Double A

By: Angelina and Alison
Prior Experience and Expectations

Alison:
No experience with or understanding of cybersecurity and the RasPi.
A little experience with Linux.

I was expecting to be hacking into computers matrix-style.

Angelina:
Very little experience with RasPi and privacy

Expecting to dive straight into research about cybersecurity
Building Mycroft/ Raspberry Pi experience

- Copying Raspberry Pi operating system onto micro SD card
- Configuring Raspberry Pi settings and linking Mycroft software
Adding skills to Mycroft

- Pet and Animals themed skills through Github
- Custom Meow Skill
- Custom Tweet Skill (in Github)
- Ran into issue with skills interfering
History
what does a cat say
> Meow Meow
tweet
> Macaw

Input (':') for command, Ctrl+C to quit >
Intercepting Network traffic & analyzing it

- Activating skills on Mycroft
- Use tcpdump to collect network traffic while Mycroft’s skills are running
- Wireshark

Repeat with Alexa
Checking for trackers + Blocklist

- Using blocklists to identify which skills have trackers on them via domain name

- Implemented an online blocklist created and updated by Peter Lowe since July, 2002
| dst_port | tcp_stream | hostname     | path                     | headers | pill_types | package_name | stopad_abp_bio | firebog_advertised | phoneblocklist | ppi_yoyo_block | noah_abp_block | decision |
|---------|-----------|--------------|--------------------------|---------|------------|--------------|----------------|-------------------|-----------------|---------------|---------------|------------|----------|
| 443     | 27        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 20        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 31        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 13        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 19        | api.amazonlexa.com |                     |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 60      | 22        | nginx_magento17 /HTTPConnTest | ["cache-control": "max-age=0"] |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 26        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 1         | s3-eu-west-2.amazonaws.com |             |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 18        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 28        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 15        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 9         | mls.amazon.com  |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 23        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 13        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 22        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 21        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 14        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 15        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 20        | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 5         | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
| 443     | 3         | mls.amazon.com |                         |         |            |              | 0              | 0                 | 0               | 0             | 0            | 0         |
Alexa + Automation

- Using python script to automate skill installation and skill interaction
- Ran script in Jupyter Notebook
- Observing Alexa symptom checker
What we found helpful

Linux commands
- The tab function is a life saver
- ../../..

Coding in Python
- Looping through two variables at the same time
- Pretty table and statistics libraries

```python
from prettytable import PrettyTable
import statistics

x = PrettyTable()
x.field_names = ["Persona", "Mean", "Median"]

for y, persona in zip(data, control_test_labels):
    x.add_row([persona, round(statistics.mean(y), 2), round(statistics.median(y), 2)])
print(x)
```
Privacy Awareness

- Smart speakers such as Alexa save voice recordings
- Being aware of when our data is being collected and who the data is being shared with
Thank you!