



# Maximum CTF

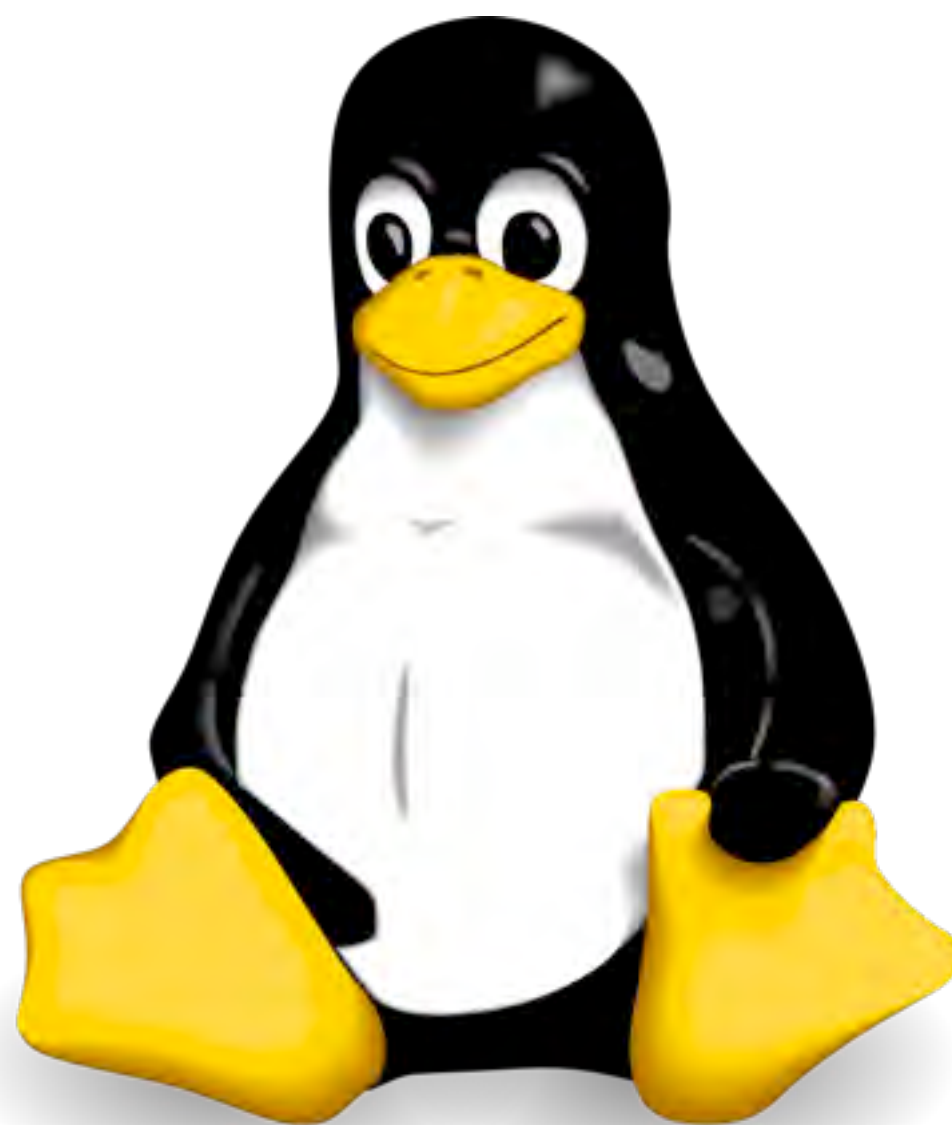
Get the most from capture the flag

place holder for warm-up quiz

**psifertex**



TM



over







I'm old fashioned. \_\_ I use two spaces.





**#! /bin/bash**



**PEPSI**







our team captain's  
handle is "@tlas"

# 1@stplace

the team name can be  
read "last place" or  
"first place",  
ambiguously

we wanted to cover  
our bases

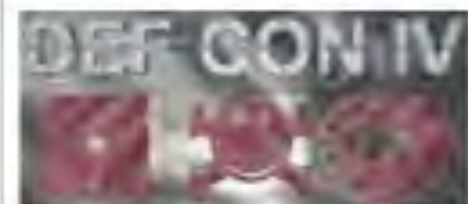
if the replacement of  
letters with numbers and  
symbols doesn't make  
sense to you, it's probably  
best to just leave the  
room now





## DEFCON 4

1996



CTF 1

Organizers: Goons

Winners: ??

## DEFCON 5

1997



CTF 2

Organizers: Goons

Winners: Team SNI

## DEFCON 6

1998



CTF 3

Organizers: Goons

Winners: Mad Sweedish Hackers

## DEFCON 7

1999



CTF 4

Organizers: Goons

Winners: Ghetto Hackers

## DEFCON 8

2000



CTF 5

Organizers: Goons

Winners: Ghetto Hackers

Subterranean Security Group

1997

1998

1999

2000

2001

2002

DEFCON

DEFCON 9

2001



CTF 6\*

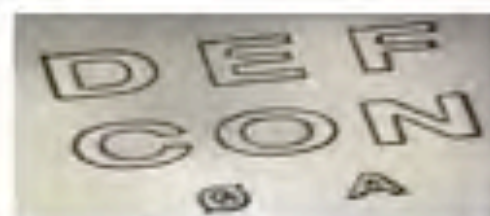
Organizers: Goons

Winners: Ghetto Hackers

Digital Revelation

DEFCON 10

2002



CTF 7

Organizers: Ghetto Hackers

Winners: Digital Revelation

DEFCON 11

2003



CTF 8

Organizers: Ghetto Hackers

Winners: Digital Revelation

DEFCON 12

2004



CTF 9

Organizers: Ghetto Hackers

Winners: Sk3wl of R00t

2002

2003

2004

2005

2006

DEFCON

## DEFCON 14

2006



CTF 11

Organizers: Kenshoto

Winners: 1@stplace

## DEFCON 15

2007



CTF 12

Organizers: Kenshoto

Winners: 1@stplace

## DEFCON 13

2005



CTF 10

Organizers: Kenshoto

Winners: Shellphish

## DEFCON 16

2008



CTF 13

Organizers: Kenshoto

Winners: sk3wl of r00t

DEFCON

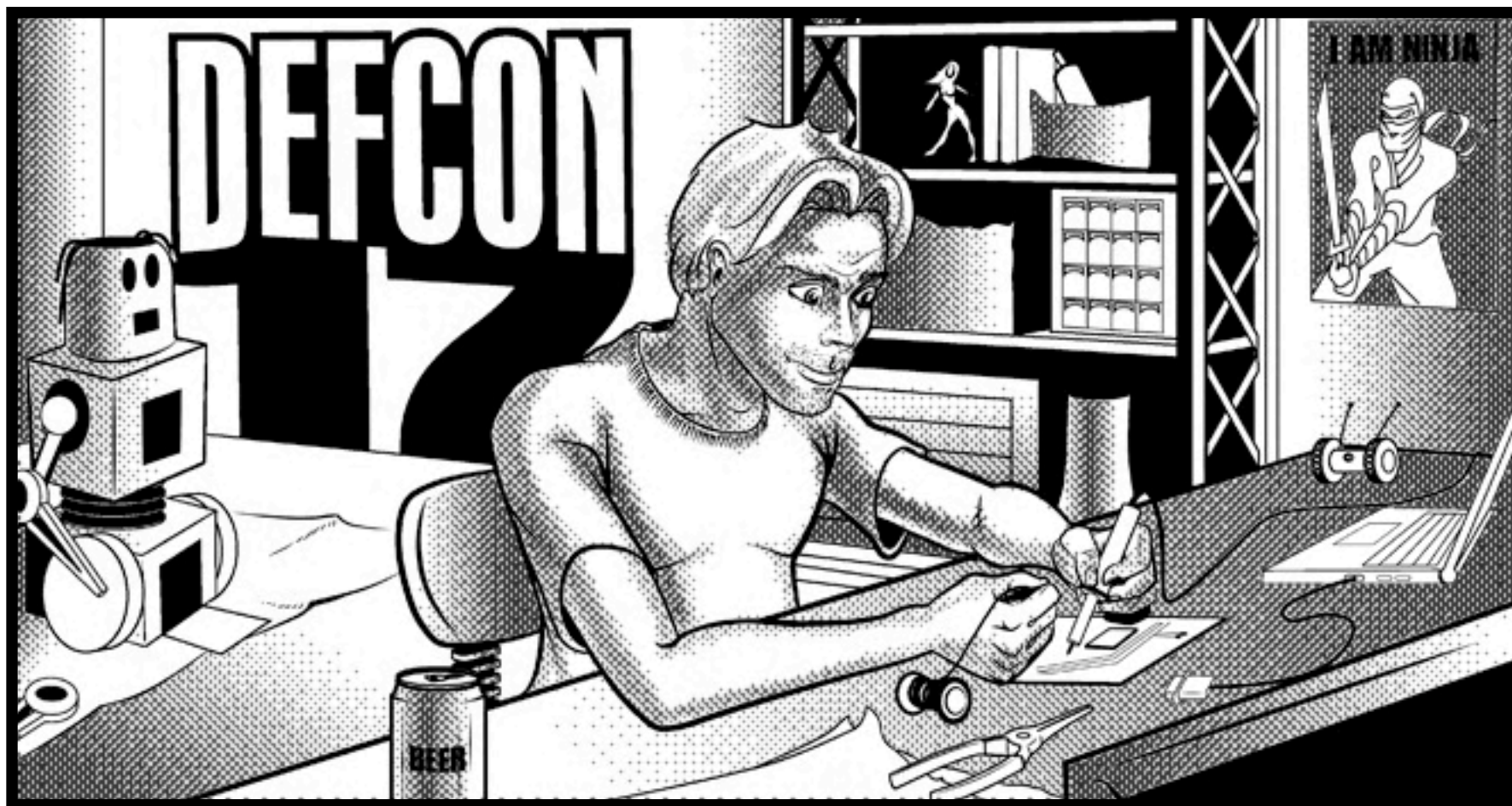
2006

2007

2008

2009





- Number of people in your organization (that will actively be participating in creating/planning/executing CTF): 20
- Experience team members have had in planning events (This could be a bake sale with 500 people, or a DoD briefings for 20 people, something that indicates some planning experience):

Coordination for training events for 40+ individuals.  
Coordination semi-annual meeting of 20 corporation CEO's.  
Coordination for activities of small groups of hackers to participating in ctf.  
Experience with leadership of diverse hacking groups, attack forces and defensive forces  
Experience with add-hoc generation of task teams to meet game or crisis needs  
Access to a wide array of people which can be leveraged at and before con to problem solving and challenge meeting associated with the new CTF game.

- Technical ability of team.This would include a general list of people's abilities \* networking, hardware, etc and support the idea you can pull this off:

Several professional developers of networks wireless  
Two sometimes professional engineers of networks  
Several professional security researchers/forensics analysts  
One amateur sheep luuuuuva  
Other really smart people

- Physical resources (if any) that you will be bringing to help run CTF such as a disco ball, robots or enigma machines.This to help us plan to accommodate it with the hotel if you require extra power or special fire marshal approval for your Cray 1 cooling towers.:

~10 servers  
~3 routers  
~1.7 chemistry sets (GHB and Vitamin K synthesis for sheep luuuuuva)

- What experience have your team members had in playing CTF in the past.This is not a requirement, but shows real-world knowledge of the game as it has been played in the past.:

Occasional participants in defcon CTFs over the many years. Some participation in other (not-defcon) CTF type exercises

- Explain you vision for CTF -Explain, in a general manner, your vision of your CTF.

We view the CTF as the venue for real hackers to demonstrate/practice their skills at breaking into computers by remote.While we recognize that there are many skills to hacking such as social engineering, lock picking and more we think that some of these skills are already tested in other contests running at Defcon.While other contests may be combined in some capacity, they will not be a core focus of our flavour of CTF.

- Explain how you hope the attendees will experience it. For example, they sign up on-line, get a secret package in the mail, start blindfolded with an unusual laptop? Are their certain crises points you will introduce during the game to confuse or add to the pressure?

Attendees wishing to participate in the team portion of CTF will be required to register in advance in order to participate in the team qualifying round expected to take place approximately 2 months prior to Defcon.We anticipate accepting nine teams (plus returning champion) into the team competition to take place over the three days of Defcon.An individual competition organized similar to the qualifying round may be also offered during the con.Such an individual round could be entered by anyone choosing to register at Defcon.The individual competition would be accessed on the conference wireless with a scoreboard displaying the current individual leader board in the CTF arena.Teams may be required to overcome some initial challenge such as picking a lock to obtain access to their network feed into the game.A mob style element may be introduced by providing a game connection to the chill out area/amateur ctf tables.The mob would effectively be a non-scoring team capable of attacking all of the other teams and introducing general mayhem (other than DoS attacks which will not be acceptable.Too great bandwidth consumption by the mob will result in disconnection.We are not interested in seeing a bunch of nmap/nessus scans against the game network.

- Provide three reasons your group should host CTF.

- 1.We have enjoyed playing and observing CTF over the years and would like to give something back to the community.
- 2.We feel that the perspective we have gained as players will offer us the best opportunity to make a game that agrees to the spirit of CTF,incorporating the best of what we have experienced, with fresh ideas gained from an detailed knowledge of the game that only players could appreciate.
- 3.We have no commercial interest in the game and are doing this not for personal gain.
- 4.We don't really want to play a game not hosted by Kenshoto so we thought we might try to running the thing ourselves.

- How do players or teams qualify (if there are qualifications)?

As like the past, the qualification round will consist of a point oriented competition with wide variety of topics and exercising a wide variety of skills.The challenges will take the form of a Jeopardy style board.The nine top scoring teams will be offered spots to CTF.Ties will be broken by the first team to reach the score.Qualifying teams will have two weeks to confirm to CTF.After two weeks, any teams that have not confirmed their intention to participate at Defcon will lose their spot in the game and the next available team as determined by qualifying score will be offered a chance to participate in CTF.

- Is it multi player or single-player, or a combination?

We intend to maintain the team oriented aspect of the game while introducing an individual part to the game as a way to get more interest from Defcon attendees.A prize may be set aside for the winner of the individual competition.

- What innovations or new ideas are you bringing to CTF?

We intend to bring a new scoring system to the game with different visualization for the game activities.Additionally, there may be side challenges designed to mix things up a bit and test the diversity of each teams skills.Unlike recent years, we hope to make teams to defend multiple servers running different operating systems.In order to attract more attendees to the game we hope to make several opportunities for attendees to drop in and play in some way.

- How long will the contest take, will it be 24x7, 8 hour shifts, etc?

26 total hours. 10 hours Friday, 10 hours Saturday, and 6 hours Sunday.

- What technical work is required to execute your plan.This includes setting up environments beforehand, pre-qualification work if any, writing a scoring system, etc.?

Qualifications and the actual CTF competition will each require setup.

Quals will require making questions/challenges and answers as well as communications channels, web pages and score viewing methods.

CTF will require the setup of multiple environments including scoring, display and target services.

- Give an outline of the rules that will be presented to the participants:

Generally we're finding rules to be superficial, as such we don't intend to enforce many.

Rough outline:  
No DoS.Windows is better!  
No nmap/nessus scanning (they won't get you anything anyway)  
Table limit of 8 enforced  
No physical coercion (sheep excepted).

Quals:  
We will conduct the qualifications in a similar manner as the previous Kenshoto CTF organizers to choose skilled teams for the purpose of supplying the eventual CTF competition with the most highly skilled players.The quals will include real time chat and multiple challenges with skill requirements similar to the skills required in CTF.

CTF:  
All competing teams will be supplied with the same challenges at the same time or have equal opportunity to gain points or make progress.Simple game rules will be supplied in printed or digital form to ease potential language barrier issues.

- Why do you want to do this?

See section "Provide three reasons your group should host CTF"

- Explain what you believe is the best way to gauge a hacker's abilities, and how your vision of the contest could do this?

Cross between depth of skill and breadth of skill.  
Team flexibility  
Team diversity  
Parallels with either business or national capability  
Ability to pick up sheep

CTF has traditionally been oriented around computer network attack and defense.While we recognize that there are many other areas of interest within the hacking community, we feel that many of these areas are well tested by other Defcon contests, and we would like to continue the tradition of Defcon hosting the premiere CTF event.The primary focus of the game will be software exploiting. Some side challenges may use other areas of hacking such as lock picking. Our type of the game would present approximately 15 network based services for each team to attack.Vulnerabilities made into the services would range in difficulty from simple stack overflows to more complex heap overflows and cryptographic challenges.

- Tell us anything else that you think may be important or that we might consider in choosing your group to host CTF.

You know us and our intentions/culture Our priorities lie with the reputation and progress of the game and the conference rather than in the furtherance of commercial interests.

Te amo en la noche,  
Te amo en la mañana.  
Me largo para que cuando fuera,  
Oh ovejas de hacer lo de banana.



VedaGodz Score: 5000

Logout

Pursuits  
Trivial

Crypto  
Badness

Packet  
Madness

Binary  
L33tness

Pwtent  
Pwnables

Forensics

100

100

100

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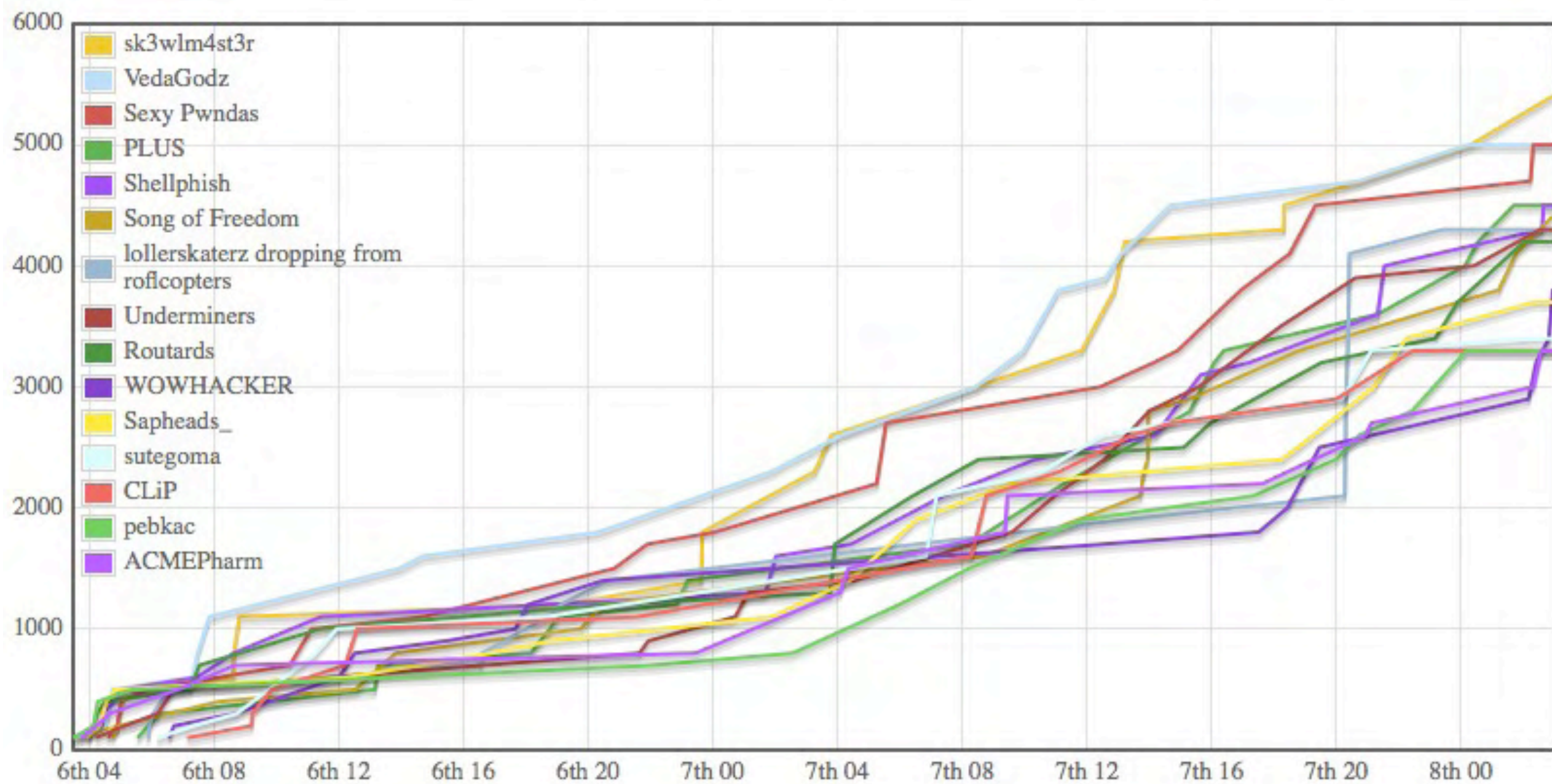
Howie doit?

• [file](#)

I pwn3d U

Leaders

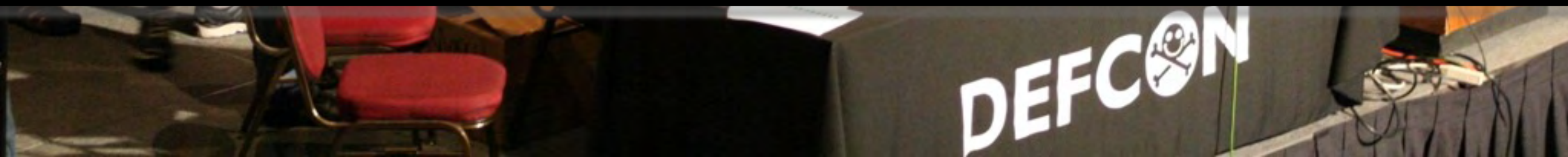
1. sk3wlm4st3r (5400)
2. VedaGodz (5000)
3. Sexy Pwndas (5000)
4. PLUS (4500)
5. Shellphish (4500)
6. Song of Freedom (4400)
7. lollerskaterz dropping from roflcopters (4400)
8. Underminers (4300)
9. Routards (4200)
10. WOWHACKER (3800)
11. Sapheads\_ (3700)
12. sutegoma (3400)
13. CLiP (3300)
14. pebkac (3300)
15. ACMEPharm (3300)







sk3wl of r00t







**team awesome**

**sexy  
pandas**







## About Us

- 동아리 이름의 의미

PLUS는 Postech Laboratory for Unix Security 의 약자로, UNIX System 보안을 연구하는 포항공대연구회라는 의미입니다. 사실 연구대상은 Unix System 뿐 아니라 Windows, Linux 등 일반적인 Network Client/Server를 포괄합니다. 동아리 설립 당시에는 Network Client/Server의 대부분이 UNIX였기 때문에 이런 이름이 붙여졌습니다.

PLUS가 동아리로 변경된 이후 회원은 매년 2학기 경쟁을 통해 4~5명 정도가 선발됩니다. 선발과정에서는 해킹/보안에 관한 열정과 스스로 공부할 수 있는 능력을 판단하는 것을 최우선으로 합니다. 이렇게 뽑힌 신입회원들은 1년여간의 준회원과정을 거쳐 기본기를 탄탄하게 갖춘 정회원으로 승급합니다.

- 동아리의 설립년도와 취지

1992년 9월 교내 네트워크의 관리를 위해 탄생했습니다. 이 시절의 포항공대는 네트워크자원에서 선구자적인 위치를 띄고 있었으며, 이런 환경에서 PLUS는 UNIX와 네트워크 보안을 연구하는 모임이었습니다. 2000년도 PLUS는 좀더 자율적인 연구환경을 조성하기 위해 기존의 동아리 형태를 지 이어져 오고 있습니다.

- 동아리 회원들의 활동 내용

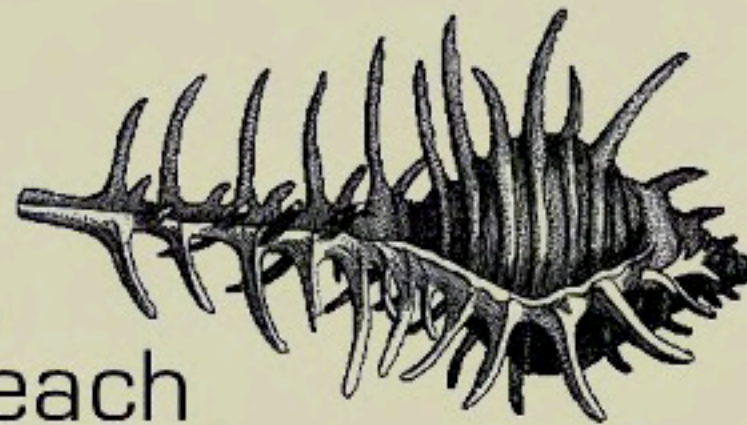
- 국내 회사 모의해킹(보안대회)
- 보안 관련 저술 Security plus for unix
- 해킹 기술 서적 저술 Advanced Security plus for unix
- 한국 정보보호진흥원 프로젝트
- 삼성SDS IT 우수동아리 사업에 선정
- Local/Remote Exploit 분석 및 제작

# PLUS@postech



# ShellPhish

HEX on the beach



## Menu

- [Home](#)
- [Code](#)

## People



[sicko](#)



[ViRus](#)



[weaver](#)



[beetal](#)



[balzaroth](#)



[zanardi](#)



[nullptr](#)



[irish](#)

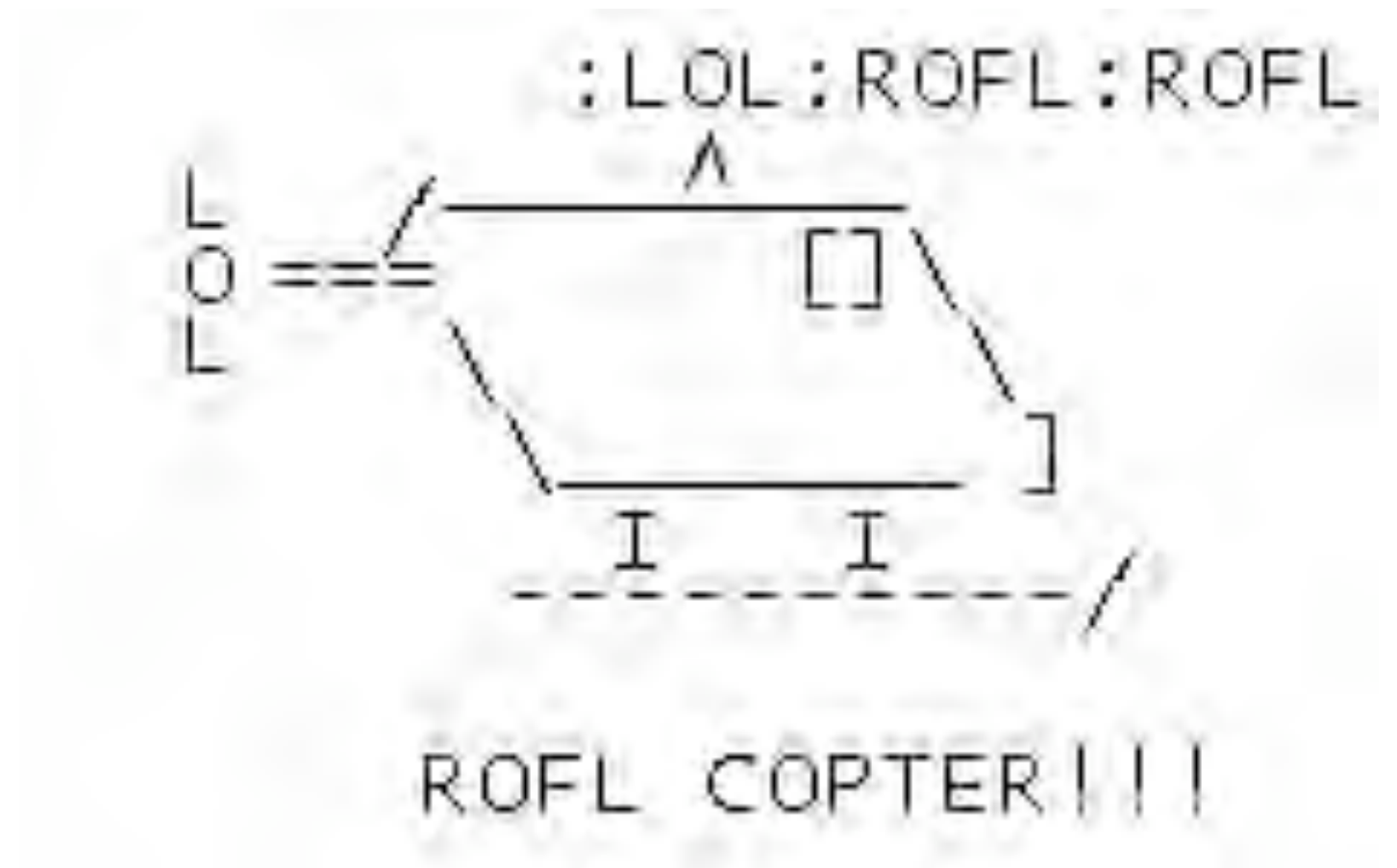


[void](#)

song of  
freedom

송오브프리덤

rollerskaterz  
dropping from  
roflcopters



**routards**





**WOWHACKER**

**sapheads**



mechanics

18812-  
8-16-56



VedaGodz Score: 5000

Logout

Pursuits  
Trivial

Crypto  
Badness

Packet  
Madness

Binary  
L33tness

Pwtent  
Pwnables

Forensics

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Howie doit?

• [file](#)

I pwn3d U

Leaders

1. sk3wlm4st3r (5400)
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11. Sapheads\_ (3700)
12. sutegoma (3400)
13. CLiP (3300)
14. pebkac (3300)
15. ACMEPharm (3300)





flags





# Roles

“Coordinator”

“Nose”

“Reverser”

“Exploiter”

“Sysadmin”

“Defender”

“Scripter”







**teamwork**

# Team Size

**Skillz**



[illegible]



IDA - C:\Temp\var.exe

File Edit Jump Search View Debugger Options Windows Help

Local Win32 debugger

IDA View-A Pseudocode-A Debugger

IDA View-EIP Functions window

```
.text:004010E0 public start
.text:004010E0 start proc near
.text:004010E0 jmp short loc_4010F2
.text:004010E0 ;
.text:004010E2 dw 6266h
.text:004010E4 dd 2B2B433Ah, 4B4F4F48h
.text:004010E6 db 90h
.text:004010E8 db 0E9h
.text:004010EA dd offset __CPPdebugHook
.text:004010F2 ;
.text:004010F2 ; CODE XREF: start↑j
.text:004010F2 mov eax, IIsIndex
.text:004010F4 shl eax, 2
.text:004010F6 mov dword_40E0BF, eax
.text:004010F8 push edx
.text:004010FA push 0 ; lpModuleName
.text:004010FC call GetModuleHandleA
.text:004010FE mov edx, eax
.text:00401100 call nullsub_2
.text:00401102 pop edx
.text:00401104 call nullsub_1
.text:00401106 call nullsub_3
```

000006F2 004010F2: start:loc\_4010F2

Hex View-1

```
00401142 E0 40 00 C3 A1 93 E0 40 00 C3 60 00 00 50 00 0C 00 .+i000.++.P!+
00401152 53 68 AD 0B 00 00 C3 B9 A4 00 00 00 0B C9 74 4D Sh;...+;ñ....+tN
00401162 83 3D 8B E0 40 00 00 73 0A B8 FE 00 00 00 E8 D7 â=i00...s.0!...bÎ
00401172 FF FF FF B9 A4 00 00 00 51 6A 0B E8 84 C1 00 00 !ñ...Qj.bâ-..
00401182 50 E8 AE C1 00 00 0B C0 75 0A B8 FD 00 00 00 E8 Pp<-...+u.0²...p
00401192 86 FF FF FF 50 50 FF 35 8B E0 40 00 E8 19 A2 00 â PP 5Y00.b.ó.
004011A2 00 FF 35 8B E0 40 00 E8 22 A2 00 00 5F C3 B9 A4 . 5Y00.b"ó...+;ñ
004011B2 00 00 00 0B C9 74 19 E8 D6 A1 00 00 A3 8B E0 40 ....+t.bîf...õi00
```

00000770 00401170: .text:00401170

Output window

```
41E0B4: using guessed type int dword_41E0B4;
41E0B8: using guessed type int dword_41E0B8;
41E0BC: using guessed type char byte_41E0BC;
41E124: using guessed type int dword_41E124;
406218: using guessed type _DWORD __cdecl _lock_stream(_DWORD);
4062E0: using guessed type _DWORD __cdecl _unlock_stream(_DWORD);
406428: using guessed type _DWORD __cdecl _vprinter(_DWORD, _DWORD, _DWORD, _DWORD, char, _DWORD);
406218: using guessed type _DWORD __cdecl _lock_stream(_DWORD);
```

DC

AU: idle Down Disk: 387GB

General registers

EAX	00000000	CF
EBX	7FFDB000	PF
ECX	0012FFB0	AF
EDX	7C91E514	ZF
ESI	100FAC68	SF
EDI	00000018	TF
EBP	0012FFF0	IF
ESP	0012FFC4	OF
EIP	004010FA	OF
EFL	00000246	

Modules

Path	Base	Size
C:\Temp\var.exe	00400000	192512
C:\WINDOWS\system32\lpk.dll	62DC0000	36864

Threads

Decimal	Hex	State
480	1E0	Ready

Stack view

0012FFC0	7C917077	debug005:7FFDB000
0012FFC8	00000018	
0012FFCC	100FAC68	
0012FFD0	7FFDB000	debug005:7FFDB000
0012FFD4	8054B6ED	
0012FFD8	0012FFC8	Stack[000001E0]:0012FFC8
0012FFDC	8876A638	
0012FFE0	FFFFFFFF	

UNKNOWN 0012FFC4: Stack[000001E0]:0012FFC4

# Lightning Question Placeholder





dirty tricks



A close-up photograph of a bicycle chain, showing several brass links. The links are arranged in a repeating pattern, with some links showing the text "JAPAN", "DID520", and "ERV2". The chain is set against a dark background.

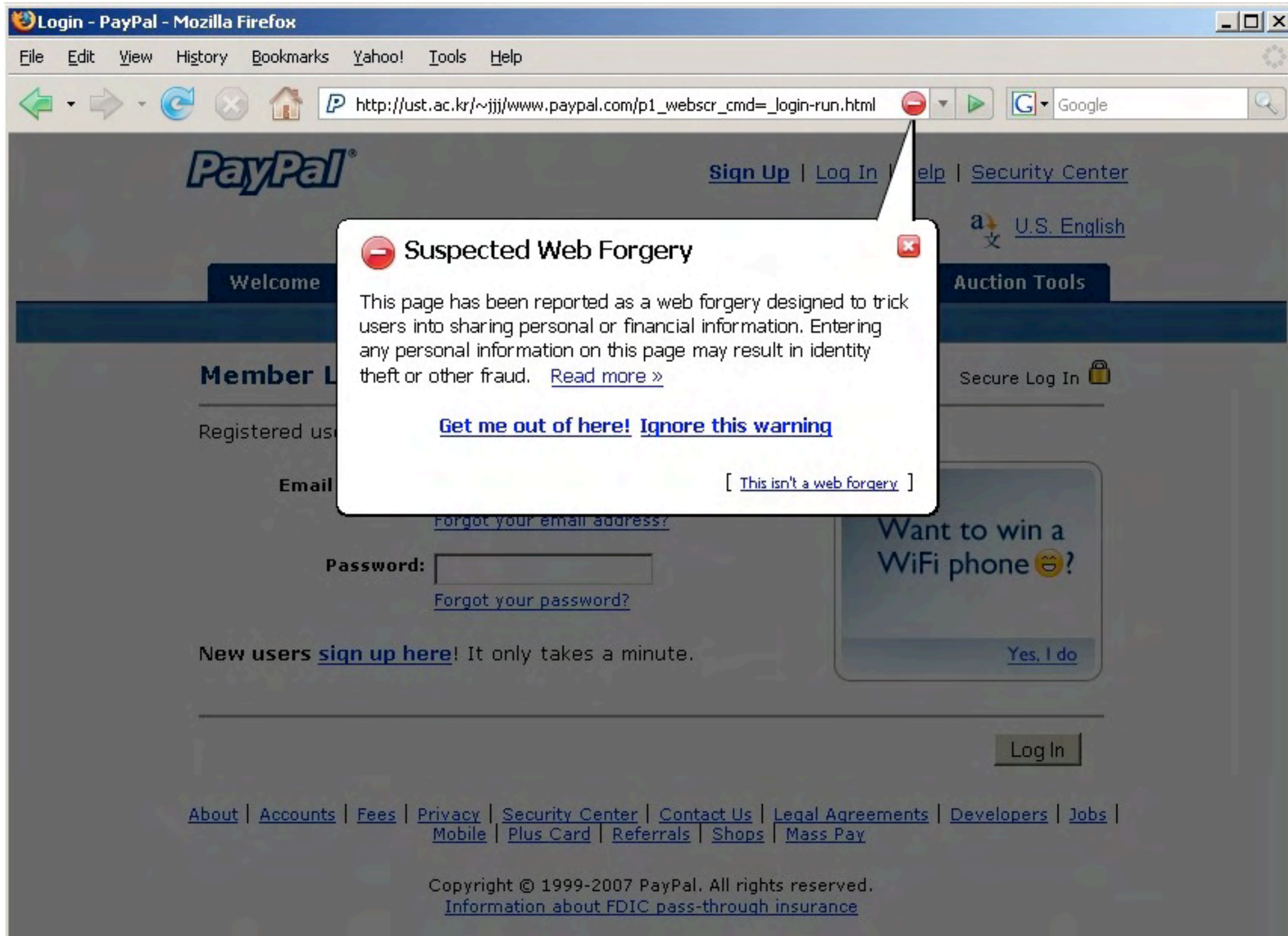
**only as strong as...**



backdoor











00 00 00







# Hands-on



# references



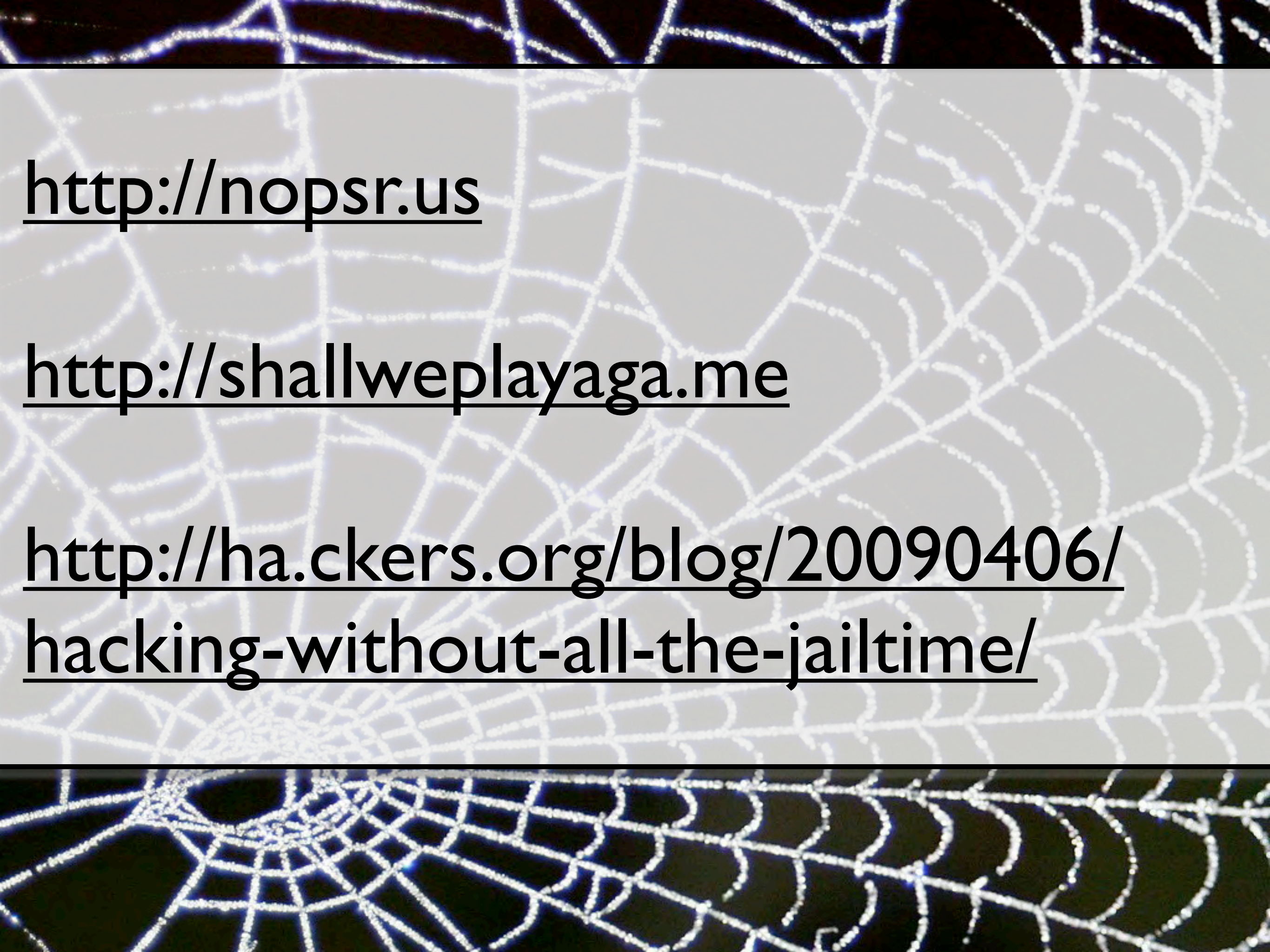
tools and techniques





**scriptalicious**

gnizæver reversing



<http://nopsr.us>

<http://shallweplayaga.me>

[http://ha.ckers.org/blog/20090406/  
hacking-without-all-the-jailtime/](http://ha.ckers.org/blog/20090406/hacking-without-all-the-jailtime/)





# The Fine Print

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backdoor.txt <http://www.flickr.com/photos/daquellamanera/414574355/>

lastplace.txt photo used with permission from Dave Bullock, eecue.com

library.txt <http://www.flickr.com/photos/jasonvance/1194678729/>

many-flags.txt <http://www.flickr.com/photos/nyllows/3633429935/>

mechanics.txt <http://www.flickr.com/photos/seattlemunicipalarchives/3576509006/>

play-house-free-candy.txt <http://www.flickr.com/photos/endora57/49474343/>

rolls.txt <http://www.flickr.com/photos/bcmom/66951454/>

school-of-root.txt <http://www.flickr.com/photos/leduardo/2755245443/>

toilet-paper.txt <http://www.flickr.com/photos/mukluk/249464276/>

toy-soldiers-team.txt <http://www.flickr.com/photos/janramroth/1302905330/>

two-toy-soldiers.txt <http://www.flickr.com/photos/janramroth/2264184078/>

web.txt <http://www.flickr.com/photos/foxypar4/2124673642/>

wrench.txt <http://www.flickr.com/photos/kylemay/2078979917/>