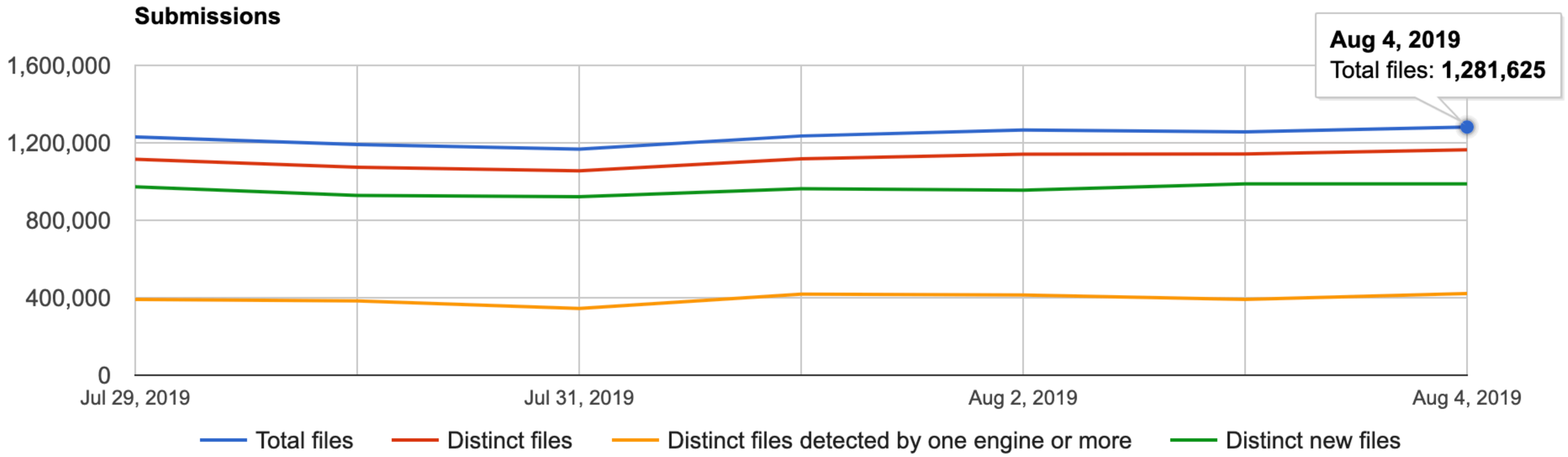
Worm Charming

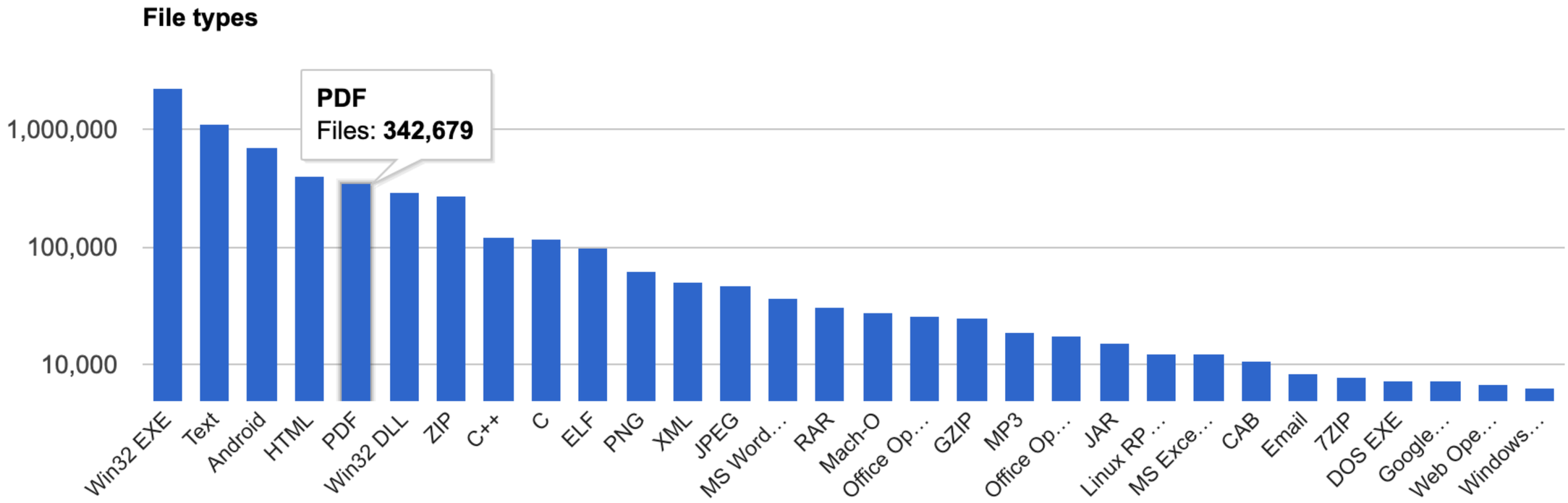
Virus Total Intelligence



VTI: Daily Uploads

~1.3M total < ~1M distinct < ~900k distinct new < ~400k malicious

~1.3m



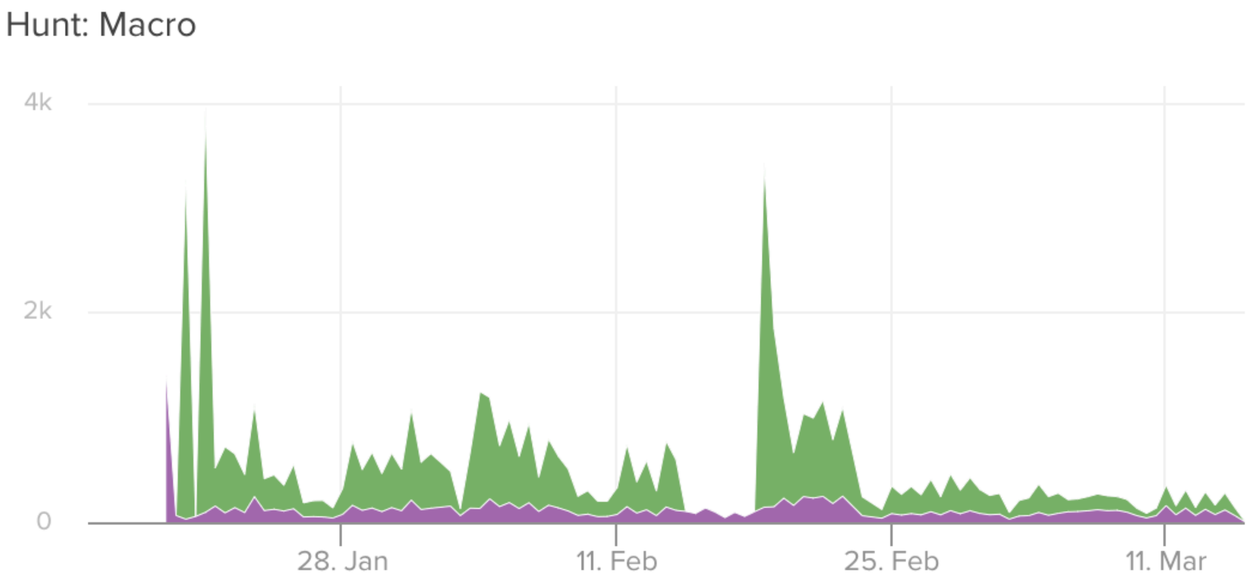
VTI: File Distribution

~400k PDF < ~40k Office < ~15k Java < ~12k Excel …

~470k

Github

```
// any Office document with macros.
rule macro_hunter
{
  strings:
    $ole_marker     = {D0 CF 11 E0 A1 B1 1A E1}
    $macro_sheet_h1 = {85 00 ?? ?? ?? ?? ?? ?? 01 01}
    $macro_sheet_h2 = {85 00 ?? ?? ?? ?? ?? ?? 02 01}
  condition:
    new_file and (
      tags contains "macros" or (
        $ole_marker at 0 and 1 of ($macro_sheet_h*)
      )
    )
}
```



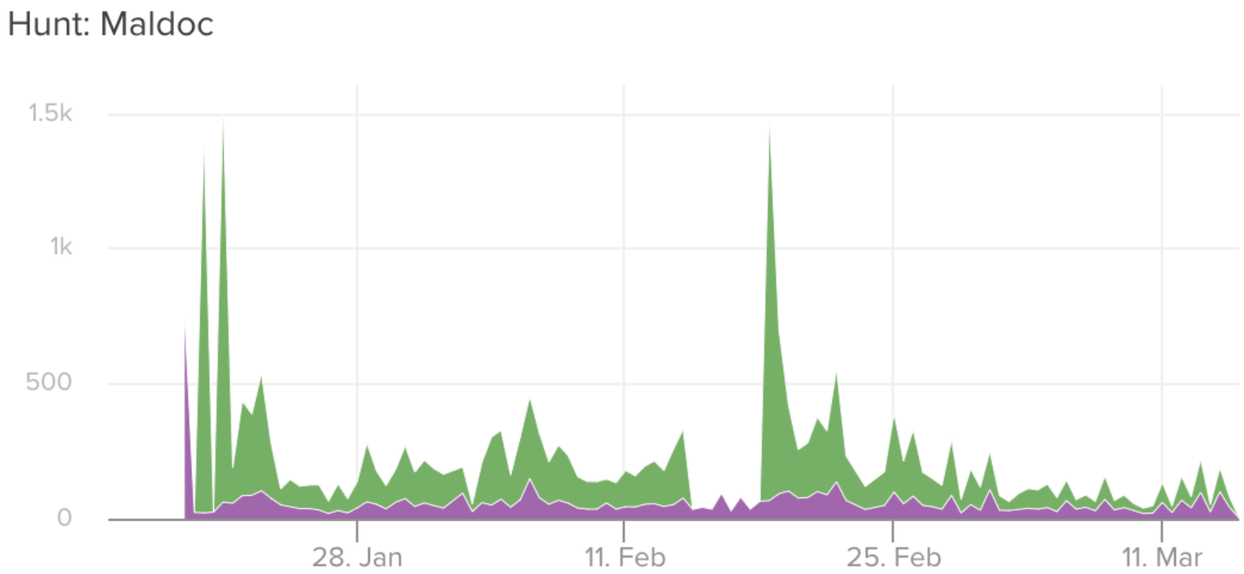
Hunt Stats: Office Macros

1/15 through 3/15 < 1000/day on average.

~1k

Github

```
// any office document with any AV hits or with embedded ActiveX.
rule maldoc_hunter
{
  strings:
    $docx_magic = /^\x50\x4B\x03\x04\x14\x00\x06\x00/
    $activex_1  = "word/activeX/activeX1.bin"
    $activex_2  = "word/activeX/activeX1.xml"
  condition:
    new_file and not (uint16be(0x0) == 0x4d5a)
    and
    (
        file_type contains "office" or
        tags      contains "office" or
        $docx_magic at 0
    )
    and
    (
        positives > 0 or
        all of ($activex*)
    )
}
```



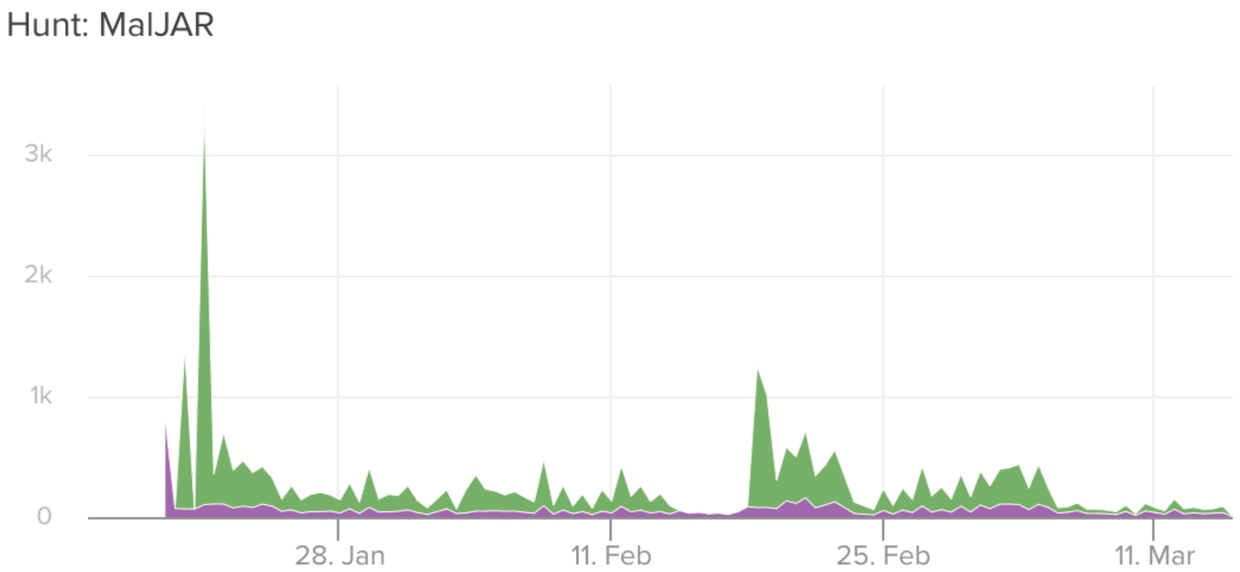
Hunt Stats: Office Documents

1/15 through 3/15 < 500/day on average.

~1.5k

Github

```
// any JAR files with any AV hits.
rule maljar_hunter
{
  condition:
    new_file and positives > 0 and
    (
        tags      contains "jar"   or
        tags      contains "class" or
        file_type contains "jar"   or
        file_type contains "class"
    )
}
```



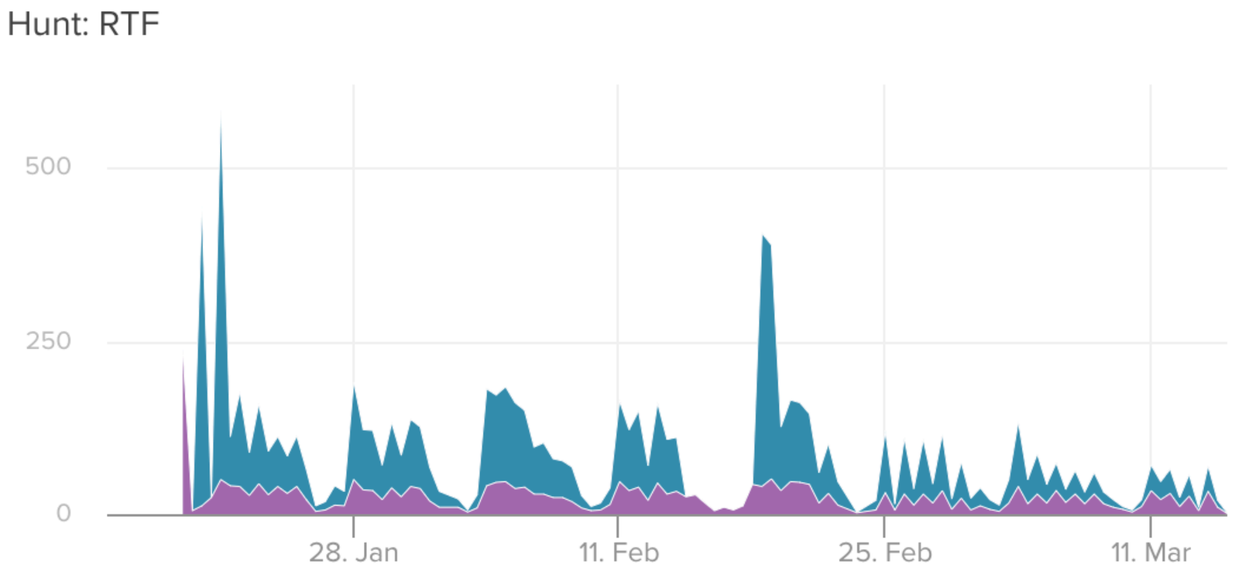
Hunt Stats: Java Files

1/15 through 3/15 < 500/day on average.

~2k

Github

```
// any RTF files with any AV hits.
rule rtf_hunter
{
  strings:
    $magic = "{\\rt"
  condition:
    new_file and positives > 0 and
    (
        file_type contains "rtf" or
        tags      contains "rtf" or
        $magic    at 0
    )
}
```



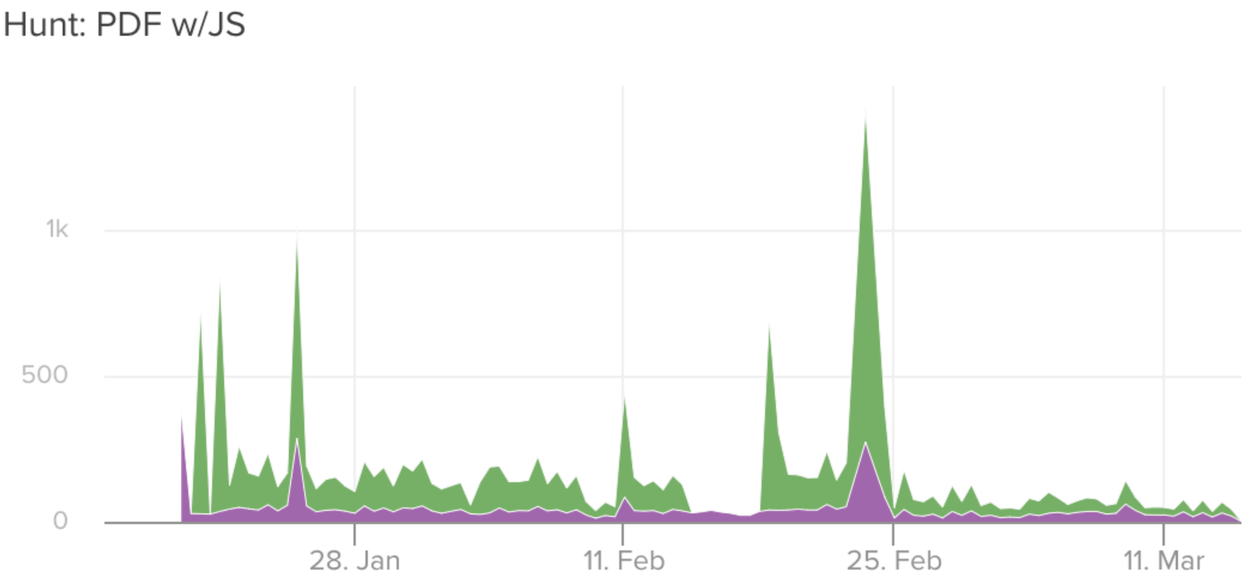
Hunt Stats: RTF Documents

1/15 through 3/15 < 250/day on average.

~2.25k

Github

```
// any PDF file with JavaScript.
rule pdfjs_hunter
{
  strings:
      $pdf_header = "%PDF"
  condition:
    new_file and
    (
      file_type contains "pdf" or
      $pdf_header in (0..1024)
    )
    and tags contains "js-embedded"
}
```



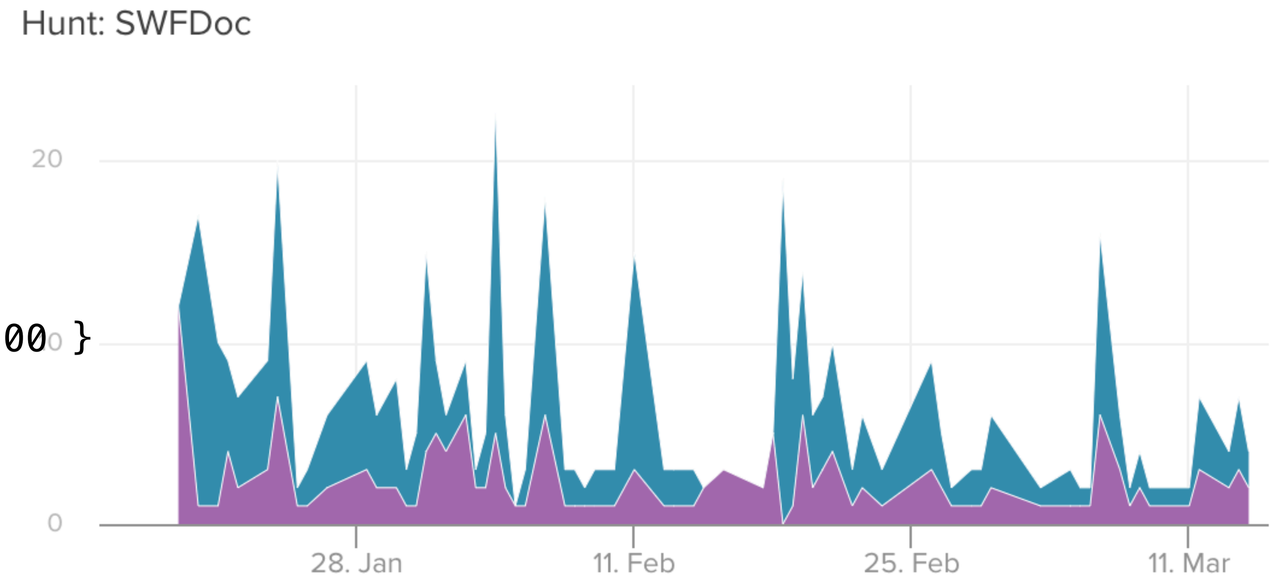
Hunt Stats: PDF Documents

1/15 through 3/15 < 200/day on average.

~2.45k

Github

```
// any office document with an embedded SWF.
// note that we disqualify PE files here,
// due to misclassification.
rule swfdoc_hunter
{
  strings:
    $a = { 6e db 7c d2 6d ae cf 11 96 b8 44 45 53 54 00 00 }
    $b = { 57 53 }
  condition:
    $a and $b and not (uint16be(0x0) == 0x4d5a)
}
```



Hunt Stats: SWF in Document

1/15 through 3/15 < 20/day on average.

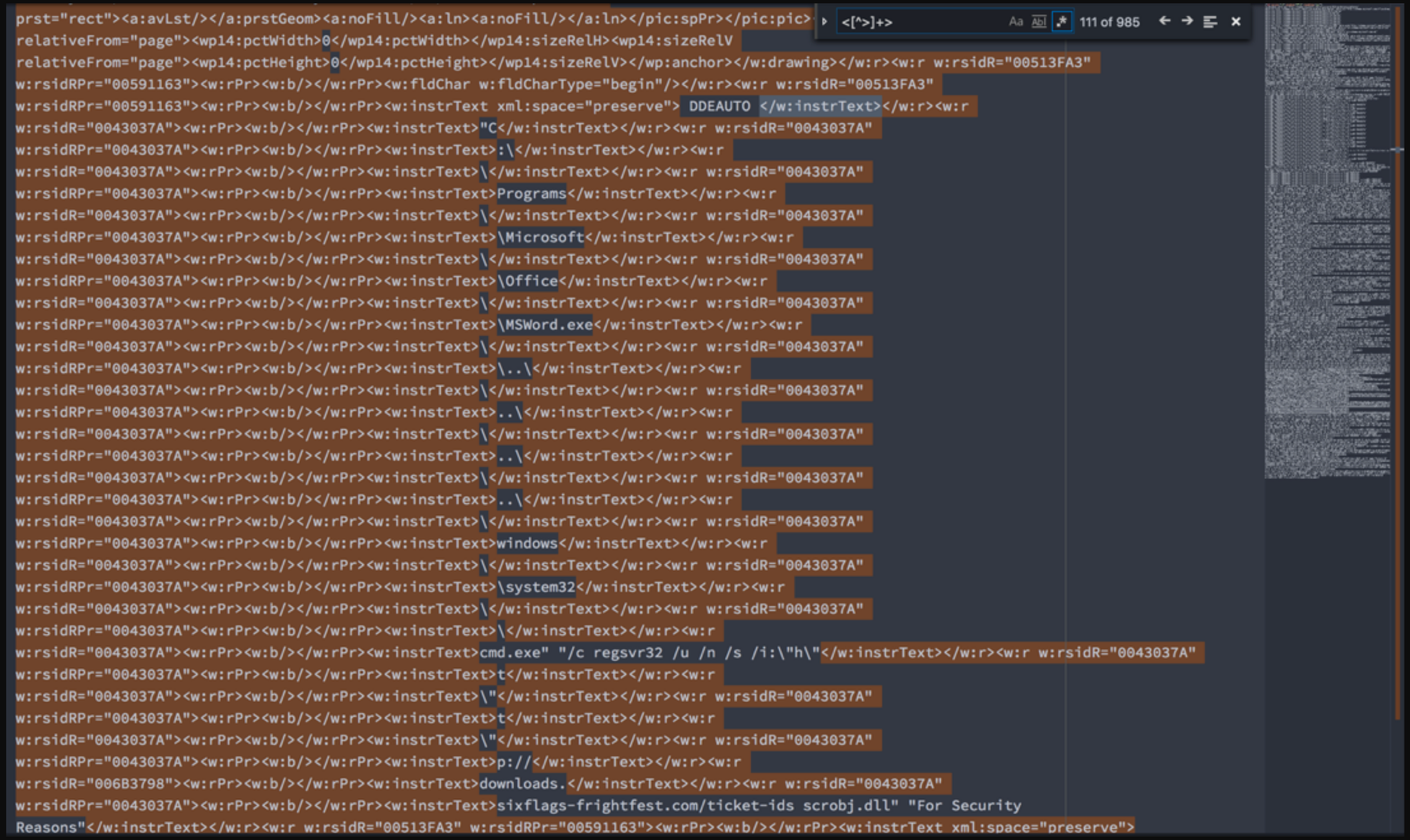
~2.5k

So we're left with ~2,500 samples/day to examine.

(<1% of the corpus)

🎷 Good Vibrations 🎷

- 🕵️MIME evasions ... "**{\rt**" vs "**{\rtf1**" ... "**%PDF**" not at 0.
- 🤦 Burning your 0day via symbols: "shellcode","exploit","heapspray",etc.
- 💣UTF-8 BOM (Byte Order Mark), dates back to 2013.
  - `0xEFBBBF`
- 🌽 **Chaff ...**



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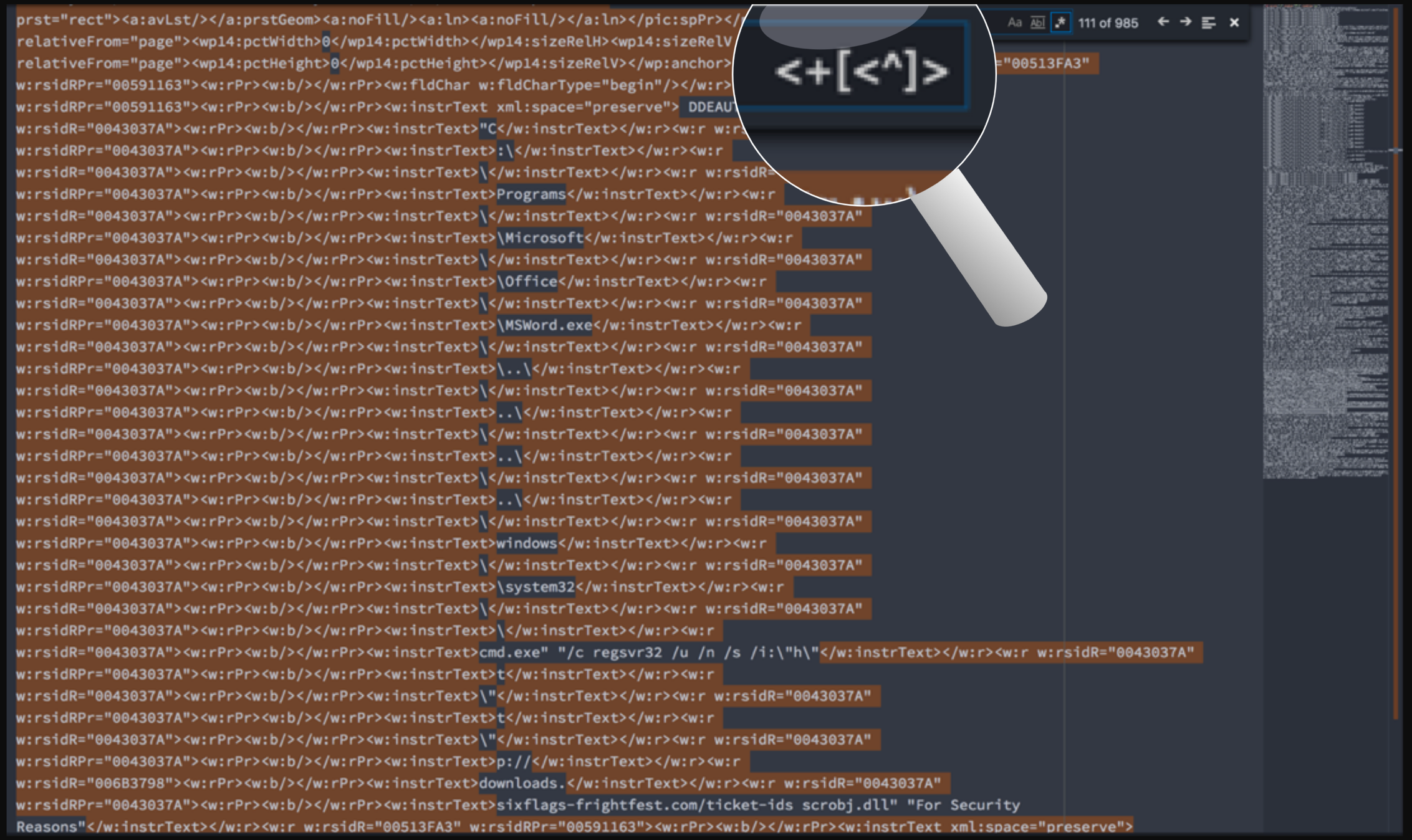

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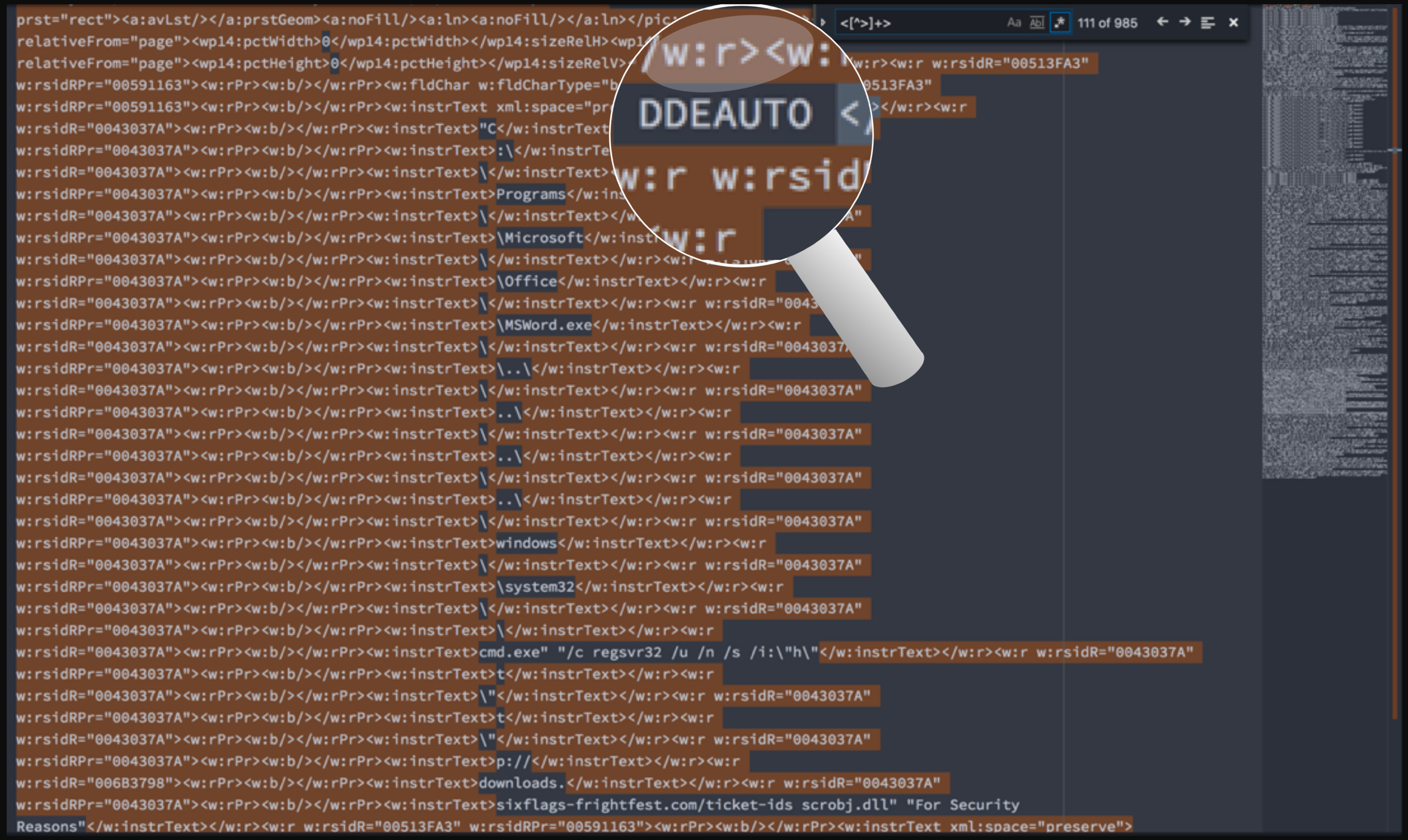
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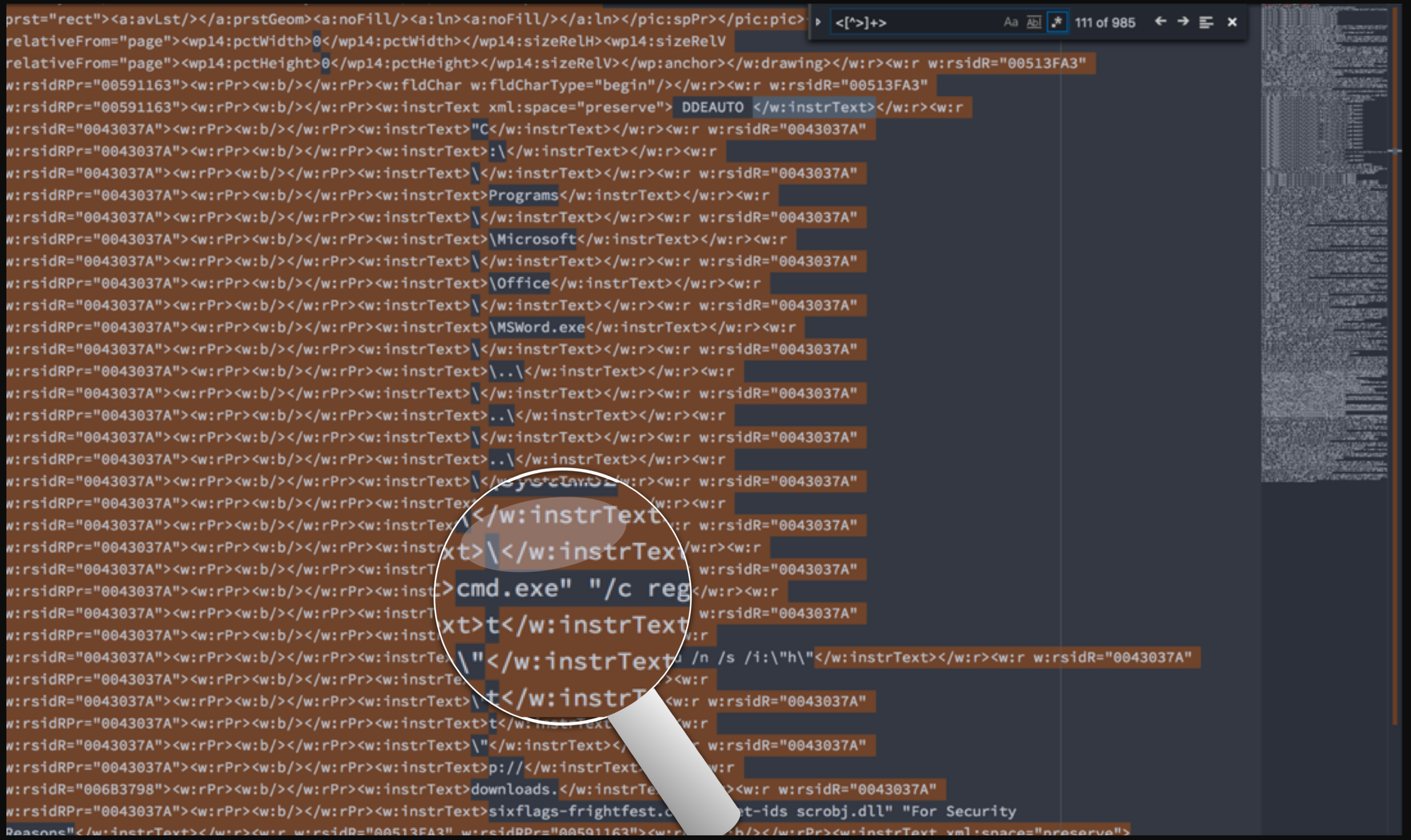
111 of 985



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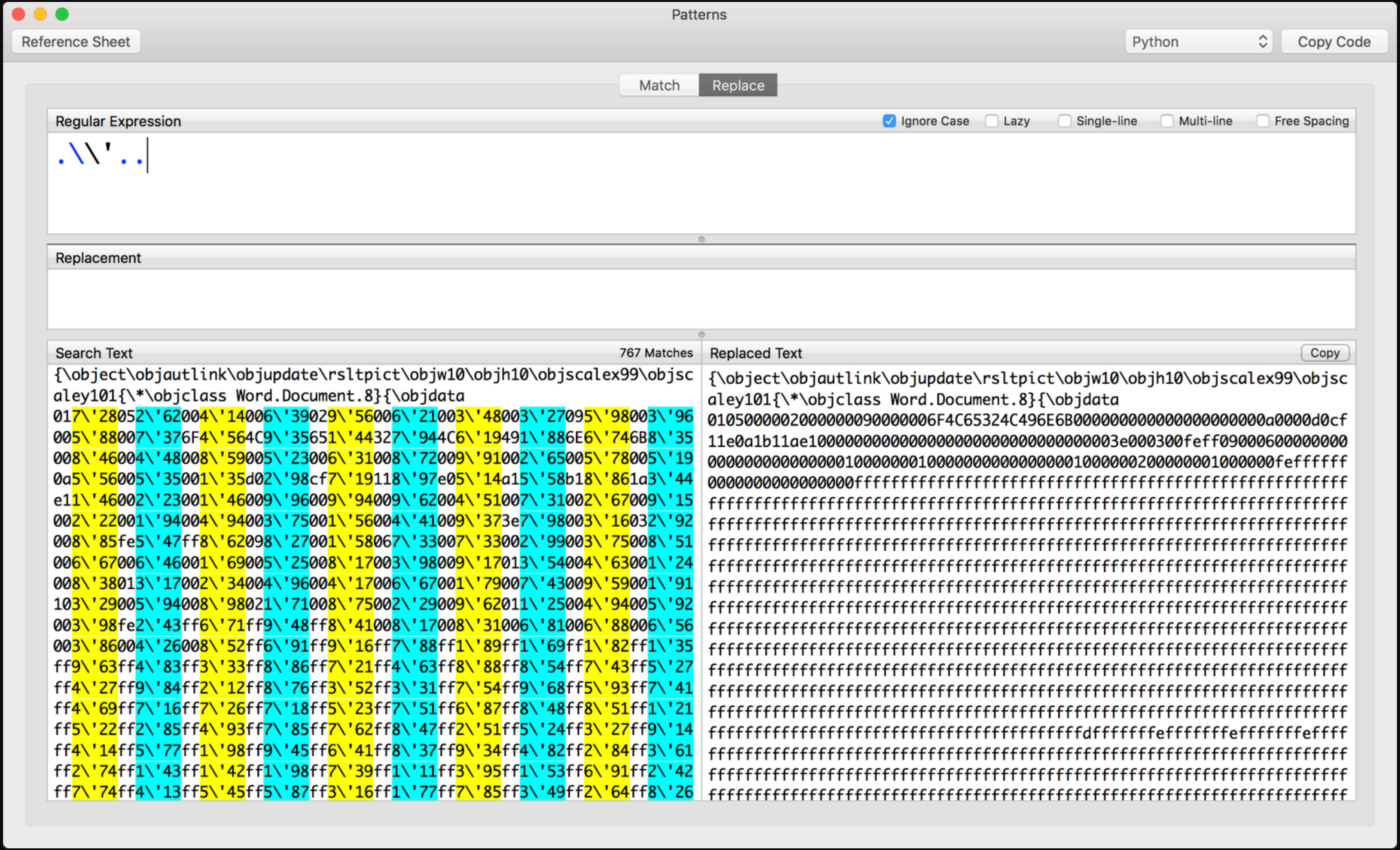
🎷 Good Vibrations 🎷

- 🕵MIME evasions ... "**{\rt**" vs "**{\rtf1**" ... "**%PDF**" not at 0.
- 🤦 Burning your 0day via symbols: "shellcode","exploit","heapspray",etc.
- 💣UTF-8 BOM (Byte Order Mark), dates back to April of 2013.
- 🌽 Chaff ...
- **February of 2018, RTF Byte-Nibble published by Kaspersky.**
    - ***April of 2018, CVE-2018-8174 0day ITW utilizes it.***


Patterns
Reference Sheet
Python
Copy Code
Match
Replace
Regular Expression
Ignore Case
Lazy
Single-line
Multi-line
Free Spacing
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Replacement
Search Text
767 Matches
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