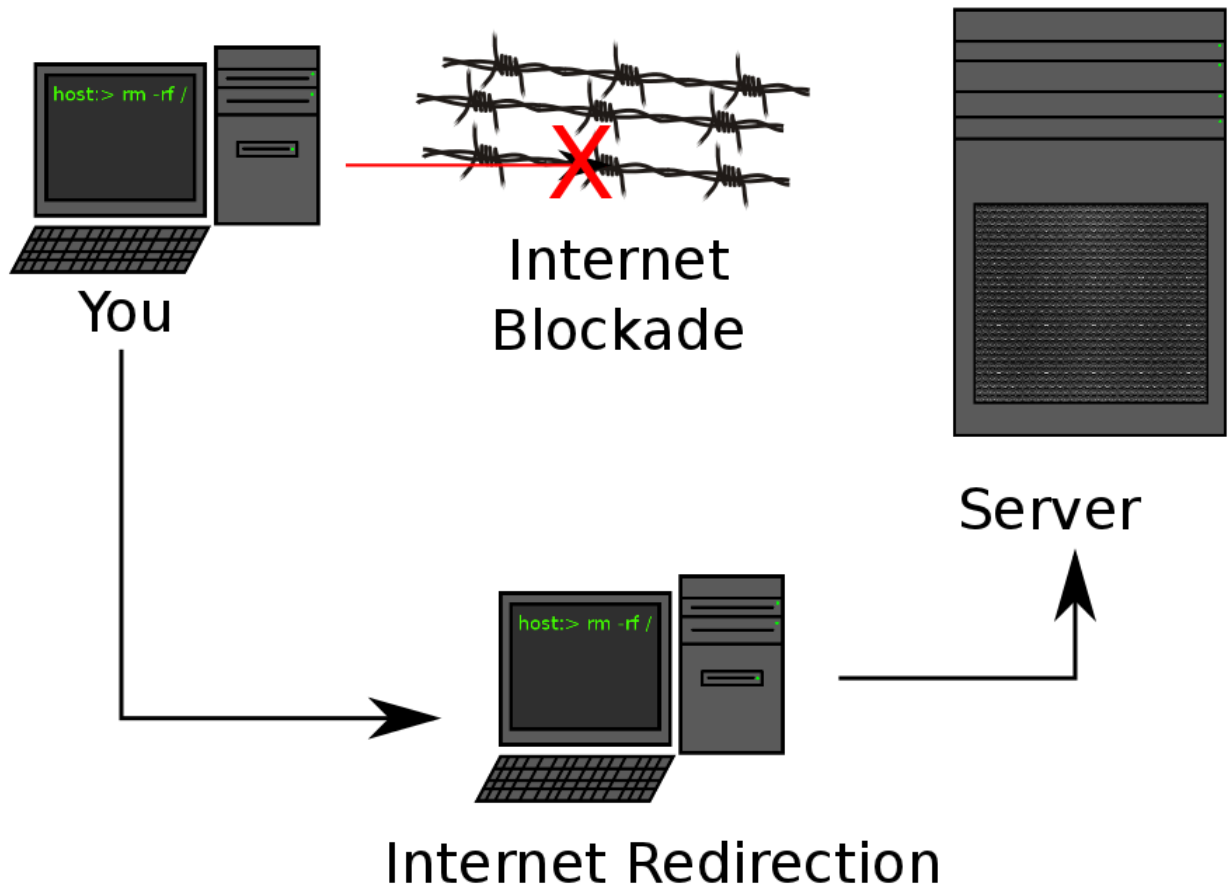


SSH Tunnels, Proxies, and Internet Redirection

Michael Starch

Thanks to:
James McDuffie
Lan Dang

Whereforth Art Thou?



What Do I *Do*?

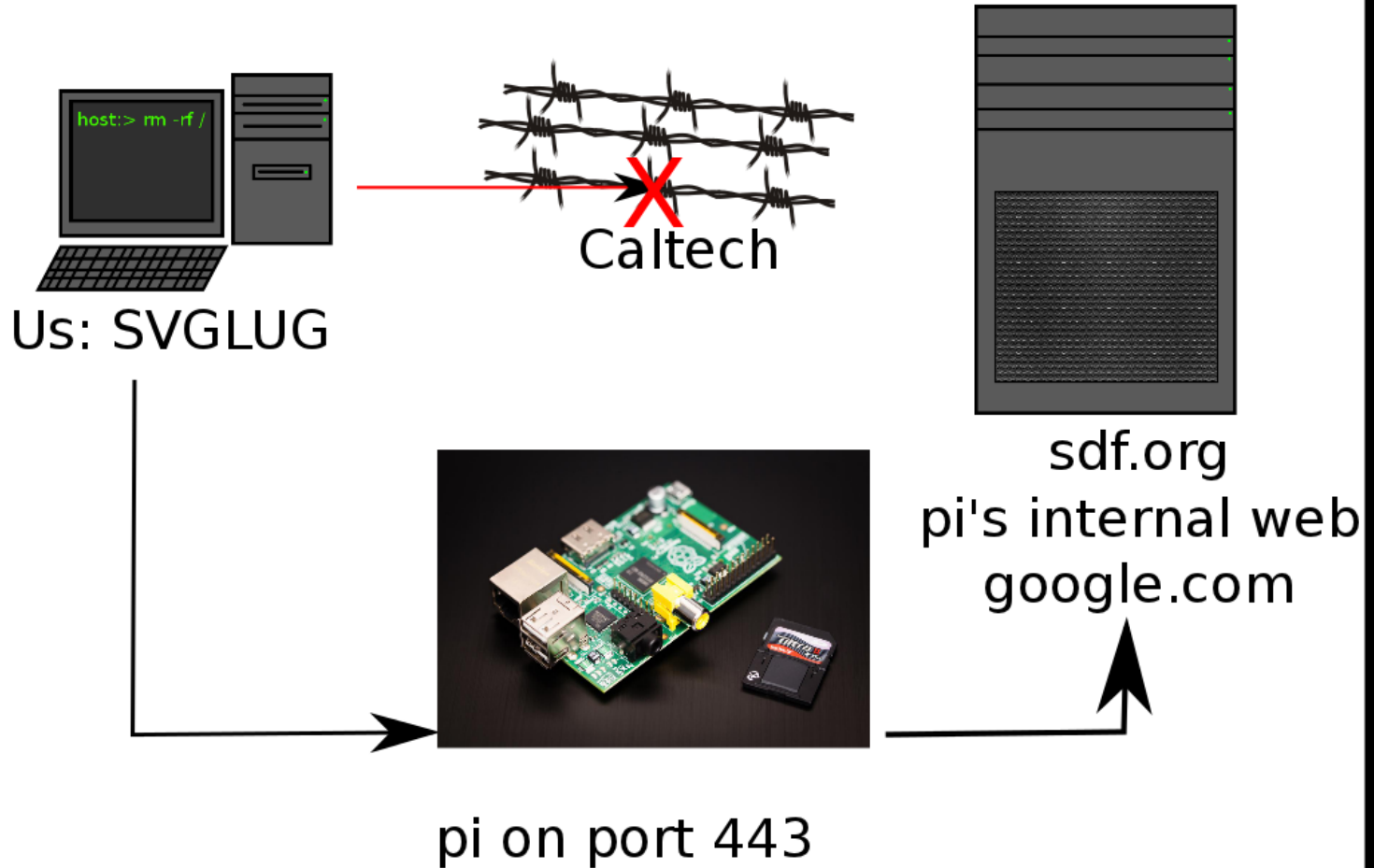
Common Types of Internet Redirection:

- *SSH Tunnels
- *SOCKS v5 Proxy
- *HTTP Proxies

Other forms of Internet Redirection

- *Hot-Spot Phone
- *Reverse Proxy
- *The Onion Network

Demonstration Setup



SSH Tunnels

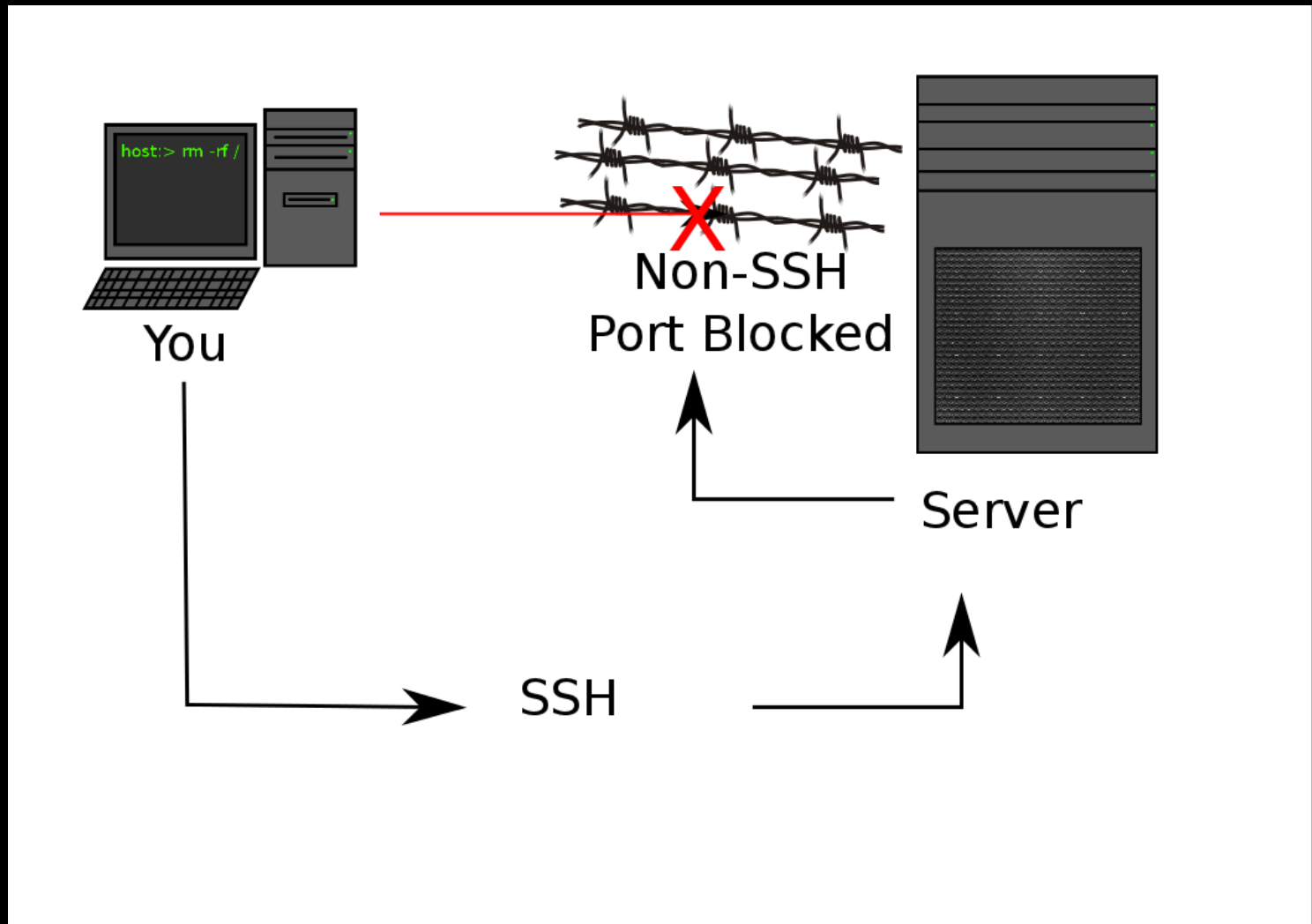
Basics:

- *Use SSH to transport Internet Data
- *Use local port as a remote port
- *Can reach in/out of firewall

Advanced:

- *Internet Data inherits SSH's encryption

SSH Tunnels: A Pictorial Approach



SSH Tunnels: A Demo

Tunnel SSH through SSH

```
ssh -p 443 -f sshpi@<IP> -L 3000:sdf.org:22 -N  
ssh -p 3000 lestarke@127.0.0.1
```

SOCKS v5 Proxy

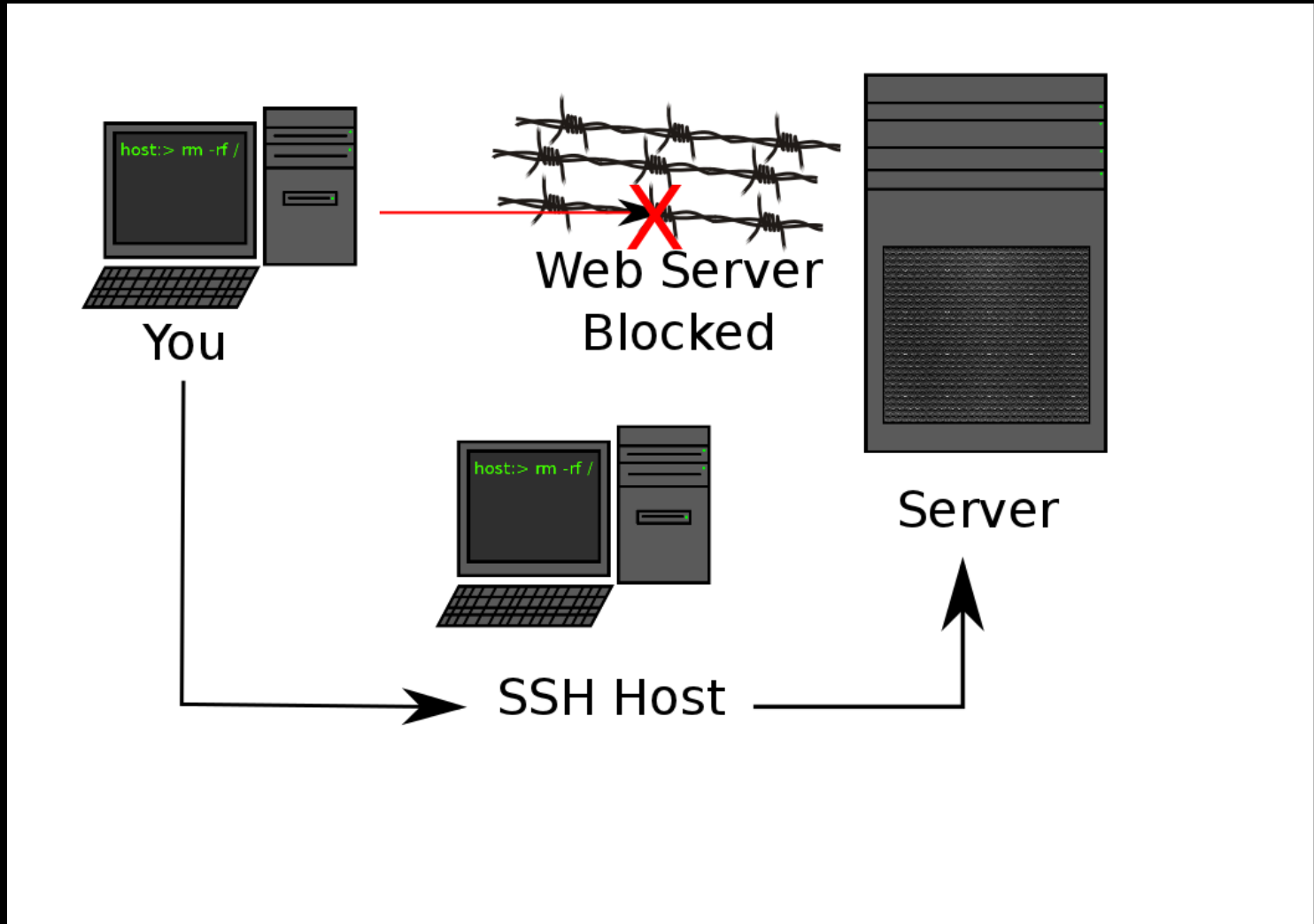
Basics:

- *Use SSH to transport Internet Data
- *Client connects to local ssh socket
- *SSH Host connects to website
- *Can reach in/out of firewall

Advanced:

- *Internet Data inherits SSH's encryption

SOCKS v5: In The Pictures



SOCKS v5: Demonstration

Use SOCKS Proxy To Access Restricted Website on the PI

```
ssh -D localhost:2300 -p 443 sshpi@<IP> -f -N
```

HTTP Proxy

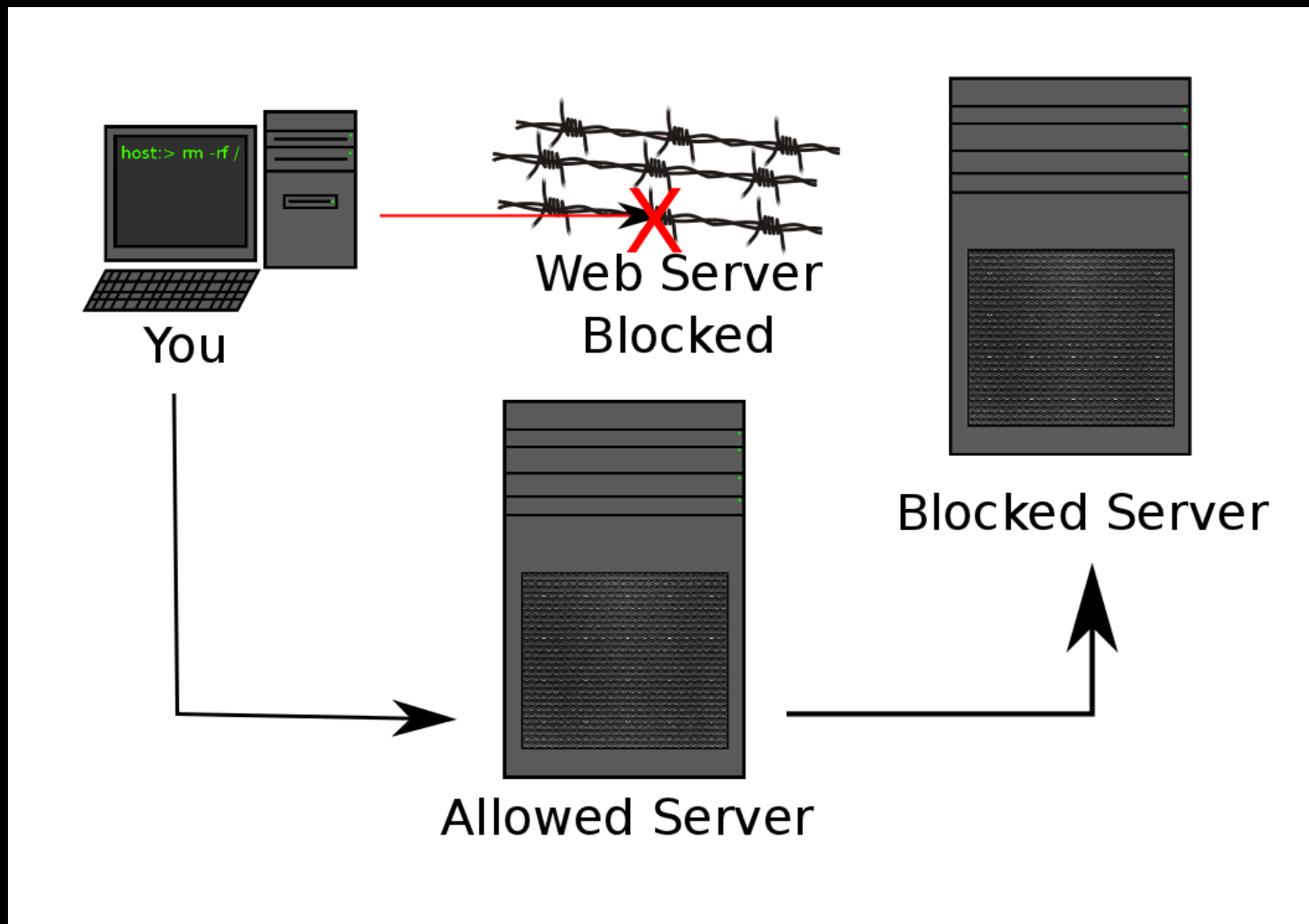
Basics:

- *Use webserver to transport Internet Data
- *Reach blocked page via unblocked page
- *Can reach around web-blockers

Advanced:

- *Can chain these servers
- *Anonymous Web Browsing

HTTP Proxy: A Day in The Life



HTTP Proxy: On Display

Access "www.google.com" with proxy page

"www.google.com" input to stupid proxy

Common and Cool Redirection

Cell Phone:

- *Cell phone is used as internet gateway
- *Phone "proxies" internet packets

Reverse Proxy:

- *Redirects external requests internally
- *Can be used for load balancing

The Onion Network (Tor):

- *Huge, Random, Encrypted proxy network
- *Used for very anonymous web traffic

Questions/Comments/Heckling

That's all folks.....