metasploit

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who am i ?

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metasploit PROJECT

Core developer and project lead

BreakingPoint Systems

Director of Security Research

why listen ?

- A great tool you can use today
- The BSD-licensed Rex library
- Latest in exploit technology

metasploit framework

- An exploit development platform
  - Security researchers
  - Penetration testers
  - Security vendors
  - Script kiddies

metasploit history

- Version 1.0 (2003-2004)
  - Perl, 15 exploits, curses UI

- Version 2.7 (2003-2006)
  - Perl, 150+ exploits, 3 Uis

- Version 3.0 (2007+)

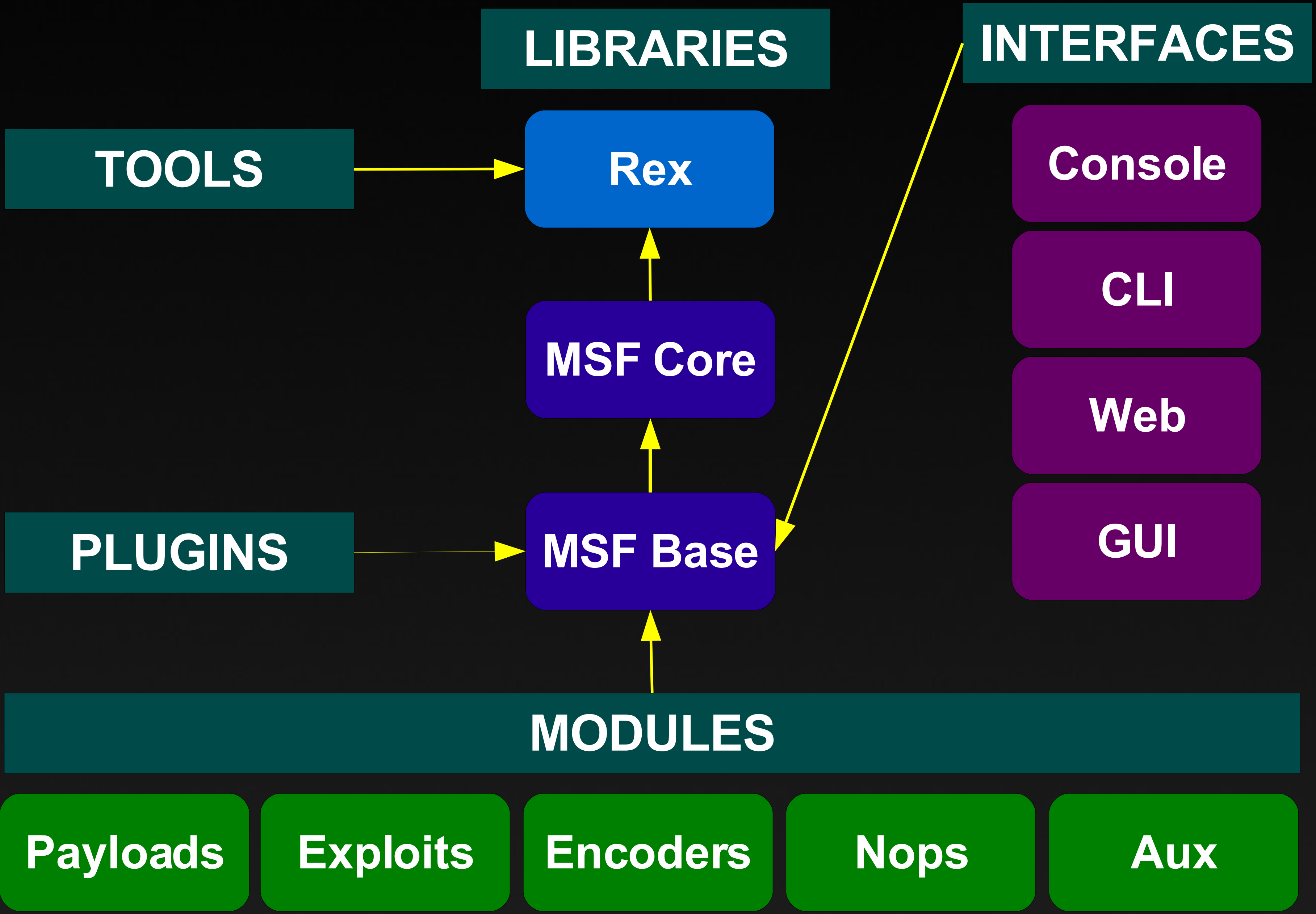
metasploit 3.0

- 100,000 lines of Ruby
- 53,000 lines of C/C++
- 8000 lines of ASM
- 350 unique modules
- 2 years to develop

why ruby ?

- Clean, easy, and fun
- Awesome OO model
- Green threading
- Platform support

architecture



the Rex library

- Text manipulation
- CPU instructions
- Fancy sockets
- File formats
- Protocols
  - SMB, DCERPC, SUNRPC, HTTP

metasploit modules

- Simple Ruby classes
- Dynamically loaded
- Rich meta-information
- Expose type-specific methods

metasploit exploits

- Modules inherit Msf::Exploit
- Heavy use of Ruby mixins
  - TCP, UDP, SMB, HTTP
  - Active, Passive, Brute force
  - WiFi, Pcap, Bluetooth

exploit example

```
connect
print_status("Trying target #{target.name}...")
buf = Rex::Text.rand_text_english(1816)
seh = generate_seh_payload(target.ret)
buf[1008, seh.length] = seh
send_cmd( ['USER', buf] , false)
handler
disconnect
```

metasploit payloads

- Modules inherit Msf::Payload
- Singles, Stagers, Stages
  - Remote command shells
  - In-memory DLL injection
  - “CMD” payload types
  - “PHP” payload types

windows payloads

- Standardized calling convention
- Tiny paylods via ordinal resolution
- DLL injection payloads
  - In-memory VNC server
  - PassiveX payload stager
  - The Meterpreter...

the meterpreter

- Dynamically extensible payload
- Custom network protocol
- The basic “stdapi” extension
  - ps, kill, ls, rm, mkdir, rmdir
  - upload, download, execute
  - migrate, interact, load, scripting

metasploit auxiliaries

- Modules inherit Msf::Auxiliary
- Anything not an “exploit”
  - Discovery and fingerprinting
  - Network protocol “fuzzers”
  - Denial of service methods
  - Administrative access exploits

user interfaces

- msfconsole
- msfcli
- msfweb
- msfgui

events

- Registered subscriber model
- Trigger on common actions
  - Exploit launched
  - Session creation
  - Job creation
  - User command

plugins

- Hook events, extend objects
- Examples
  - Socket filtering and logging
  - Database support
  - Exploit automation
  - Telnet console

summary

- An advanced exploit toolkit
- Simple to use and extend
- 3.0 stable release is SOON

http://framework.metasploit.com/

demos !