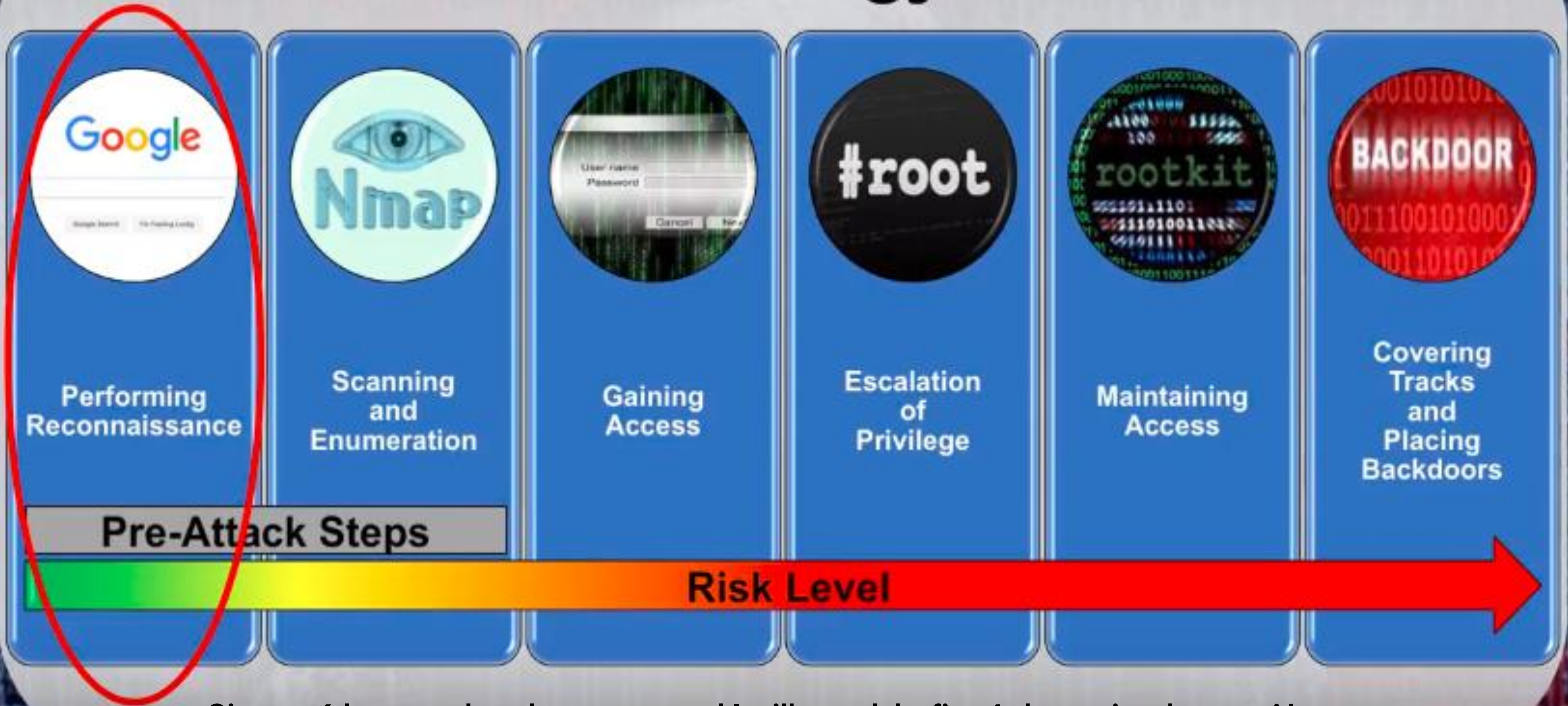
OSINT AND RECON

OSAMA TAHA

Attacker's Methodology



Performing Reconnaissance

Scanning and Enumeration

Gaining Access

Escalation of Privilege

Maintaining Access

Covering Tracks and Placing Backdoors

Pre-Attack Steps

Risk Level

Give me 6 hours to chop down a tree and I will spend the first 4 sharpening the axe. AL

RECON

Systematic attempt to locate, gather, identify and record information about the target

Passive Recon (I can see you but you can’t see me)	Active Recon
❿Open source Intelligence ❿Social engineering ❿Dumpster diving	❿Scanning

OSINT AND RECON WHY?

- Discover useful information from online, infrastructure and domain mapping
- Data collection from open sources (privacy)
- Different take depending on which side you come from

  - Penetration Tester
  - Red Teamer
  - Bug bounty Hunter
  - Investigator

Phase I - External, Web, Online OSINT

- Nowadays, a number of web based resources can be leveraged and at times overwhelming
- Free, paid access and most have APIs
- Domain Infrastructure

  - dnsdumpster.com
  - centralops.net
  - mxtoolbox.com
  - ultratools.com
  - shodan.io
  - censys.io
  - crt.sh
  - viewdns.info
  - search engines
- FOCA (Fingerprinting Organizations with Collected Archives)

The Big Picture So far

- We have Domain Names, ASN, SPF, DMARC, DKIM, IP Ranges, and a few services
- Network setup/ rough infrastructure of what we are attacking/ defending
- This is general Information, we need to use to further our directives
- Scaling and tactical OSINT

Phase II - Pivoting

- Whois Data, reverse whois lookup
- theHarvester data
- Spider foot
- Gotcha.pw
- Haveibeenpwnd.com
- Hunter.io
- Hacked-emails.com
- Recon-ng

SOCMINT

- Twitter, facebook usually
- Tinfoleak
- Tweets_analyzer,

  https://github.com/x0rz/tweets_analyzer
- Tracking people MITM style,

  https://github.com/boxug/trape

  https://github.com/jivoi/awesome-osint

Phase III - Bug Bounty Hunters and Pen Testers

- Finding sub-domains for one or more domains
- Subdomain Enumeration

  - web resources

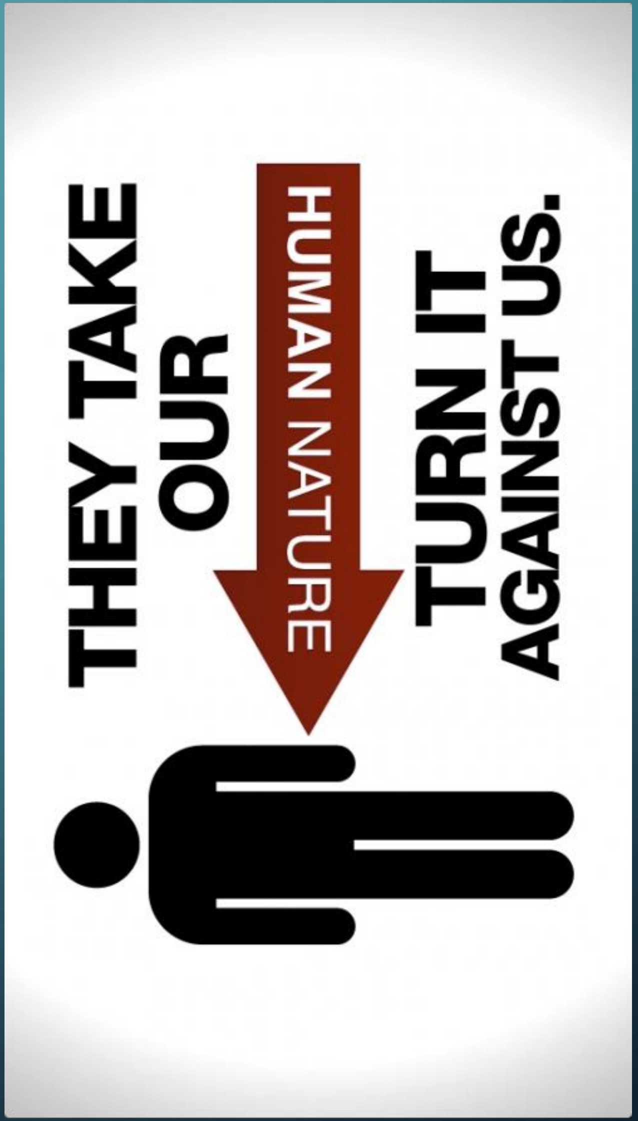
  - git clone https://github.com/ZephrFish/AttackDeploy

  - git clone https://github.com/nahamsec/bbht

  - git clone https://github.com/nahamsec/lazyrecon

Social engineering

- Convincing Story
- Soft target
  - Personal assistants
  - Receptionists
  - Temp staff
- Phishing
  - Known email address
  - Internal terminology
  - Policy update
- Customer care staff
  - Masquerading as a customer
  - Details on a customer
- Helpdesks
  - Password resets
  - Access passes



Phase IV – Internal, Offline Recon

- Internal security assessments
- Mapping internal infrastructures
- “our job as attackers is to map and understand your network better than you do”, Rob Joyce, Former TAO lead
- Routers, Servers, Workstations, Mobile devices etc.

- Internal Recon continued …
- Nmap
  - nmap -sSUV -top-ports=250 -T4 -v -O -version-light -traceroute -script=ms-sql-info,nbstat,smb-os-discovery,snmp-sysdescr -script-args snmpcommunity=public -oA network_map
  - other service scans for ports 21, 22, 23(duh),25,53, 69,80,143,443,445 and others
- Scripting Languages
  - python, PowerShell, bash, Perl(yes), batch(I know)
- Different operating systems and devices Examples:

  - powerview from powersploit (windows)
  - sharphound/bloodhound (windows)
  - adrecon (powershell, windows)
  - bash for recon (*nix)

HOW TO DEFEND AGAINST OSINT-

- ✓ Firewalls
- ✓ Don’t publish sensitive information
- ✓ Disable unnecessary services
- ✓ Prevent search engines from caching your web page
- ✓ Use anonymous registration services
- ✓ Configure web servers to avoid information leakage
- ✓ Carry out footprinting and remove sensitive information found

HOW TO DEFEND AGAINST OSINT- CONTINUED

✓ Use TCP/IP and IPSec filters

✓ Configure IIS against banner grabbing

✓ Configure IDS to refuse suspicious connections and pick up on patterns

✓ Educate employees

✓Encrypt and password protect sensitive information.

WELL, IT DEPENDS!!!