Using VirusTotal to Threat Hunt in Your Network

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Incident Response Consortium 2018, Arlington

HEAD OF APPLIED INTELLIGENCE

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Multiple threat focused publications

Alphabet Soup: OSCP, GCIH, GCIA, GPEN, GNFA, GCFA. Security+

Agenda

- Who is VirusTotal?
- What is VirusTotal Intelligence?
- Integrating VirusTotal in Your Investigations
- Investigative Use Cases
    - Alert Triage
    - IOC Expansion/Pivoting
    - Threat Hunting

VirusTotal

Who is VirusTotal?

- One of the world's largest malware intelligence services
  - 2+ Billion malware samples
  - 1 Million files uploaded per day
- Basic and advanced research capabilities
  - Crowdsourced verdicts (basic, free)
  - Threat hunting, investigation, relationship analysis (advanced, paid tiers)
- Powerful intelligence tools: YARA, Hunt, Graph
- Part of Chronicle, Alphabet's cybersecurity company

VirusTotal

What is VirusTotal Intelligence?

- VirusTotal Intelligence (VTI) sandboxing extracts behavioral and other signals
- VTI provides the ability to search through VT's dataset using:
    - Binary properties
    - Detection verdicts
    - Static properties
    - Behavior patterns
    - Submission metadata
- Access via web interface or APIs
- "I never knew I could do these things with VirusTotal!"

VirusTotal

Integrating VT in Your Investigations

- Attacker IOCs are never singular
- Attacks are never single stage
- Most malware wants, or needs, to reach out
- Use TTPs to pivot and **discover more** about who our attackers may be.

VirusTotal

01

INVESTIGATIVE USE CASE

ALERT TRIAGE

Alert Triage

Starting Point

- Piece of malware/URL/IP

What I Want To Know

- Context of my alert
- Explore associated metadata
- Related activity

VTI Approach

- VTI metadata

VirusTotal

Demo Time!

VirusTotal

02

INVESTIGATIVE USE CASE

IOC EXPANSION / PIVOTING

IOC Expansion / Pivoting

Starting Point	• Malicious domain
What I Want To Know	• Are there malicious subdomains? • Is this related to C2 activity? • What else is this domain linked to?
VTI Approach	• Graph + VTI Reports

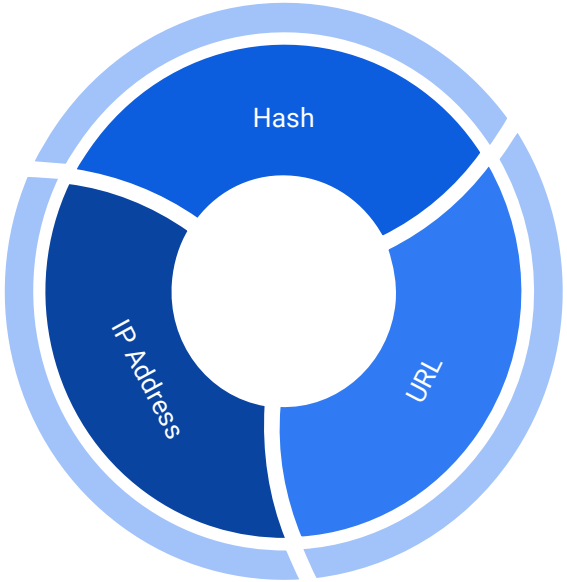
VirusTotal

Demo Time!

VirusTotal

Working Towards Better Defense

- Build context of alerts
- What else should I be looking for?
- Take indicators from one to many
- Collect multiple indicator types



VirusTotal

03

INVESTIGATIVE USE CASE

THREAT HUNTING

Threat Hunting

Starting Point	• Piece of malware/URL
What I Want To Know	• Are there other variants? • How old is my malware? • Are there other targets?
VTI Approach	• Retrohunt + YARA

VirusTotal

What is YARA?

- Tool to assist malware researchers identify and classify malware
- Identify malware in string or binary patterns
- YARA rule = strings + condition
- Useful to catalog threat actors and associated IOCs

What is a YARA Rule?

```
sample-rule {

     strings:

          $a = “malicious_string”

          $b = {56 54 59}



     condition:

          $a or $b

}
```

INDICATORS

LOGIC

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Crafting a Custom YARA Rule

Malware family: **TinyPOS**

- PE file
- Typically < 7kb in size
- Built-in process whitelist/blacklist
- *OPTIONAL:* Built-in persistence
- *OPTIONAL:* Local file exfiltration

Crafting a Custom YARA Rule (2)

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- ~~*OPTIONAL:* Built-in persistence~~
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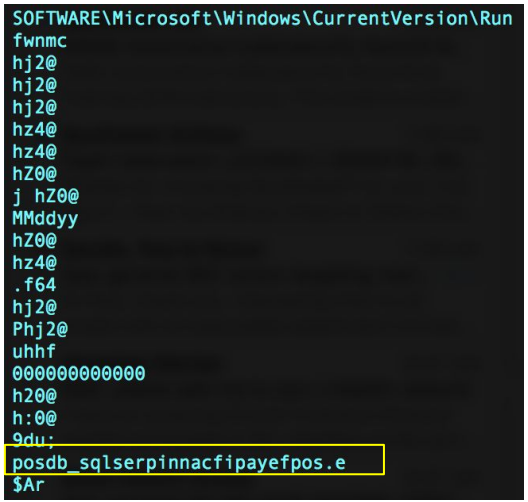
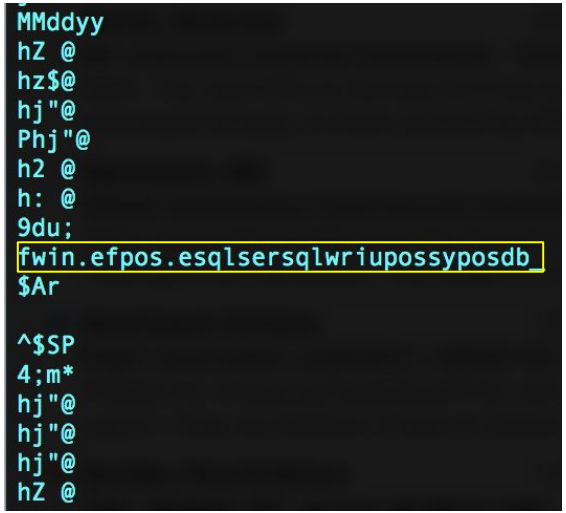
VirusTotal

Crafting a Custom YARA Rule (3)

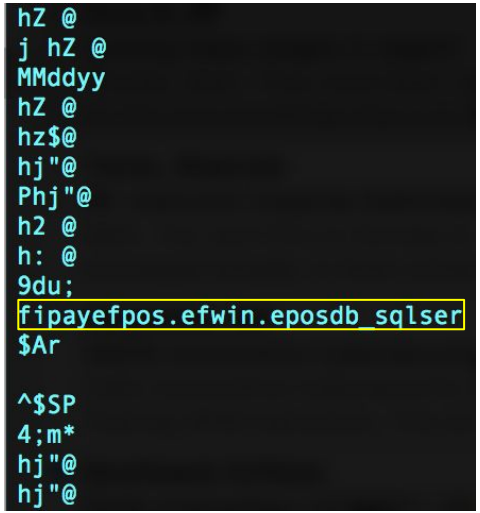
Sample #1



Sample #2



Sample #3



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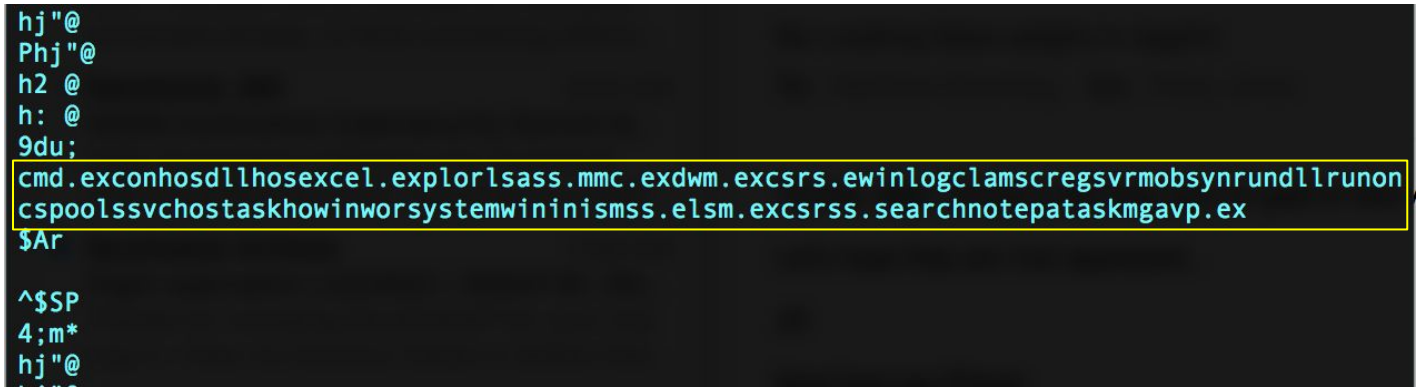
Crafting a Custom YARA Rule (4)

Sample #4



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Crafting a Custom YARA Rule (5)

```
strings:

      $s1 = "fipayefpos.efwin.eposdb_sqlser"

      $s2 = "posdb_sqlserpinnacfipayefpos.e"

      $s3 = "fwin.efpos.esqlsersqlwriupossyposdb_"

      $s4 =
"cmd.exconhosdllhosexcel.explorlsass.mmc.exdwm.excsrs.ewinlogclamscregsvrmobsynrundll
runoncspoolssvchostaskhowinworsystemwininismss.elsm.excsrss.searchnotepataskmgavp.ex"
```

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Crafting a Custom YARA Rule (6)

```
strings:

      /* White Lists */

      $s1 = "fipayefpos.efwin.eposdb_sqlser"

      $s2 = "posdb_sqlserpinnacfipayefpos.e"

      $s3 = "fwin.efpos.esqlsersqlwriupossyposdb_"



      /* Black List */

      $s4 =
"cmd.exconhosdllhosexcel.explorlsass.mmc.exdwm.excsrs.ewinlogclamscregsvrmobsynrundl
lrunoncspoolssvchostaskhowinworsystemwininismss.elsm.excsrss.searchnotepataskmgavp.e
x"
```

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Crafting a Custom YARA Rule (7)

```
strings:

      /* White Lists */

      $s1 = "fipayefpos.efwin.eposdb_sqlser"

      $s2 = "posdb_sqlserpinnacfipayefpos.e"

      $s3 = "fwin.efpos.esqlsersqlwriupossyposdb_"



      /* Black List */

      $s4 = "cmd.exconhosdllhosexcel.explorlsass."
```

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Crafting a Custom YARA Rule (8)

```
rule POS_Sample

{

      strings:

         $s1 = "fipayefpos.efwin.eposdb_sqlser"

         $s2 = "posdb_sqlserpinnacfipayefpos.e"

         $s3 = "fwin.efpos.esqlsersqlwriupossyposdb_"

         $s4 = "cmd.exconhosdllhosexcel.explorlsass."

      condition:

         uint16(0) == 0x5a4d and filesize < 8KB and any of ($s*)

}
```

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Demo Time!

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Takeaways

- Use VTI to gain context of alerts
- Pivot from one to many
- Build out attacker IOCs
- Search for historical malware context

Better network defense

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Thank you.

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VirusTotal

- Basic Malware Research
- Crowdsourced Files
- Aggregated AV Verdicts

VirusTotal Intelligence

- Advanced Malware Research
- API Integrations
- Expanded Information
- Relationship Visualization
- Hunting
- YARA Rules