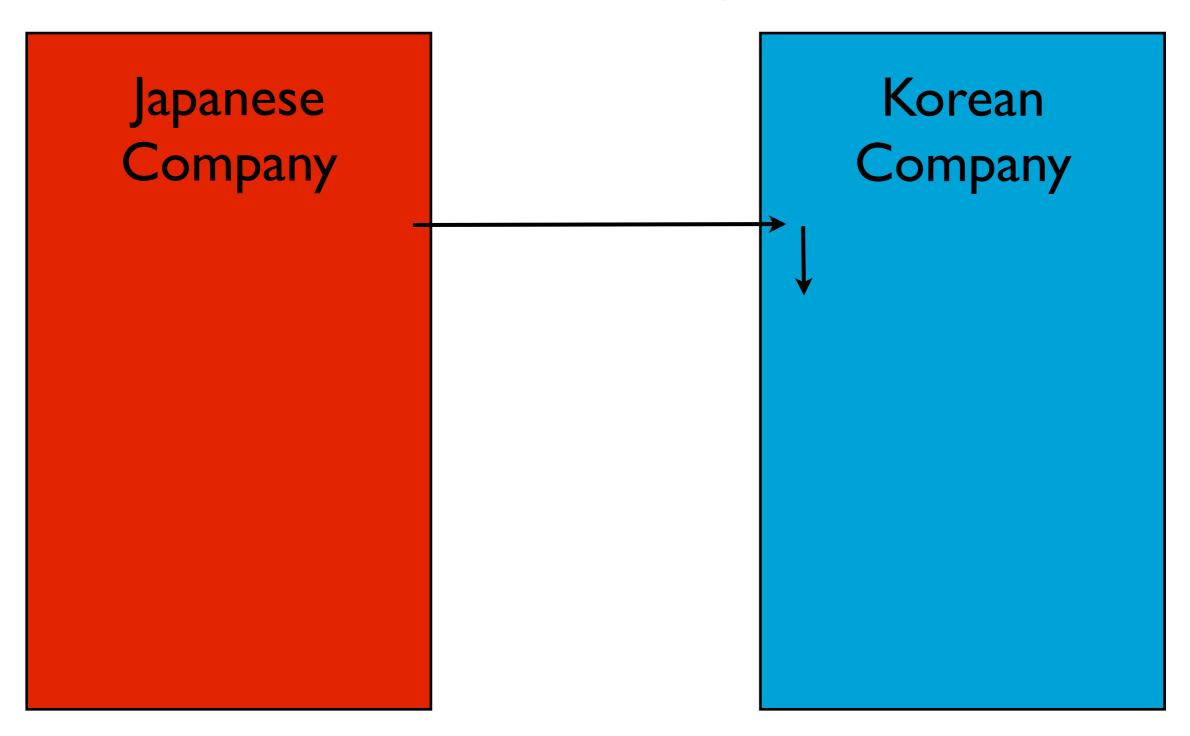
Done

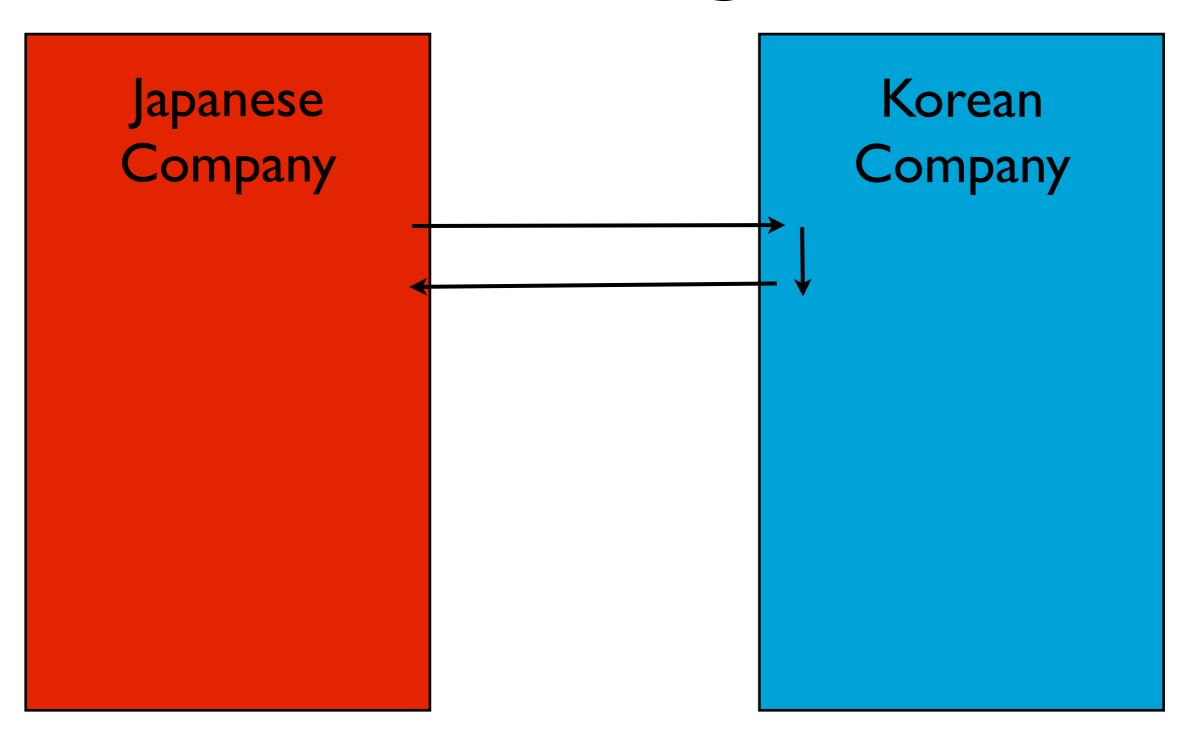


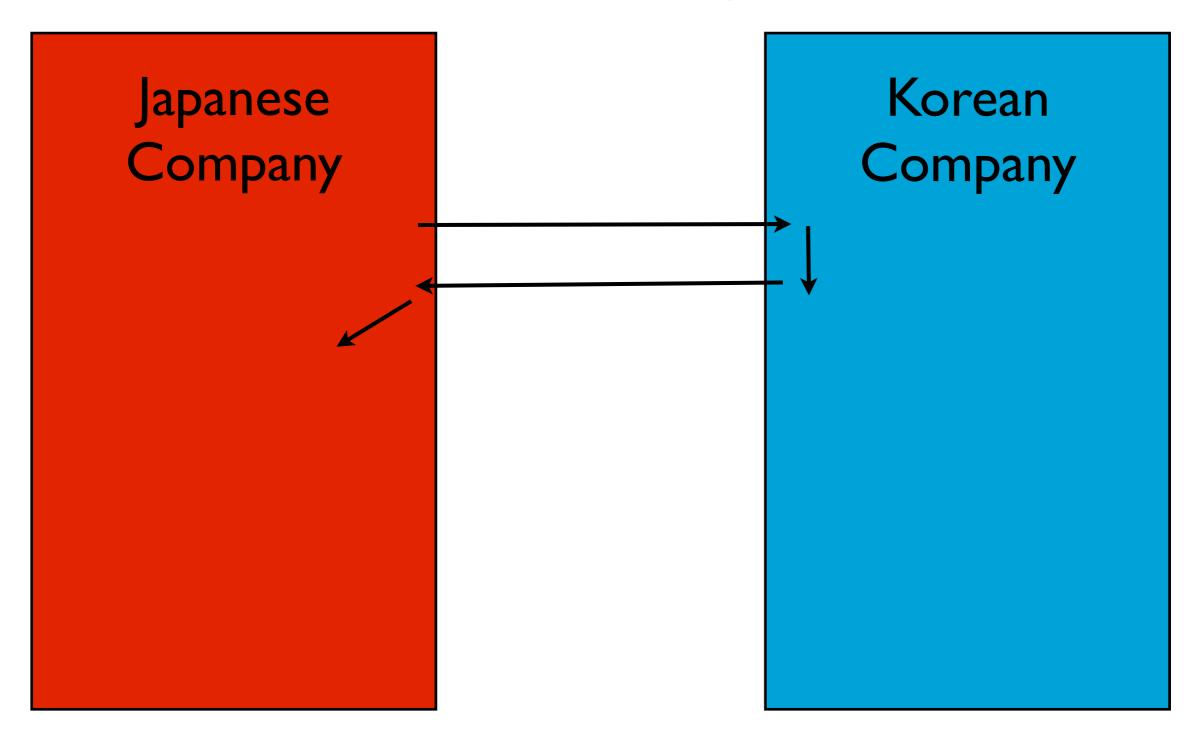
#I Korean-Japanese Web Development

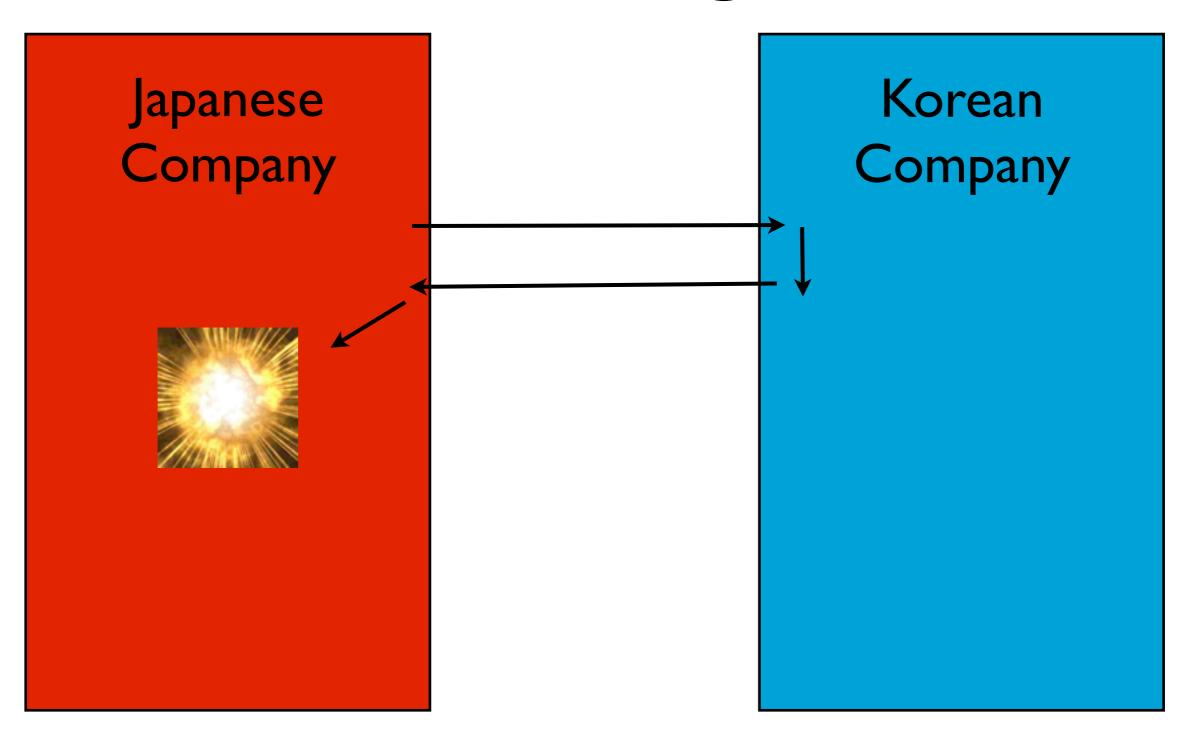
(The Grand Finale)

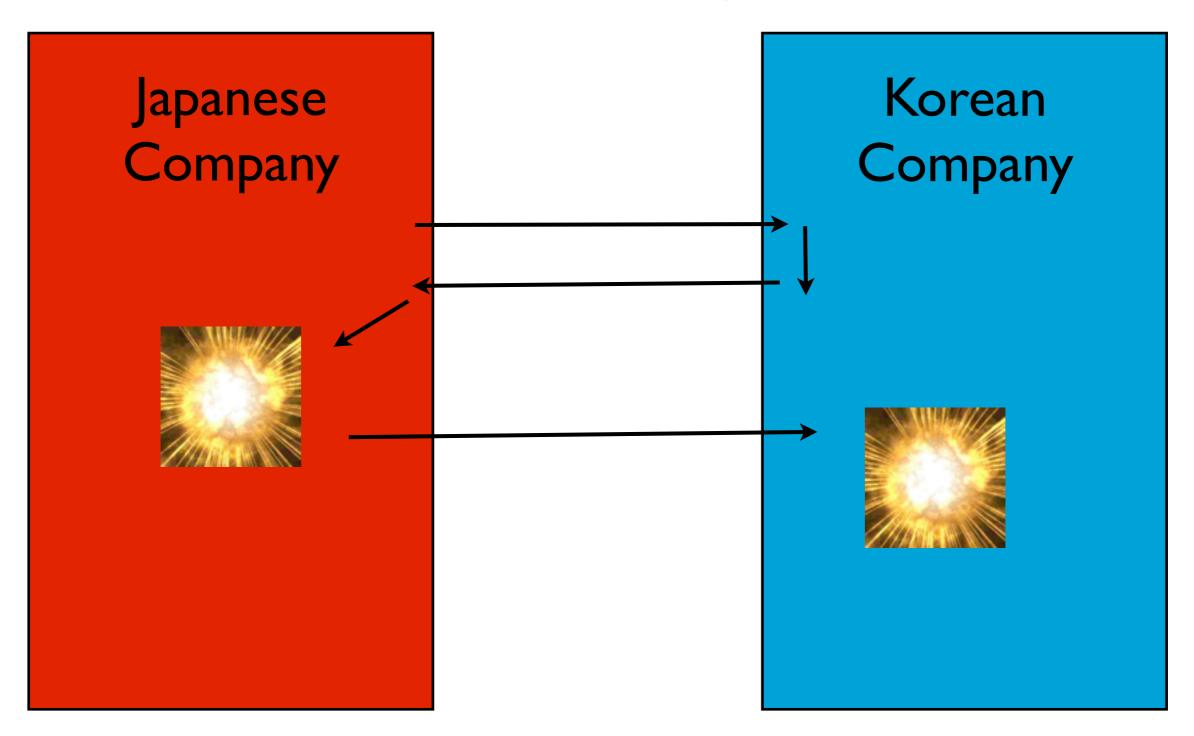


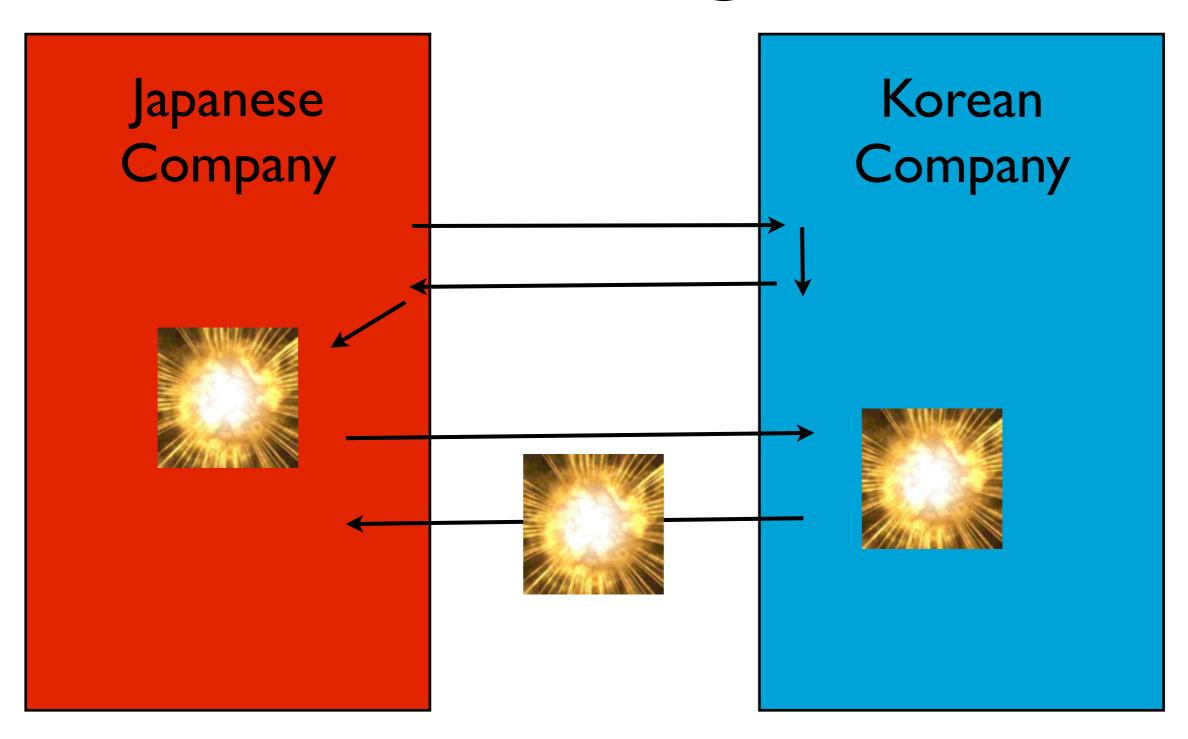


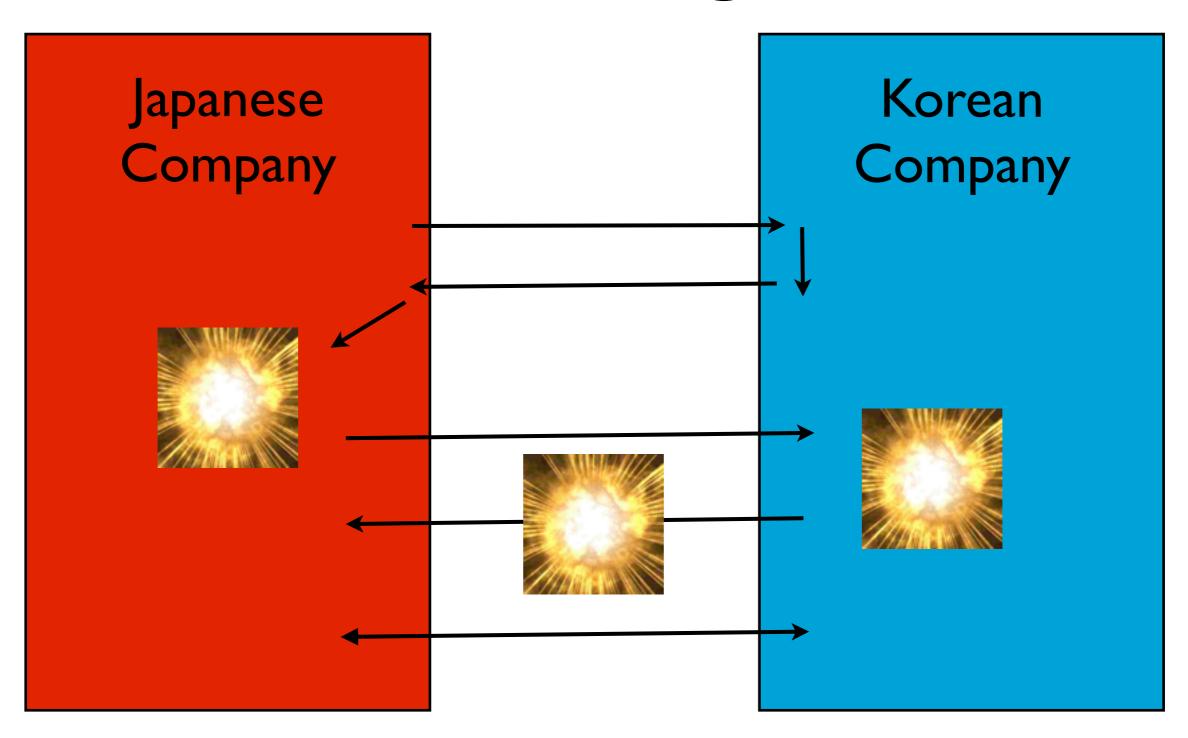


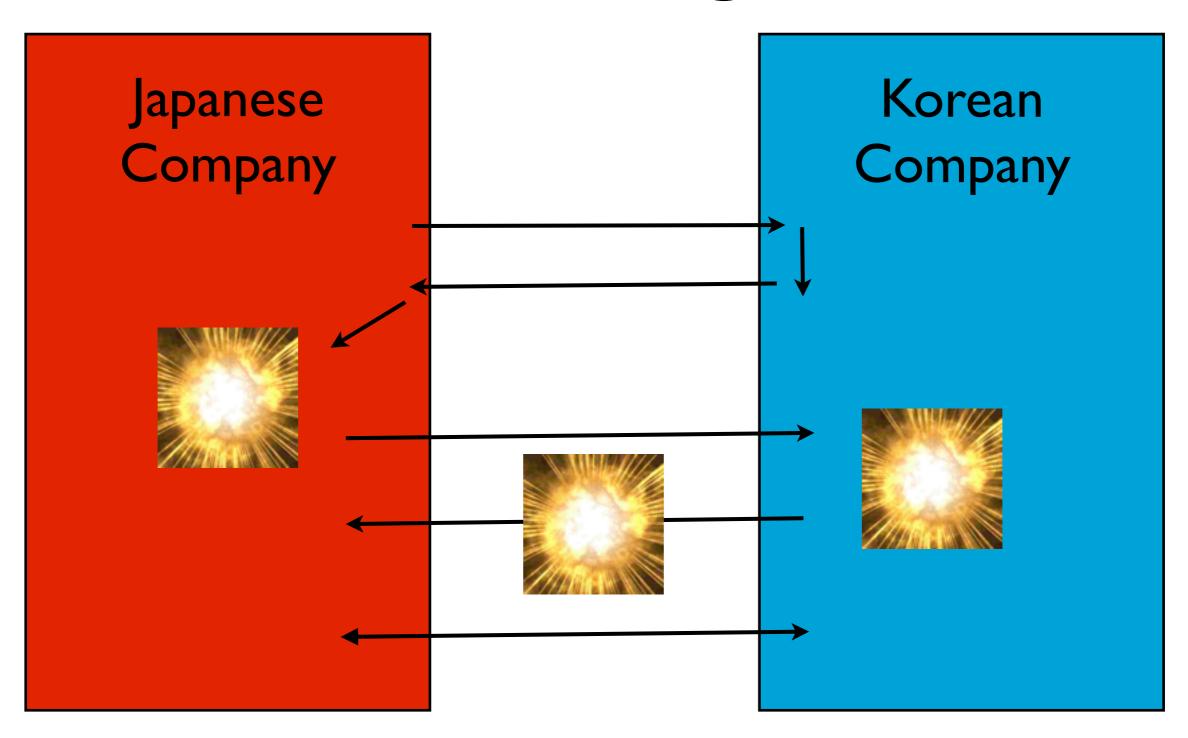












Critical Flaws

- Users not being logged in if name contains special characters
- Too quick session timeout annoying potential users
- Dislike colors
- Annoying SSL error
- Credit Card numbers stored in plain text

Non-Critical Flaws

- SQL Injection on Login Form
- 207 counts of XSS
- Admin console "secured" by JavaScript

Non-Critical Flaws

- SQL Injection on Login Form
- 207 counts of XSS
- Admin console "secured" by JavaScript

"We can launch with those. No one would check that."



Are we screwed?

Yes.
\<°_>/



Attribution

- Slide 7 <u>apple 94</u>
- Slide 8 paukrus
- Slide 13 Unknown. If you're the artist, drop me a line and I'll buy you a beer.
- Slide 14 PSY
- Slide 16 Anderson Mancini
- Slide 37 Warner Brothers
- Slide 48 diloz
- Slide 49 Martijn Booister
- Slide 55 Disney
- Slide 96 Milre
- Slide 174 PSY
- Slide 188 <u>d0b33</u>

Thank you for listening!