Fosdem, Beer, Curry and Pwnage

and why Metasploit is written in Ruby... </troll>

Simon Lewis and Rob Shields

FOSDEM, 2007

First Things First

- Beer is a *MAJOR feature of FOSDEM*
- *The conference is held at ULB Campus every year*
- *http://fosdem.org (slides, videos and photos)*

The beer event

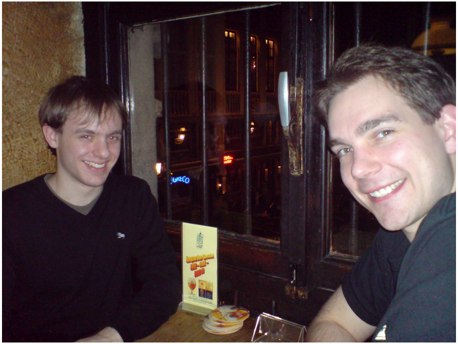


Figure: David and Rich at the beer event

The beer event #2

Figure: Simon tries to pwn an American girl in a pub

M$ - We are in your customer base spoofing your runtime

- Sun - *Annouced they are Patrons of the FSF, Open Sourcing of Java*
- *Novell* - Talked about Mono and tools for porting Windows applications

Other Interesting talks

- Andrew Morton - *The state of the Linux Kernel, user types*
- *Debian Package Management* - How to be more clever
- X.org - *Why Beryl/Compiz is very hard*

One Laptop Per Child

- Jim Gettys gets mobbed at the end of his talk

Andrew Morton - The state of the Linux Kernel

- Server - infiniband, network protocols, SATA, SCSI, virtualisation, containerisation
- Desktop - hot pluggability (devices, CPU, nodes, memory), power man., DRI drivers, input, sound, 1394
- Embedded - DVB/VFL, dynamic ticks (needed by OLPC), footprint reduction, NoMMU device support
- General - instrumentation (per process I/0 and memory stats), kevent, utrace (rewrite of ptrace), async syscalls, fault injection framework, kdbg possible

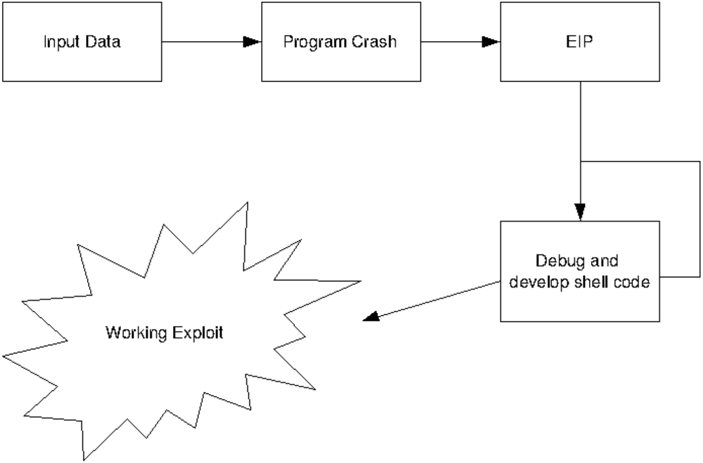
Terminology

- Exploit: *A weakness in a program that allows an attacker to gain control of the process (EIP)*
- *Payload:* This is what we want to be executed

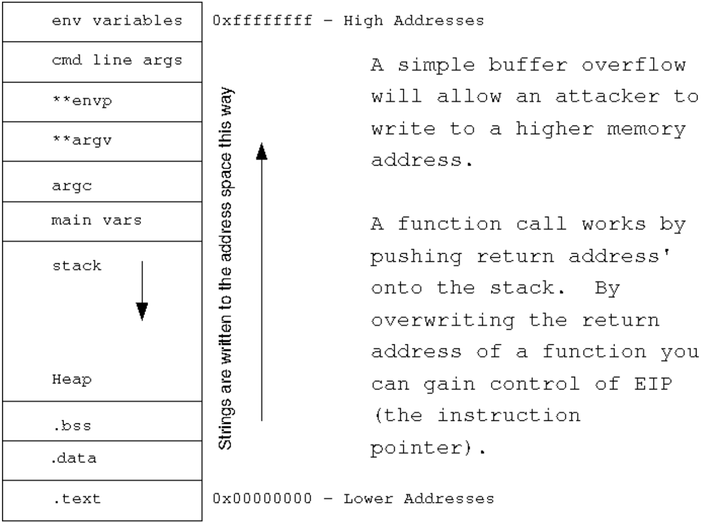
We like to pwn it pwn it... we like to... pwn it

- A framework to seperate exploits from payloads
- Benifits from the egos of FLOSS Hackers
- After a certain amount of time exploits are released.
- Point, Click and pwn

Workflow


Input Data
Program Crash
EIP
Debug and develop shell code
Working Exploit

Getting dirty with memory



env variables

cmd line args

**envp

**argv

argc

main vars

stack

Heap

.bss

.data

.text

0xffffffff - High Addresses

0x00000000 - Lower Addresses

A simple buffer overflow will allow an attacker to write to a higher memory address.

A function call works by pushing return address' onto the stack. By overwriting the return address of a function you can gain control of EIP (the instruction pointer).

Demonstration

Summary

- Going to conferences is fun and exciting # beer++
- Metasploit is an exploitation framework now written in Ruby # OO++
- Clarity over speed where appropriate
- Patch, patch, PATCH!

Resources List

Diagrams were shamelessly borrowed and adapted from the following resources:

Various.
The Shell Coders Handbook - Discovering and Exploiting Security Holes
ISBN 0-7645-4468-3

Saumil Shah.
More on Metasploit plugins - From vulnerability to exploit
EUSecWest - London 2007

http://www.metasploit.com
The main website for Metasploit