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Shmoo-Fu: Hacker Goo, Goofs, and Gear with the Shmoo

The Shmoo Group www.shmoo.com



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What's up Shmoo?

- Howdy & introductions...
- Our festivities will include:
 - IDN Fallout & Homograph Attacks for Personal Identities
 - Super Spy Stuff
 - Revving Up Rainbow Tables
 - Rogue Squadron & EAP Peeking

- Shooting Your Security Wad
- Don't Try This at HomeAnd MORE!

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Stickers anyone?

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IDN Fallout

- At ShmooCon 2005, Eric Johansen dropped the browser bomb regarding IDN issues.
- The press ran with it a bit.
- The folks responsible for IDN ranted for a bit.
- But did anything concrete occur?

DefCon 13

• And where are we now?

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1337 Personal Identities

- So Ericj is now 3ricj, BTW.
- Oh snap. That rhymes.
- Where does the system break down when your name doesn't quite conform?
- Does 3ricj get more fan mail?
- Can the man keep your 1337 identity down?

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And now... Pablos.

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Super Spy Stuff

- Robots got boring, so Pablos starting hanging out with models after his chic hacker photo shoot in FHM.
- The result was nothing short of spectacular, as the fashionable cell-phone stowaway strifes hot women face were finally addressed.

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While Pablos discusses the alien technology inner workings of his secret ninja lair, you can stare at this...

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Dan Moniz goes crazy...

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rainbowtables.shmoo.com

- We think rainbow tables are neat.
- Just for fun, we started hosting rainbow tables that we had generated.
 - LanMan
 - Via Bittorrent
 - FREE
- Some people liked that. Yay!

DefCon 13

• Some people didn't...

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----- Forwarded message -----From: Zhu Shuanglei <shuanglei@hotmail.com> Date: Mar 10, 2005 12:42 AM Subject: About your shmoo site To: beetle@shmoo.com

Ηi,

I am Zhu Shuanglei, the author of RainbowCrack software. I notice you are offering free BitTorrent links on your website for the rainbow tables. For those guys selling the table without permission from me, they are not welcome. But you are worse.

As you may know, I develop the rainbowcrack tool and release it the the public for free. I just want to introduce the technique to the world and those need it can benifit from this software. If I sell the tables, I am only making some money for my work and for the fee of hosting my website and for my computing resource. This should be quite reasonable. I am not a business man, if I am there will not be the source code or table generation tool free on the net and I can make a lot of money.

Are you feeling you are cool "Because knowing all passwords is cooler than trying to crack one. ;)". All over the world there will be a lot of guys can do what you do, they aren't. Do you know why? To show off prove neither your ability nor your knowledge.

If possible, please keep honour of my intellectual property of this software, and let those need the tables to generate by themself. If everyone act like you there will be no reason for me to develop this software further or develop other useful software. Or I will never release anything useful to the public.

Don't be crazy any more!

Best Regards,

Zhu Shuanglei

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Revving Up Rainbow Tables

- So, badass LanMan tables are online now via Bittorrent, and still for FREE.
- Sorry for the delay!
- Meanwhile, Dan decided to "be crazy" a bit more.
- We don't need your stinkin' code, Zhu!
- And Snax says, "FUCK OFF!" DefCon 13

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New Wi-Fi kung-fu from Beetle...

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Why oh why do we Wi-Fi?

- Who here has an open wireless network at home? At work?
- Crap! My Tivo can't do WPA. Neither can my PSP. Ummm... does it matter?
- When and where should we Wi-Fi?
 - Coffee Shops? Airports? Hospitals?
 Banks? Ummm... Nuclear Power
 Plants? DefCon 13

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Where did we go wrong? Where are we going?

- Technology of convenience versus the inconvenience of securing it.
- The poor, poor users were left out in the authentication cold.
- Half-ass security standards pass the buck and / or provide defacto insecure options.
- Security acronyms have taken precedence over proper implementation.
 DefCon 13



"Choose a Mobile Network with Care."

For a low-priced mobile network, choose FI2G/FINNET.



Hello Switch to Radiolinja for Elisa, the Vodafone network in Finland.

1.

Hello We've changed our name! Radiolinja is now called Elisa, the Vodalone network in Finland.

alica

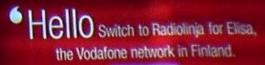






"CHOOSE A MOBILE NETWORK AT RANDOM!"

Club World. More beds, more places, more often.



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How the FUCK does the user know?!



The owners and users of this system are exercising First Ar

Access Point



SSID: "goodguy"

Stronger or Closer Access Point



SSID: "badguy"



Wi-Fi Card

SSID: "badguy"

111-22

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Rogue AP Attacks Choose your Wi-Fi

weapon...

Cisco Gear @ 100mW (20dBm)

Normal Gear @ 25mW (14dBm) Senao Gear @ 200mW (23dBm)

Use a 15dBd antenna with a Senao for 38dBd total...

6 WATTS!

VS 25mW?

BAD GUY WINS! NO CONTEST!

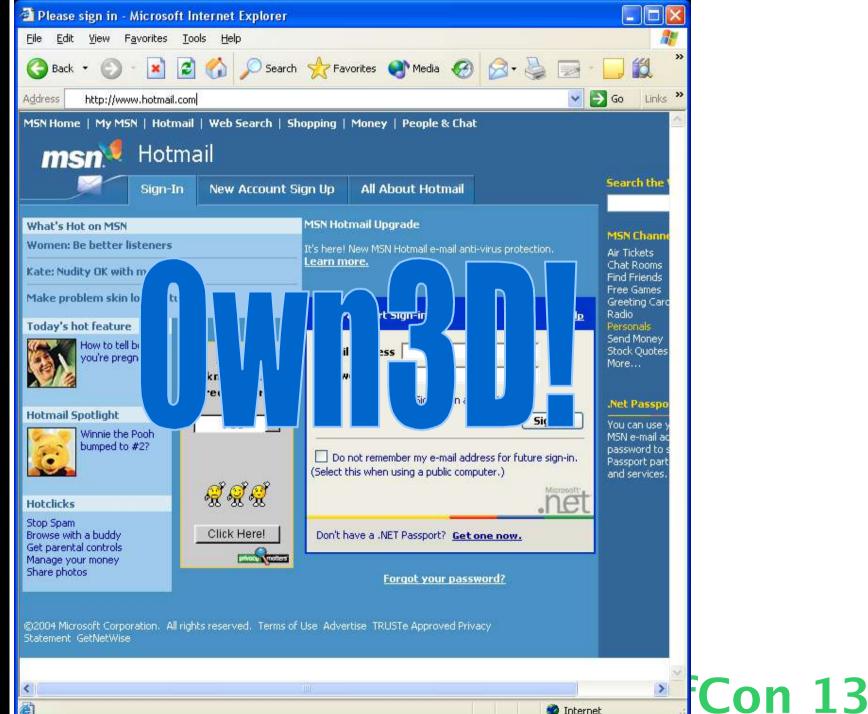
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1



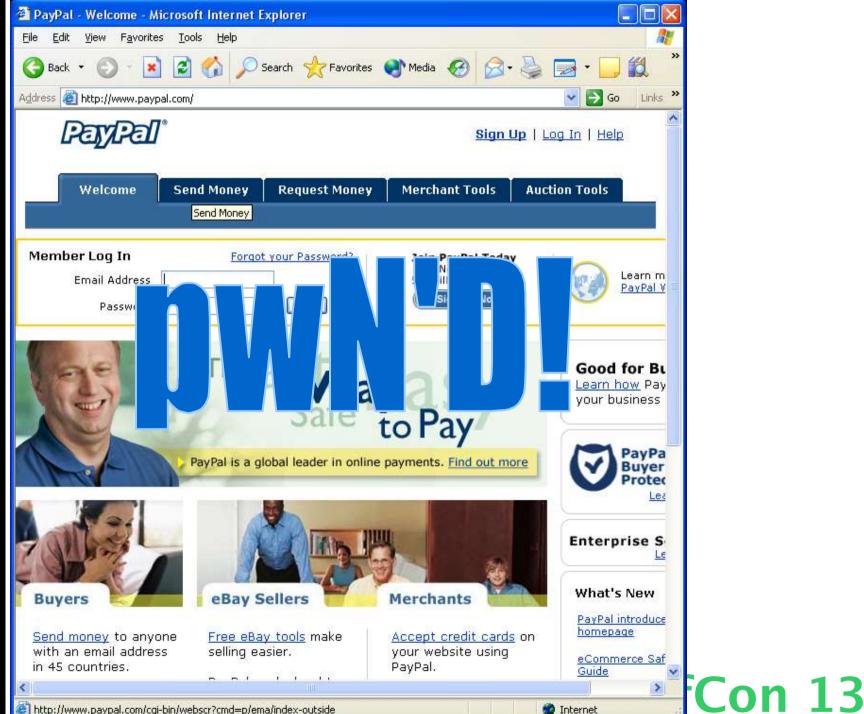
🕝 Internet

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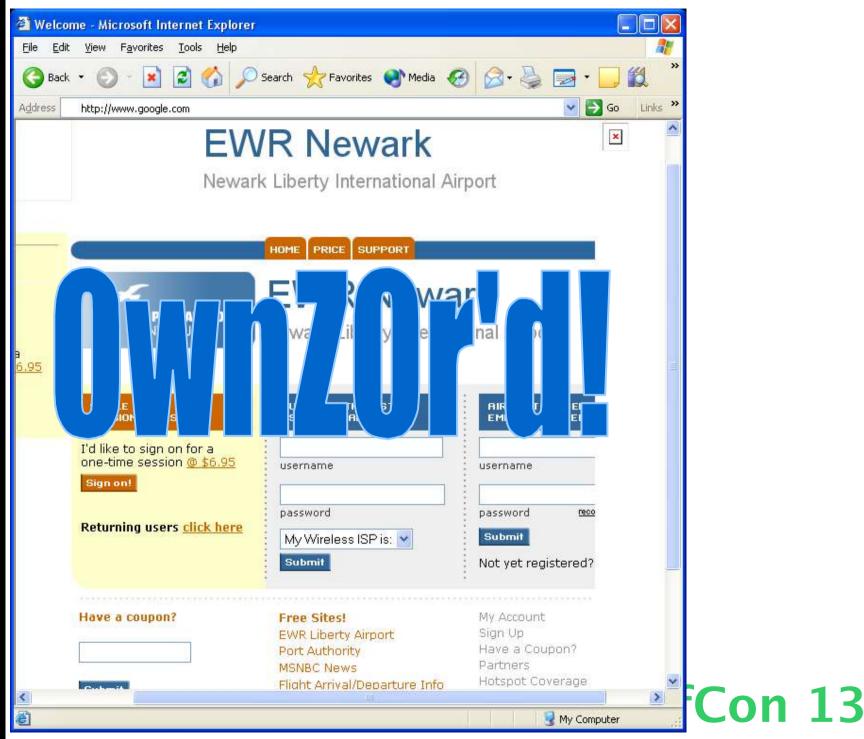


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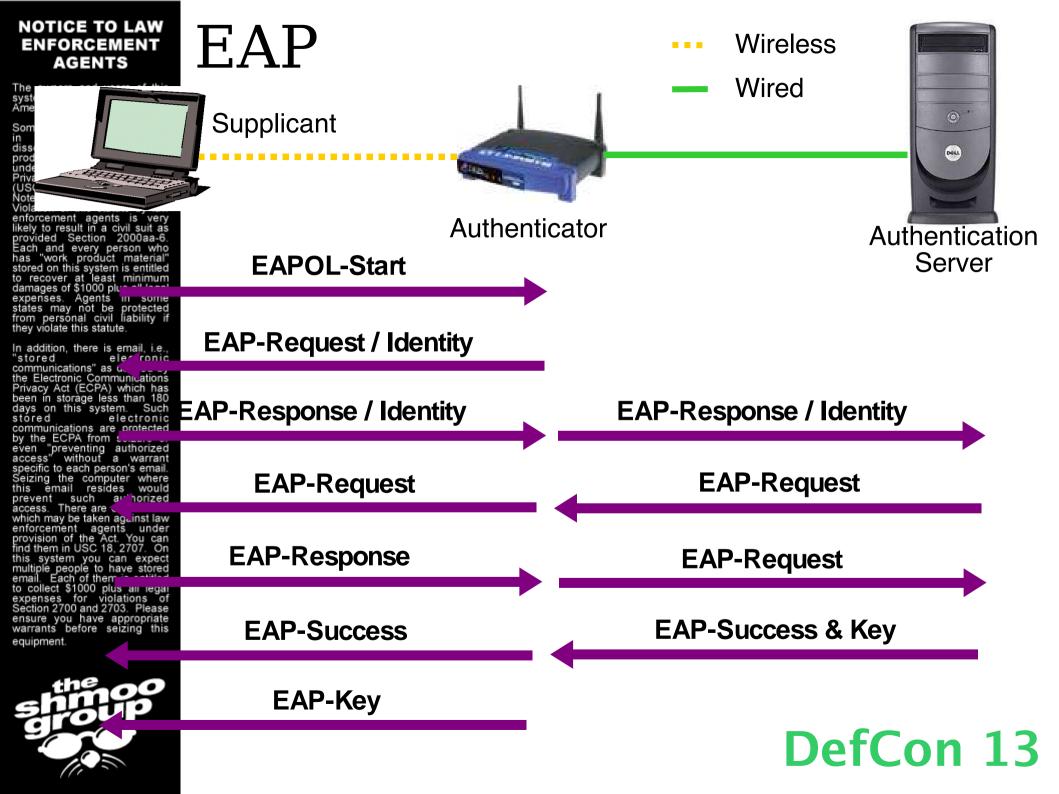
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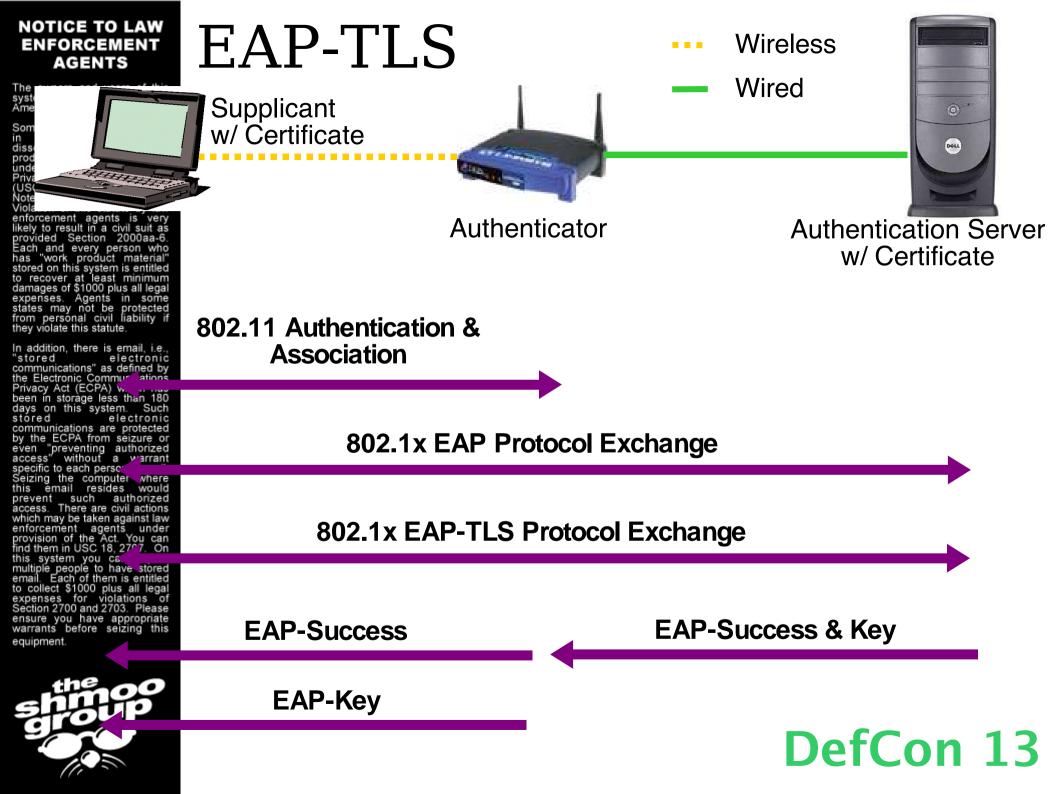
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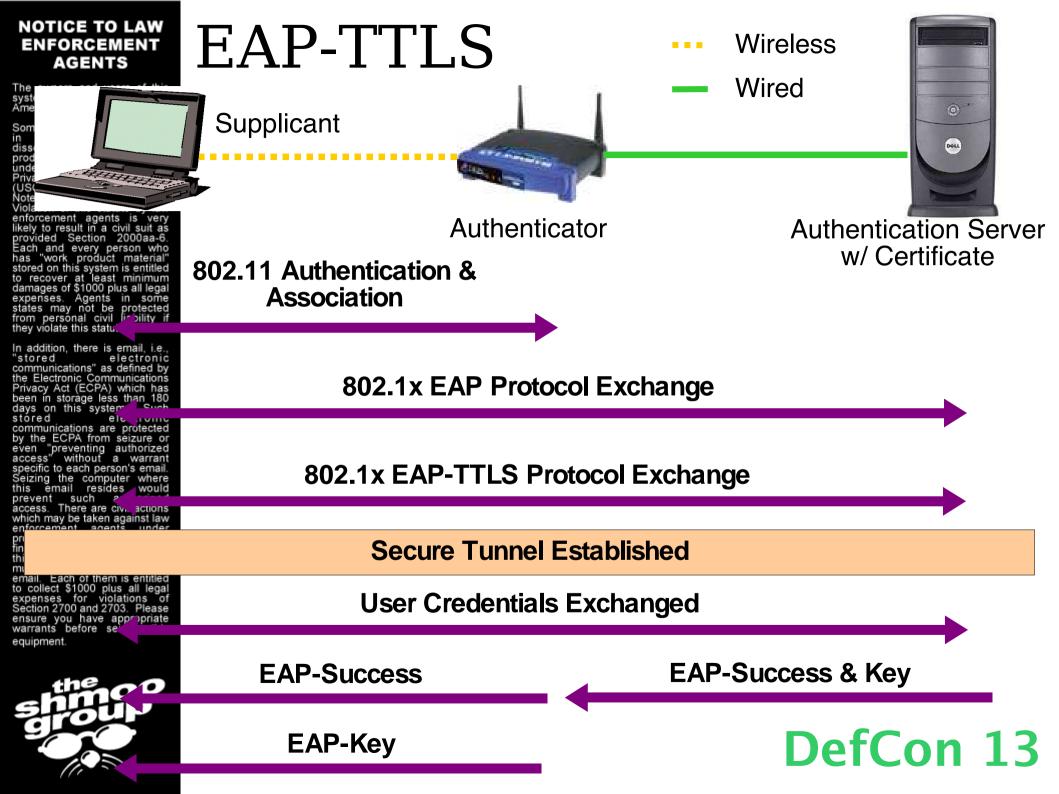


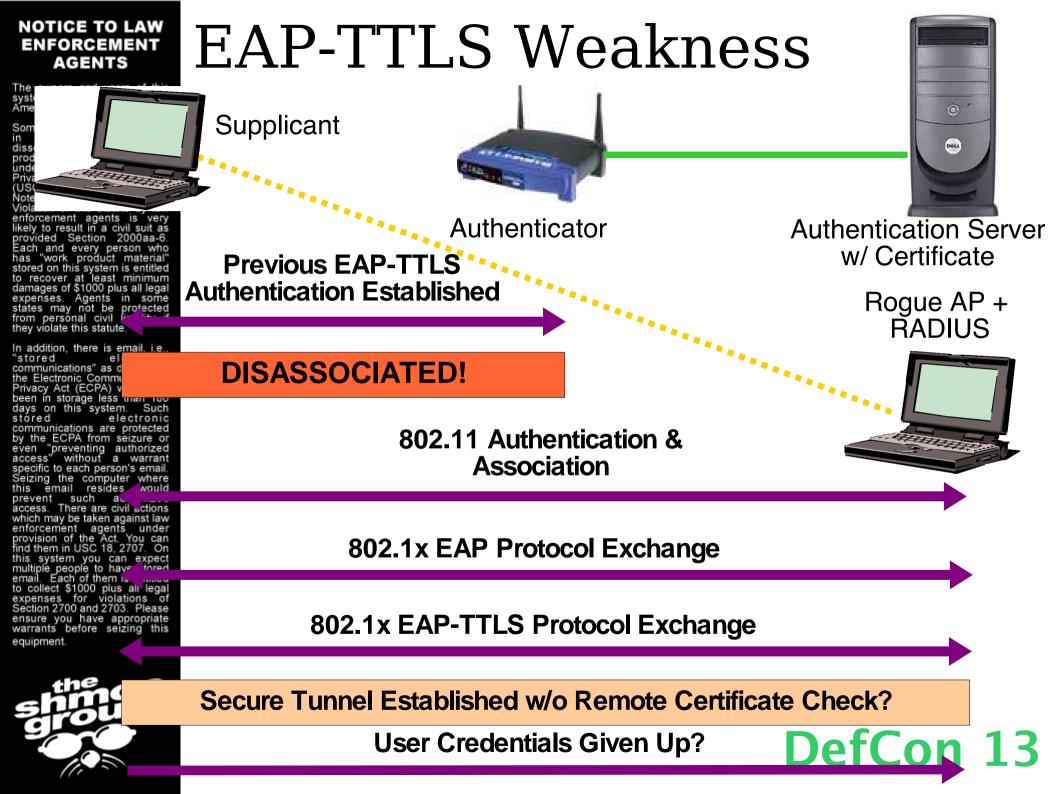
Rogue RADIUS

- Who says rogue APs can't be used against corporate wireless networks?
- There are plenty of ways to screw up EAP.
- FreeRADIUS provides a simple & easy way to accept EAP credentials
 - Integrates nicely with hostapd.
- Can allow for "EAP Peeking f. Con 13









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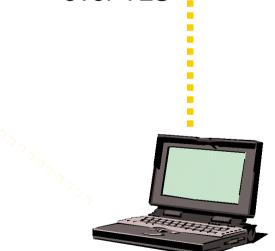
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EAP-TTLS w/___ PAP Attack?

Windows XP w/ SP2

EAP-TTLS w/ PAP



Rogue AP w/ Rogue RADIUS Server



Wireless

Wired

RADIUS Server

1. Disassociate users.

2. Learn username & password.

3. Disassociate, copy creds to local EAP config.

4. Impersonate victim with legit username & password whenever.

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All Your PAP... Google for targets, if you like. ;)

| SecureW2 | Profile: DEF | | | | | |
|------------|-------------------------|----------------|--------------|--------|------|-------|
| | | N | Alfa & Aris | | | |
| Connection | Certificates | Authentication | User account | | | |
| Select Au | thentication M EAP T | 1 | Config | ure | | |
| Advanced | | | ок | Cancel | DefC | on 13 |

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All Your CAs... The "All or None" Vulnerability

| otected EA | P Properties | | ? | × | |
|--|---|-----------------------|--------|-------|-----|
| hen connect | ng: | | | | |
| Validate s | erver certificate | | | | |
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PEAP Attack?

Windows XP SP2

PEAP w/ MSCHAPv2 over TLS



Rogue AP w/ Rogue RADIUS Server



Wireless

Wired

RADIUS Server

1. Disassociate users.

2. Learn DOMAIN and username w/ rogue AP.

3. Disassociate, seed local password file.

4. User continuously attempts to reauthenticate.

5. Repeat #3. Authentication success = correct password 13 guessed!

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EAP Peeking Attack Demo

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Wireless Weaponry for Windows

- But rogue AP attacks require a "sophisticated hacker", right? Wrong.
- SoftAP + TreeWalk + Apache + ActivePerl = Airsnarf for Windows
 - http://airsnarf.shmoo.com/airsnarf4win.
 - "Evil Twin Access Points for Dummies"
- But why only run one rogue AP, when you can run two... **orthree? 13**

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Windows Rogue AP Attack Demo

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Rogue Squadron Demo

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Heeeeeere's Rodney!

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Shooting Your Security Wad

(Never let Beetle title your slides)



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Why is Rodney ranting now?

- Been doing product reviews (public and private)
- Keep seeing some incredibly lame product "features"

DefCon 13

• There's a risk of FPGS (Ford Pinto Gastank Syndrome)

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Three Hard Questions?

- Does your product produce an external log?
- Do you have a security incident report mechanism?
- Does your product store it's key material securely?

Why are these hard questions in 2005?

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Don't make things worse

• Text t.b.d.



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Stupid Vendor Tricks

 (things you can't believe a security vendor would try to sell to a security customer.)



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Attacks you should try

• (Things you already knew that you should try on your security infrastructure)

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How you can make things better

- (We're not the bad guys. We're trying to be educated consumers. Here's some things you can do to help make things better.)
- If you show how one of these possible flaws can be broke, submit to present it at shmoocon 2006)



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Did you want more gear? Okey dokey. CowboyM, show 'em what you got.

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New Gear Demo

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And Bruce gets to rant, too!

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Bluetooth Security

• Things have gotten worse, not better

- Millions more radios than last year
- Several high profile vulnerabilities
- Near zero focus from enterprises
- Trifinite.org's work
 - Blooover quite the uber tool

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Bluetooth Security

- Several other attacks via AT commands
 - Dialing, getting data, etc... not good things to do without authentication
- Pairing attacks, known for years, are now being coded and used
- WIDS still seems to equal 802.11 tho...
 - Gonna be a bad year for IT security

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Defending Wireless Networks

- We seemed to have covered a lot of ground on the Offensive.. What about Defense *boom boom* Defense!
- First there was Host Spot Defense Kit (HSDK)
 - Released BH Fed 03
 - Looked for directed rogue AP attacks against your client

DefCon 13

- OS X, Linux, and Windows code

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Defending Wireless Networks

- At the time of HSDK, there was NO capability for rogue detection in commercially avail software
- Today, we're still not much better
 - AirDefense Mobile, some other small stuff
 - Rogues are THE BIGGEST threat against enterprise networks
- So, while the industry is still finding their whatnot with both hands, we're making...

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Hot Spot Defense Kit v2

- Enterprise wireless IDS systems look for any attack, not just one directed at a particular client
- When you are on the road (or don't have the "luxury" of an enterprise WIDS) you need the same kind of protection



The owners and users of this system are exercising First Amendment rights.

Some material on this system is in preparation for public dissemination and is "work product material" protected under The First Amendment Privacy Protection Act of 1980 (USC 42, Section 2000aa). Note that this is a civil statute Violation of this statute by law enforcement agents is verv likelv to result in a civil suit as provided Section 2000aa-6 and every person who Each work product material stored on this system is entitled to recover at least minimum damages of \$1000 plus all legal expenses. Agents in states may not be protected from personal civil liability if they violate this statute

In addition, there is email, i.e. "stored electronic communications" as defined by the Electronic Communications Privacy Act (ECPA) which has been in storage less than 180 days on this system. Such stóred electronic communications are protected by the ECPA from seizure or preventing authorized without a warrant specific to each person's email the computer where email resides would prevent such authorized access. There are civil actions which may be taken against law enforcement agents under provision of the Act. You can find them in USC 18, 2707. On this system you can expect multiple people to have stored email. Each of them is entitled to collect \$1000 plus all legal expenses for violations Section 2700 and 2703 ensure you have appropriate warrants before seizing this equipment



Hot Spot Defense Kit v2

• HSDK v 2 aims to be an environmental monitor of sorts

- Looks for any zip in the wire, not just ones directly effecting the client
- If you're in downtown Baltimore, and someone starts shooting, you tend to freak out even if they're not shooting at you... wireless shouldn't be any different

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HSDK v2

- Still under development
- Looking for:
 - Mass auth/deauth/assoc attacks
 - Fake AP signatures
 - Reinjection attacks (hard)
 - The standard rogue detection stuff from v1
- If something is detected, the green ball turns red (step away from the computer)
 - If security software isn't usable, it's
 useless
 DefCon 13

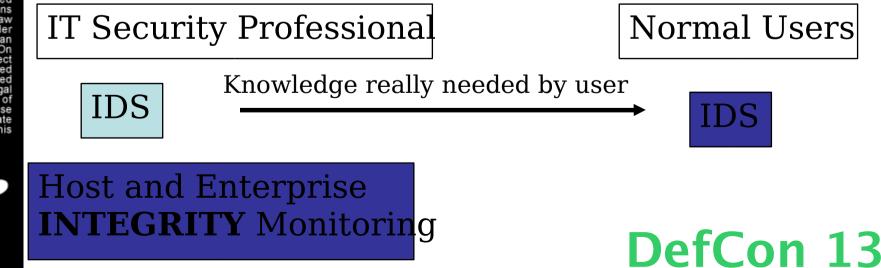
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Speaking of...

- As security professionals, we sure haven't learned much
 - Security needs to be usable by the users
 - Users need hueristic decisions made for them and presented in red or green balls
 - Security admins need to act like professionals and have a real understanding of their operations

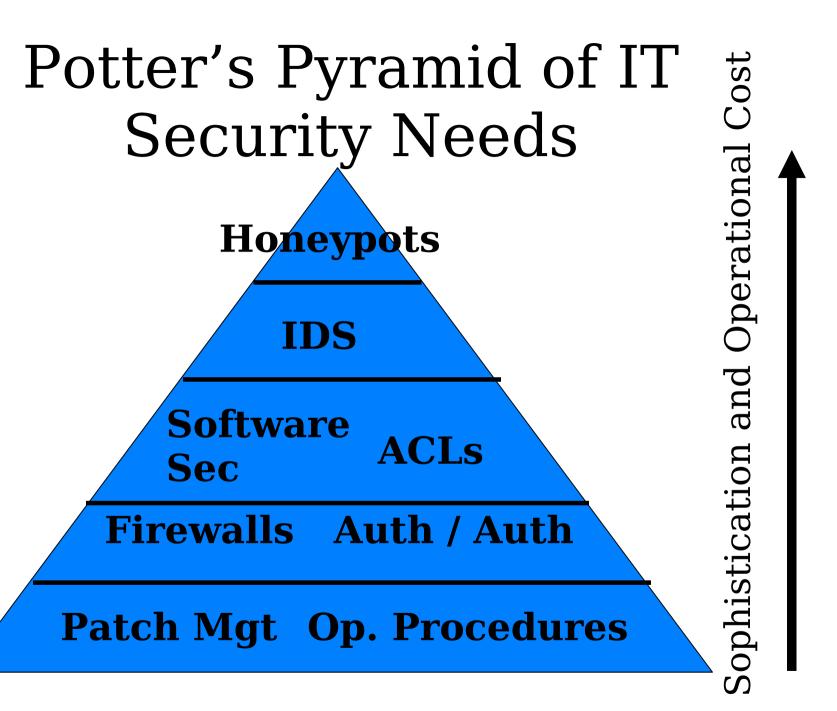


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Links



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Another Shmoo Announcement Goes Here

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Thanks! Questions?