ars TECHNICA

BIZ & IT TECH SCIENCE POLICY CARS GAMING &

GEEK SQUAD —

Inmates built computers hidden ceiling, connected them to prison network

A Rogue Raspberry Pi Found on NASA's JPL Network

By Ryan Whitwam on June 20, 2019 at 12:26 pm | Comment

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Craig Bowser

GCDA, GSEC, GCED

555 Mentor

Rapid Recognition and Response to Rogues

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o by NASA on Unsplash

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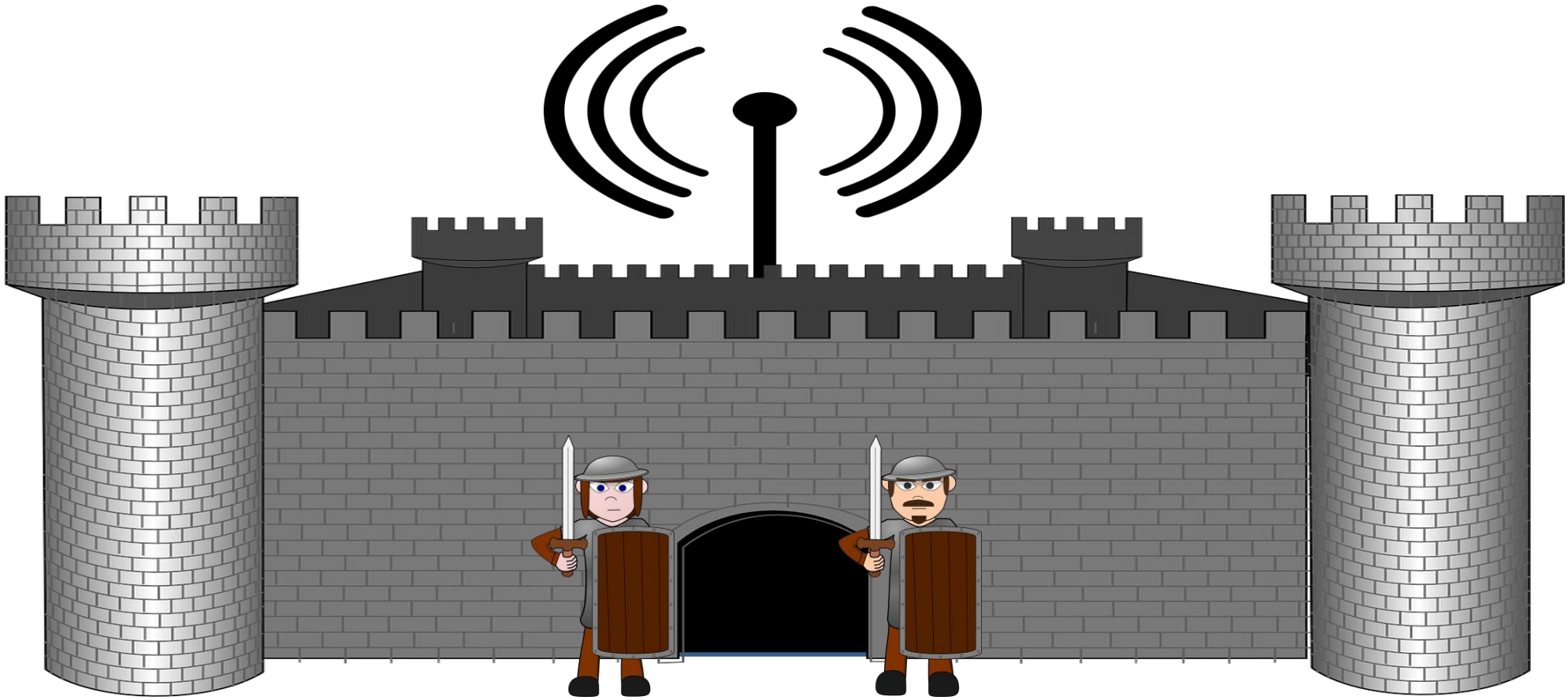

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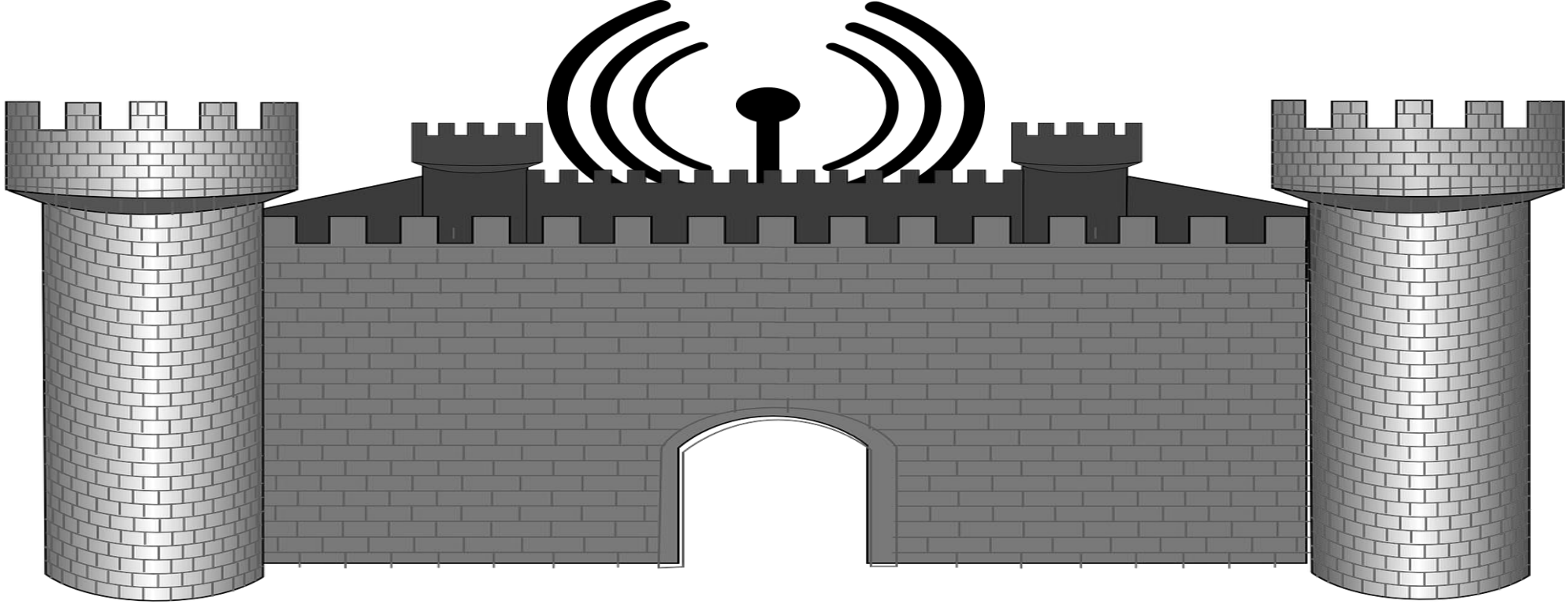

Back door

Man in the middle

Etc.

Private business

Malware Server

Sniffer

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- Network Scans – Scan regularly and perform diffs on each scan
- Tools – Install and deploy
- Custom tools – Build, deploy and install

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Authorized Devices – Known, Approved (attributable), up to Date

Known, but outdated – Approved device, but does not have all required agents/proper configs.

Unauthorized – Know what it is and what it does, but it does not have permission to be on the network.

Unknown – Know IP, maybe know OS, ports, but not much else.

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IP & MAC & Hostname

……Maybe OS

……Maybe open ports

……Signal information… some

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1.1.1.1

OS

Open ports (w/ service guess)

MAC

Hostname

AD Membership

Possible Vendor

Results from Vulnerability Scan

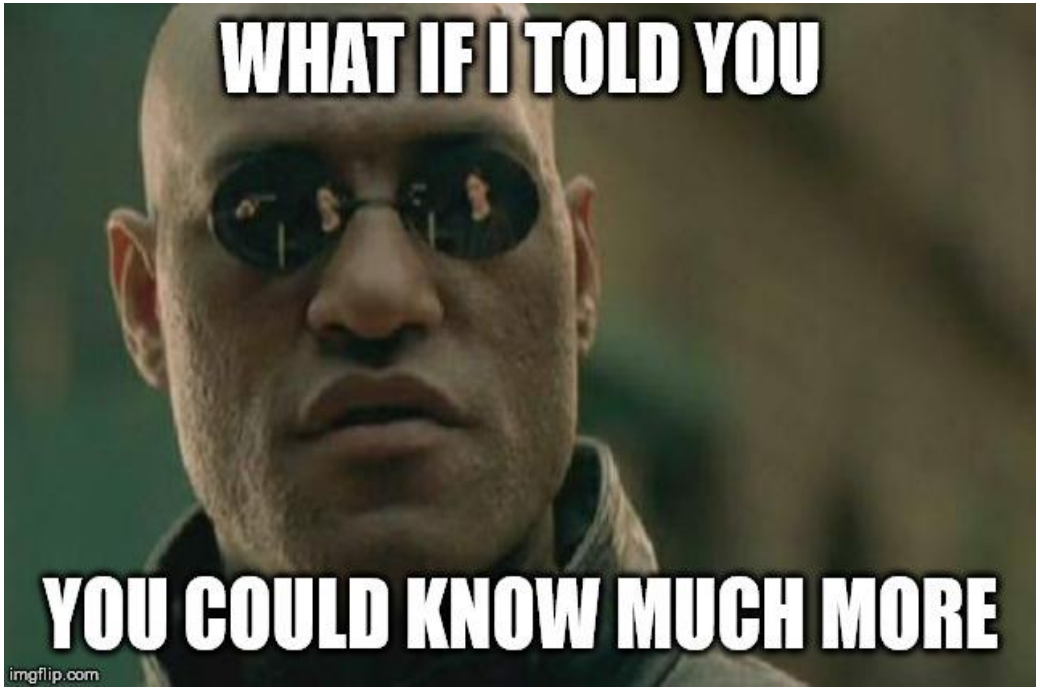
Installed Agents

Network location

Provider

Physical location

Link to SIEM to pull up all related events related to that



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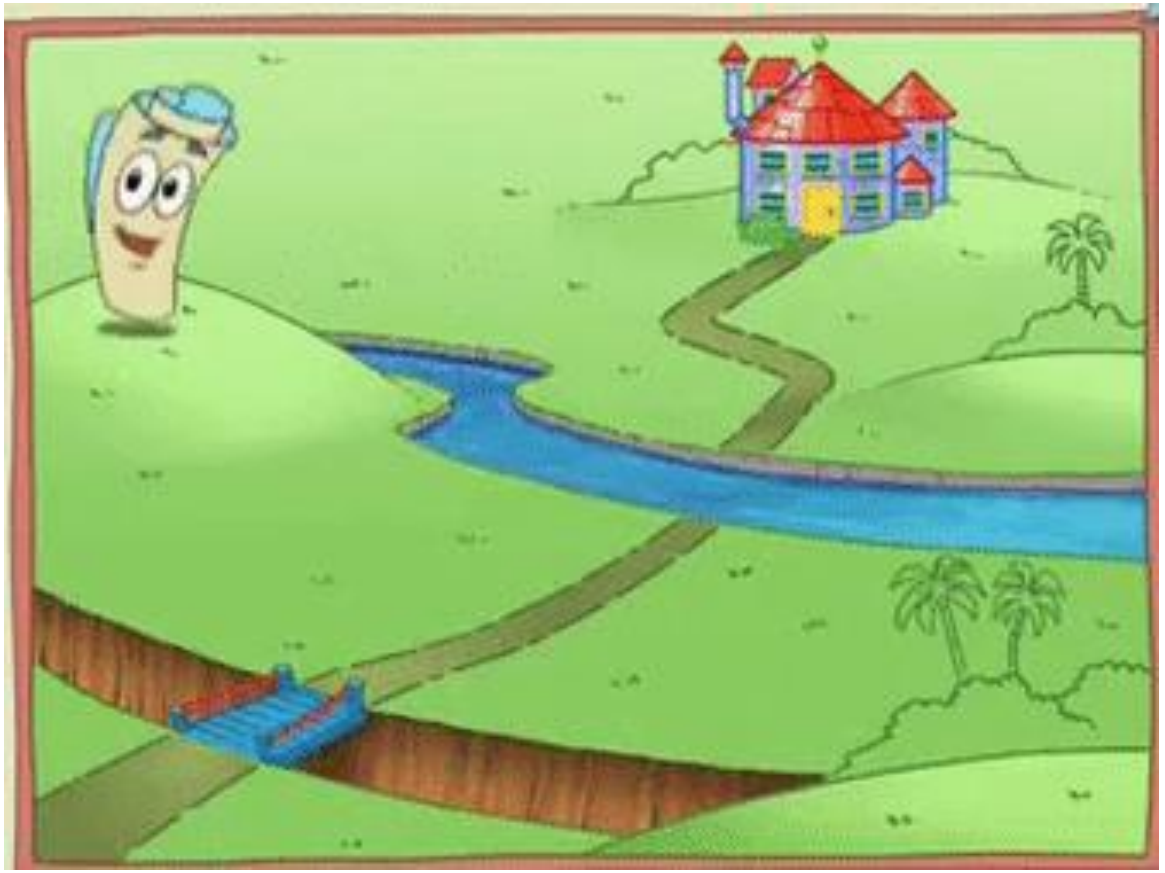

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IP, MAC and Hostname:

DHCP, IPAM, SCCM

AD Membership:

WMI or PS query to AD

Possible vendor:

Query against MAC OUI file

Vulnerability Scan:

Query scanner API or results in SIEM

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Installed Agents:

Query tool API or compare to lookup table

Network location:

Query tool API, SNMP, or CAM tables

Provider:

Often comes with WIDS information

Physical location:

CAM tables, tool API, or approx location from WIDS

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	DHCP-MAC	Date Found	DHCP-HOST	Sco	IP	Lease	VENDOR	Ping
1	00-0C-29-E4-48-10	5/26/2019	GIANTS.SCOUTS.LOCAL	Wor	192.168.1.101	####	VMWare	N
2	40-A8-F0-3E-E8-7E	5/26/2019		Wor	192.168.1.105	####	Hewlard Packard	Y
3	6C-01-A8-C0	5/26/2019	BAD_ADDRESS	Wor	192.168.1.108	####	INVALID OUI	Y
4	00-0C-29-3A-F2-60	5/26/2019	UBUNTU.SCOUTS.LOCAL	Wor	192.168.1.110	####	VMWare	Y

	P4445	C$	SAV	EPO	P80	DH	Link
1						192	http://192.168.1.106:8000/en-US/app/search/search?earliest=-7d&lat
2						192	http://192.168.1.106:8000/en-US/app/search/search?earliest=-7d&lat
3		Y				192	http://192.168.1.106:8000/en-US/app/search/search?earliest=-7d&lat
4					Y	192	http://192.168.1.106:8000/en-US/app/search/search?earliest=-7d&lat

https://github.com/ericmccullough/r2d2

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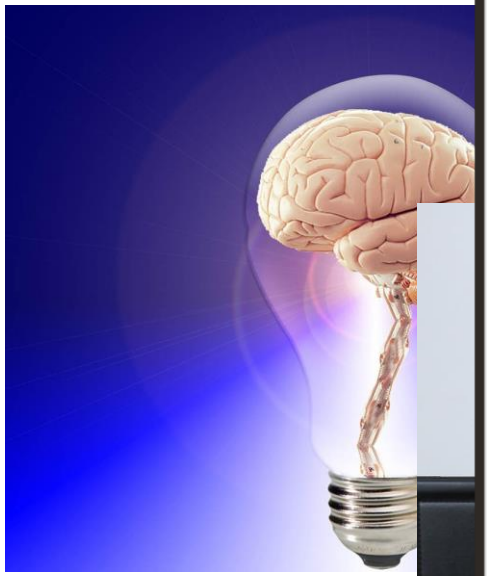

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Rogue Inquisitor

https://github.com/reswob10/RogueInquisitor

< logo here TBD>

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```
source2:
  name: DHCP
  filename: c:/tools/files/dhcp.csv
  MAC_Column: 1
  IP_Column:  0
  Host_Column: 2
  color: grey
  weight: 1
  enabled: 1
```

```
ports:
  - appname: Tanium
    port: 5123
    weight: 2
```

Rogue_Score: -5

Good_Score: 3

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Splunk Demo

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How do we protect our networks?

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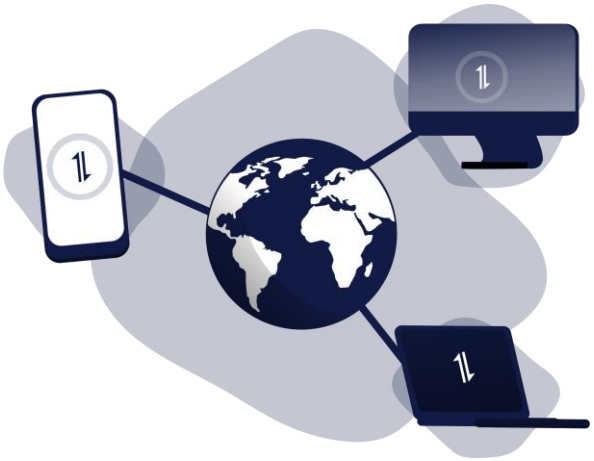

Protections

Inventory of Known Devices
NAC/Port Security
802.1x
Physical Security
Zero Trust Model
User Education

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- Large number of possible rogues?
- Devices that have limited information?
- Can legit users/devices self remediate?

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- Tool Improvement
  - Add APIs
  - Add output options

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