HONEYPOTS AND REAL THREAT INTEL

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WHOAMI

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- *@dianainitiative (COO) & @BSidesChicago*
- *(many?) years in Security, with an emphasis on Blue Teams, SecOps, IR and previously Purple Teams.*
- *Based in Pittsburgh and a natural creature of winter, you can typically find me sipping Grand Mayan Extra Anejo whilst simultaneously defending my systems using OSS, magic spells and Dancing Flamingos.*
- *Honeypots & Refrigerators are a few of my favorite things!*

DISCLAIMER

- The views and opinions expressed in this presentation are my own and do not necessarily reflect the official policy or position of any current or previous employer. Examples of exploitations, coding and vulnerabilities discussed/demonstrated within this presentation are only examples and they should not be utilized in the real-world.

Those of you with an overwhelming fear of the unknown will be happy to learn that there is no hidden message revealed by reading this warning backwards.

WHY ARE WE HERE?

- $66 B! (2018)
- Attacks and breaches are common place
- Security Appliances and software are vulnerable
- Lateral Movement
- But what about –
  - Your Security Architecture is not unique
  - What is your "typical day"

Instead of Brilliance, we have standardized mediocrity.
– John Strand, Offensive Countermeasures

WHY WE ARE NOT HERE

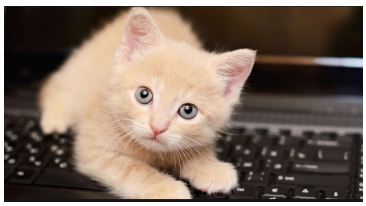
- This is not a demo of 5000 different honeypots
- I'm not showing you all of my honeypots (duh)
- We won't solve all your security problems
- Neither will the person next to you
- We won't get you back your weekends

- BUT – there must be a better way!

WHAT IS A BREACH?

- Most breaches are NOT 0-day
- Most breaches are NOT "fancy"
- Most breaches don't come from "vulnerability scanners"

- Most breaches come from "Config Issues"
- A close 2nd - compromised credentials
- Trailing in 3rd - Over-Priv Users

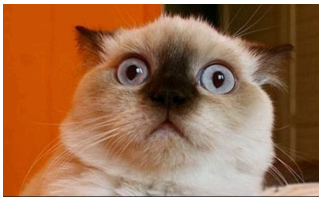


AWARENESS

- Assets
  - Hardware
  - Software!!
- Visualization
- Normal vs Abnormal
  - Geo?
- Vulns vs Exploits
  - Exploitable?
  - Honey-??

SECURITY AWARENESS

- Preventing won't solve everything!
  - Security is not just about preventing, but *Visibility (Detection)*
  - Isolation won't solve everything
- Visibility of everything
  - All access/activity
- Logging AND Monitoring AND Visibility = Threat Intelligence



PREVENTION?

"There are two types of companies that use computers. Victims of crime that know they are victims of crime and victims of crime that don't have a clue yet."

James Routh, 2007
CISO Depository Trust Clearing Corporation

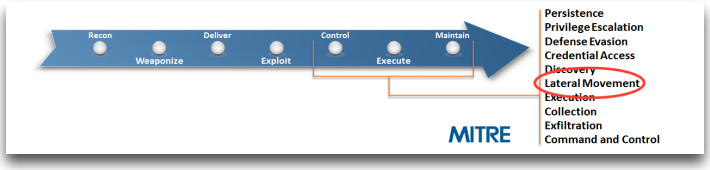
there's been more of a move to prevention vs. just passive detection = $$

HONEYPOTS

- Honeypots vs Deception
  - A resource with no value
    - Value = Use of Resource
  - Does Not Hack Back
    - (Yet?)
- Important Points
  - Deployment = Architecture
  - Architecture = Deployment
  - Planning!
  - 100's of "types"

LATERAL MOVEMENT

- Enables an adversary to access and control remote systems on a network.
- Could allow an adversary to gather information from a system without needing additional tools.
- Can be used for remote execution of tools, pivoting to additional systems, access to specific information or files, access to additional credentials, etc.
- Is often very important to an adversary's set of capabilities and part of a broader set of information and access dependencies that the adversary takes advantage of within a network.



https://attack.mitre.org/wiki/Lateral_Movement

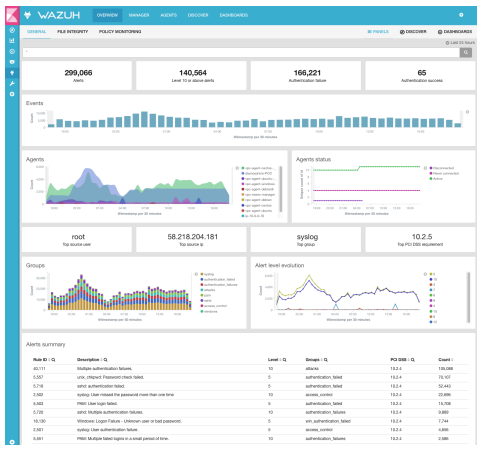
OODA VS CCAD

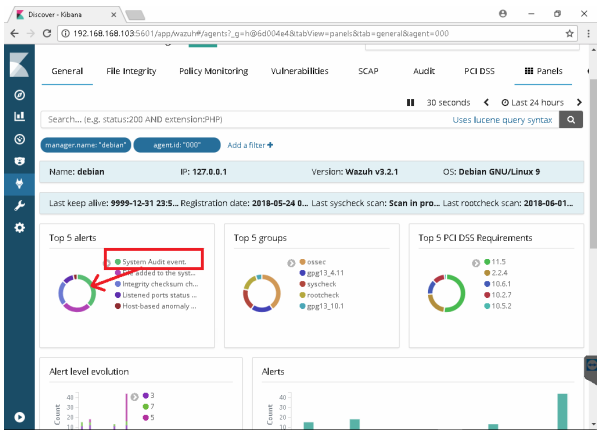
- OODA
  - Observe
  - Orient
  - Decide
  - Act
- CCAD
  - Confuse
  - Confound
  - Annoy
  - Delay

PICK ONE

- Honey Badger -- https://github.com/lanmaster53/honeybadger
- Honeycomb Framework -- https://github.com/Cymmetria/honeycomb
- Twisted-honeypot -- https://github.com/lanjelot/twisted-honeypots
- Adhd-artillery -- https://github.com/adhdproject/adhd-artillery
- Canarytokens -- https://canarytokens.org/generate
- OpenCanary -- https://github.com/thinkst/opencanary
- T-pot -- https://github.com/dtag-dev-sec/t-pot-autoinstall
- Modern Honey Network -- https://github.com/threatstream/mhn
- RPi and Dshield -- https://isc.sans.edu/diary/22680
- Conpot -- https://github.com/mushorg/conpot
- This is getting silly…

MONITORING - WAZUH.COM





DEPLOYMENT

- Plan, Plan, Plan!
  - Low, Medium, High
  - Honeypots, Honeyports, Honeytokens, Honeycreds
  - Banners & Customization
  - Real vs Self-Signed Certs
  - HIDS / OSSEC / Wazuh / SIEM
  - Rules! Tuning
- Where?
  - Server Farms
  - Shares
  - IoT
  - DMZ
  - IP space
  - MX
  - DNS
  - PoS

REAL THREAT INTEL

- MicroPOS
- Stolen/Compromised Creds
- (Mis)configuration mgmt system
- Hardware/Server rooms
- Mail Server
- Mirai
- Microservice / Honeyport
- SQL tables / CC
- Service Accounts
- ssh/AWS Keys
- Offsite storage (dropbox, gdocs)

HIDING IN PLAIN SIGHT

84%

of organizations breached had evidence of the breach in their log files...

Source: Verizon Data Breach Report, 2014

TAKE AWAYS

- Fill the Skills Gap!
- CCAD
- Low False Positives
- Lateral Movement
- Cost Effective
- Defend & Detect
- Additional IR
- Forensics
- REAL Threat Intelligence

BOTTOM LINE

You can't *protect* anything without
first *identifying* assets and risks faced by each.

You can't *respond* to events if you have
not implemented proper measures to *detect* them.

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