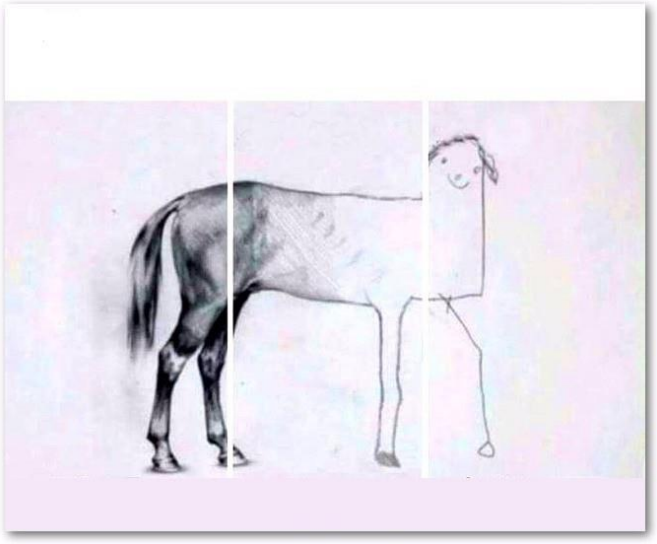


Practical Malware Analysis & Triage

Malware Analysis Report

Remote Access Trojan Malware

Aug. 2022 | eyyys3c | v1.0

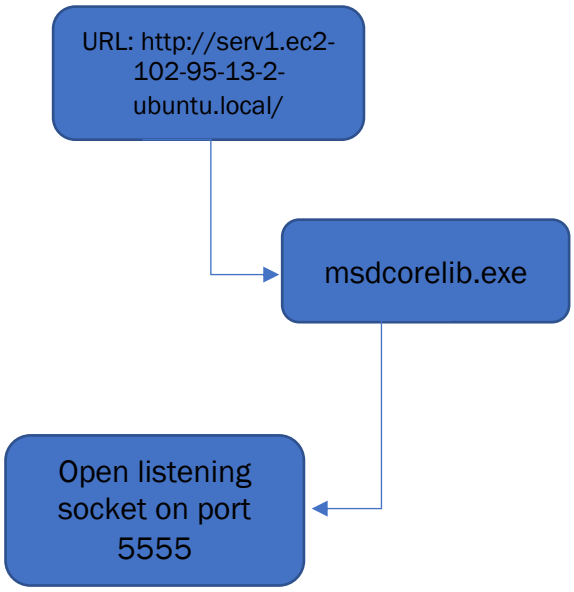
Table of Contents

PRACTICAL MALWARE ANALYSIS & TRIAGE

Executive Summary

SHA256 hash	248d491f89a10ec3289ec4ca448b19384464329c442bac395f680c4f3a345c8c

Remote Access Trojans (RATs) are malware designed to allow an attacker to remotely control an infected computer. In this sample, the malware will start to query a specific call back URL to download the initial payload *msdcorelib.exe* which will also open a listening socket on the infected machine.



Malware Composition

RAT consists of the following components:

File Name	SHA256 Hash
msdcorelib.exe	0a1ae65540bfbe339805376eff97a85fb56660553916c5ada835c543f7a141e3

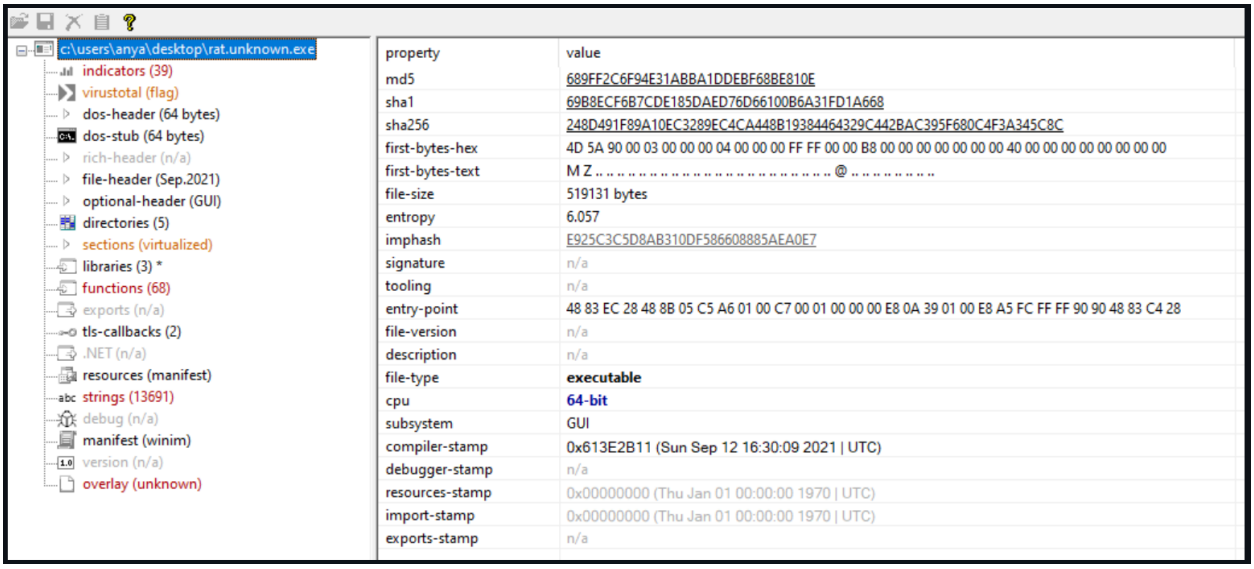
msdcorelib.exe

The executable that runs after a successfully connecting to the callback URL

Basic Static Analysis

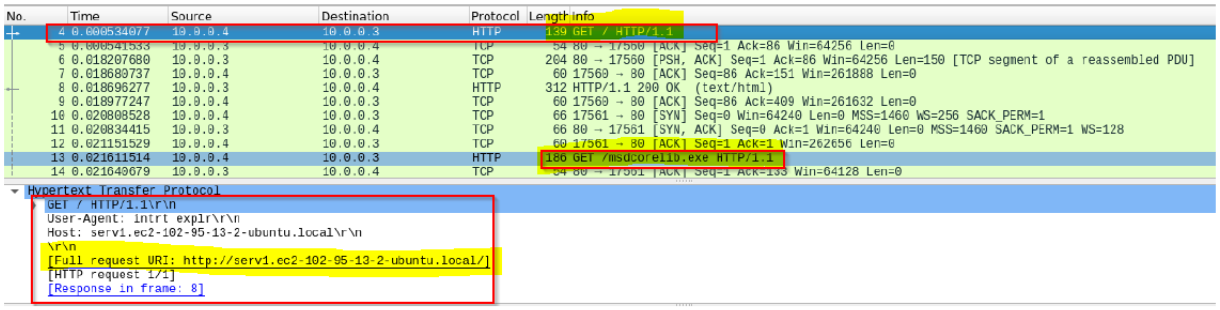
Floss/Strings

```
@SSL support is not available. Cannot connect over SSL. Compile with -d:ssl to enable.
@https
@No uri scheme supplied.
InternetOpenW
InternetOpenUrlW
@wininet
@wininet
MultiByteToWideChar
@kernel32
@kernel32
MessageBoxW
@user32
@user32
@[+] what command can I run for you
@[+] online
@NO SOUP FOR YOU
@\mscordll.exe
@Nim httpclient/1.0.6
@/msdcorelib.exe
@AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Startup
@intrt explr
@http://serv1.ec2-102-95-13-2-ubuntu.local
```



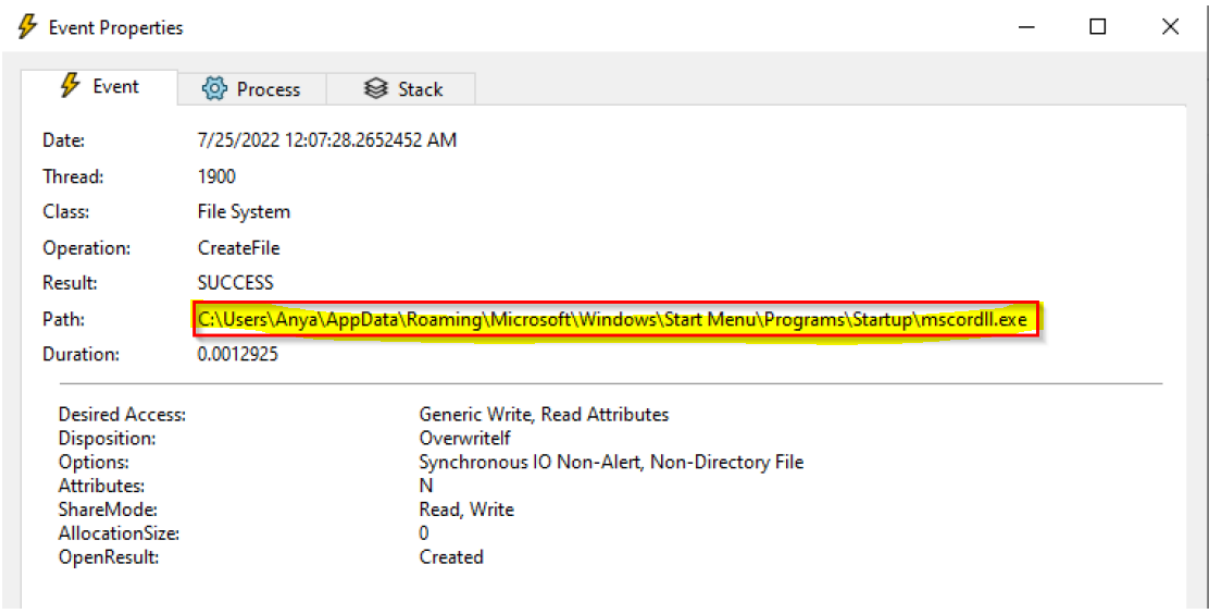
Basic Dynamic Analysis

Network-Based Signatures

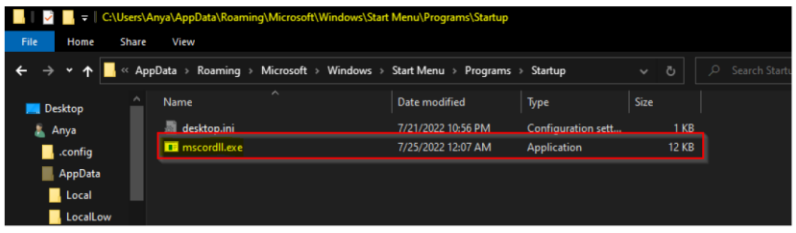


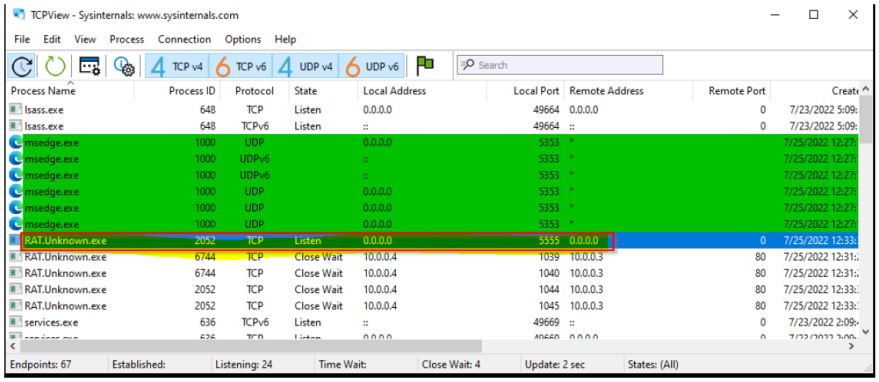
Potential File Download: msdcorelib.exe

Host-Based Indicator

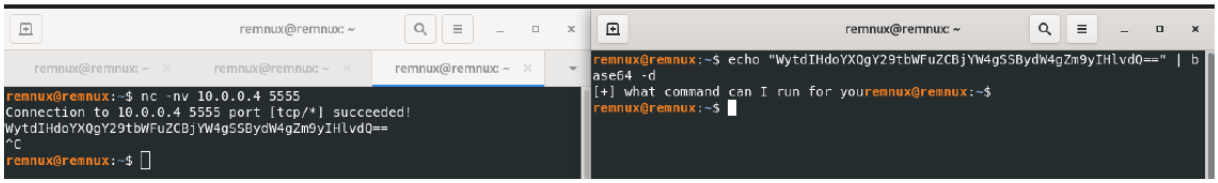


Persistence Binary

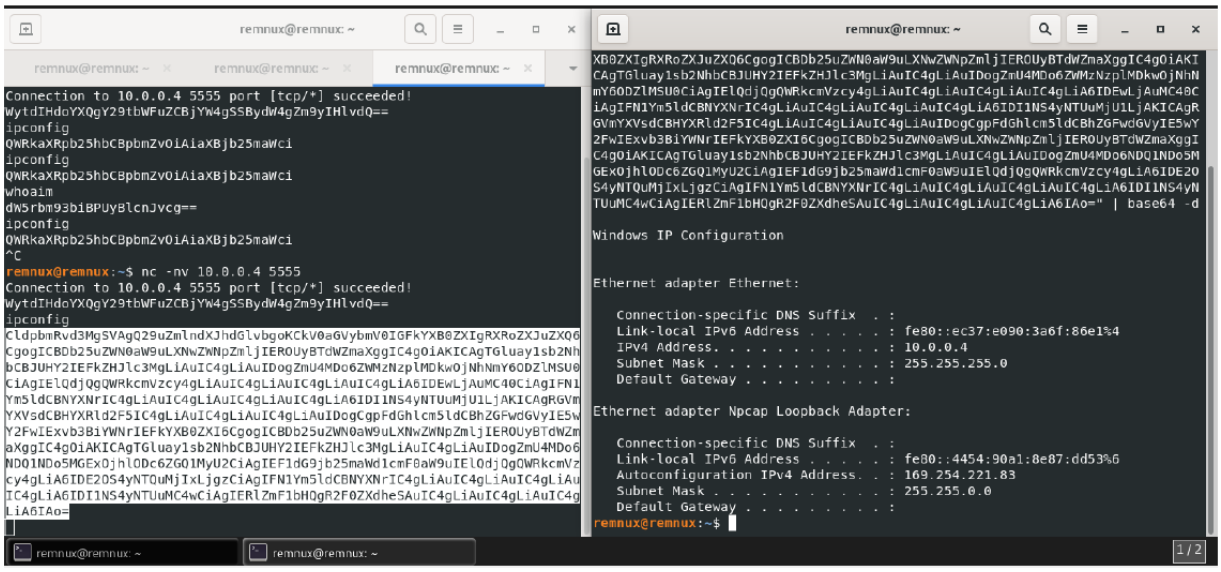




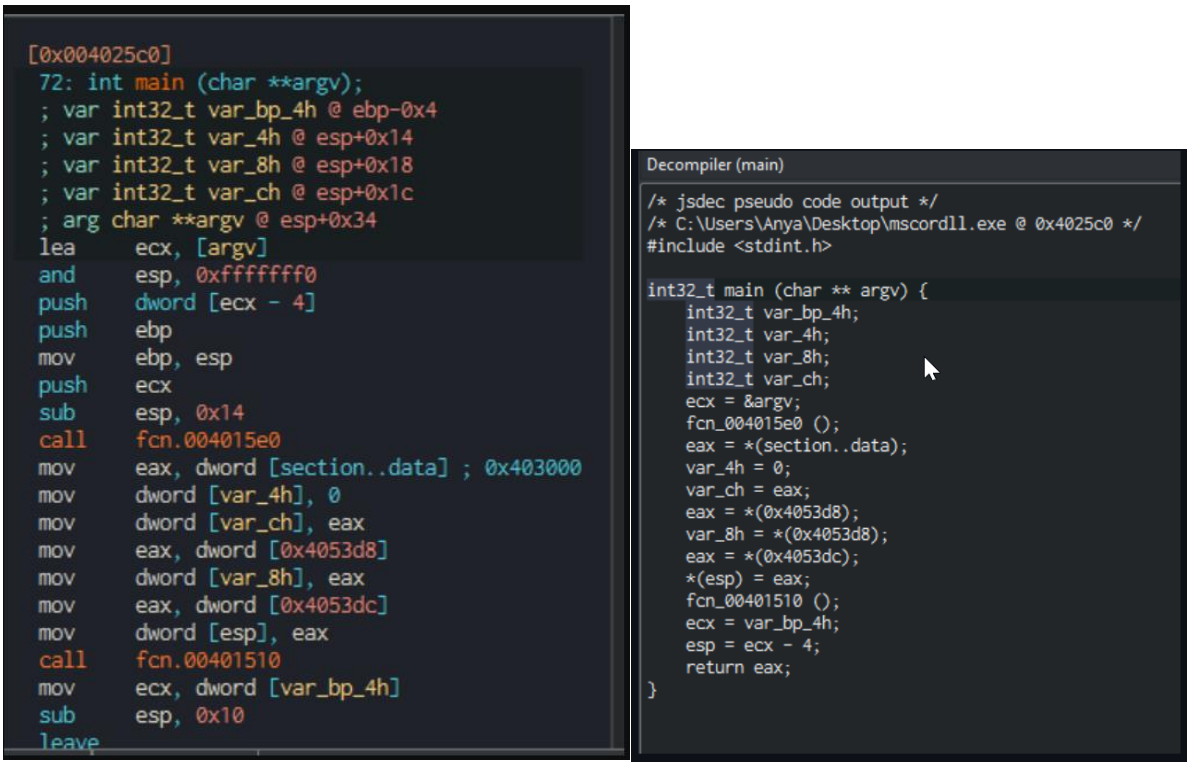
encoded base64 from port 5555



Command Injection Capability:



Advanced Static Analysis



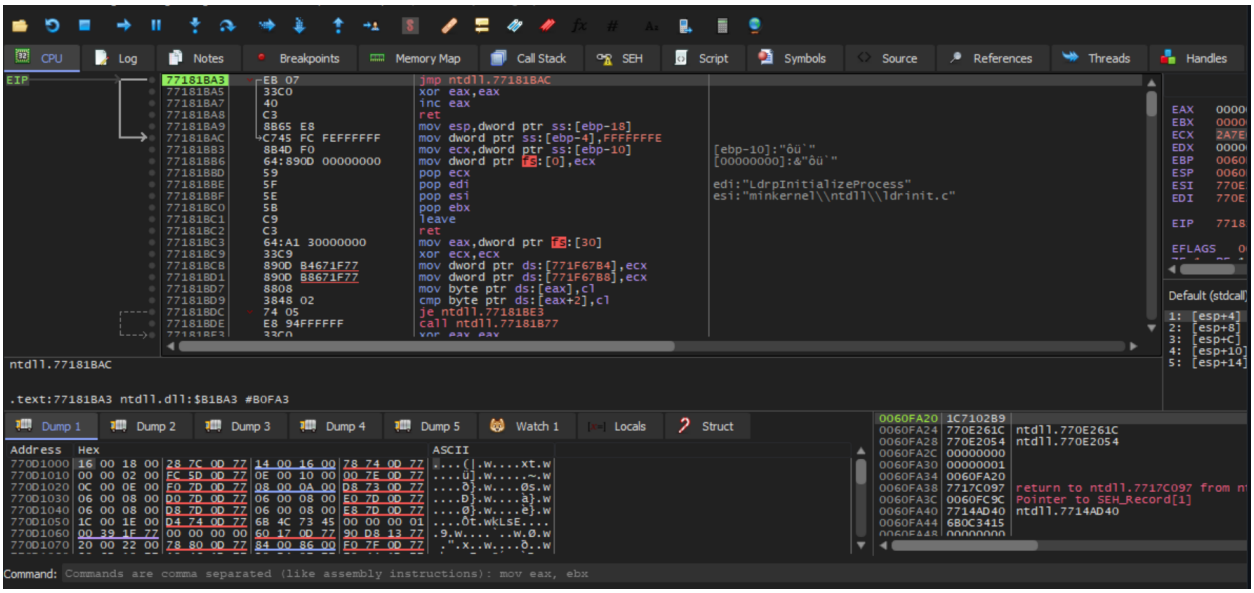
```
[0x004025c0]
 72: int main (char **argv);
 ; var int32_t var_bp_4h @ ebp-0x4
 ; var int32_t var_4h @ esp+0x14
 ; var int32_t var_8h @ esp+0x18
 ; var int32_t var_ch @ esp+0x1c
 ; arg char **argv @ esp+0x34
 lea     ecx, [argv]
 and     esp, 0xfffffff0
 push    dword [ecx - 4]
 push    ebp
 mov     ebp, esp
 push    ecx
 sub     esp, 0x14
 call    fcn.004015e0
 mov     eax, dword [section..data] ; 0x403000
 mov     dword [var_4h], 0
 mov     dword [var_ch], eax
 mov     eax, dword [0x4053d8]
 mov     dword [var_8h], eax
 mov     eax, dword [0x4053dc]
 mov     dword [esp], eax
 call    fcn.00401510
 mov     ecx, dword [var_bp_4h]
 sub     esp, 0x10
 leave
```

Decompiler (main)

```
/* jsdec pseudo code output */
/* C:\Users\Anya\Desktop\mscordll.exe @ 0x4025c0 */
#include <stdint.h>

int32_t main (char ** argv) {
    int32_t var_bp_4h;
    int32_t var_4h;
    int32_t var_8h;
    int32_t var_ch;
    ecx = &argv;
    fcn_004015e0 ();
    eax = *(section..data);
    var_4h = 0;
    var_ch = eax;
    eax = *(0x4053d8);
    var_8h = *(0x4053d8);
    eax = *(0x4053dc);
    *(esp) = eax;
    fcn_00401510 ();
    ecx = var_bp_4h;
    esp = ecx - 4;
    return eax;
}
```

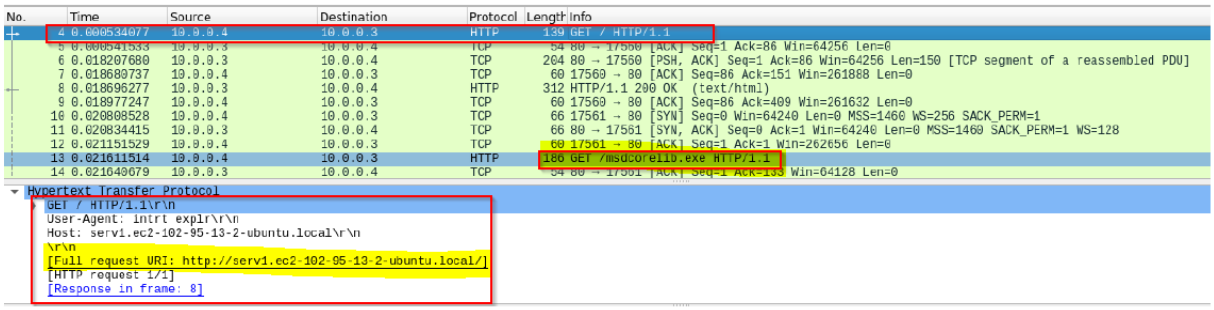
Advanced Dynamic Analysis



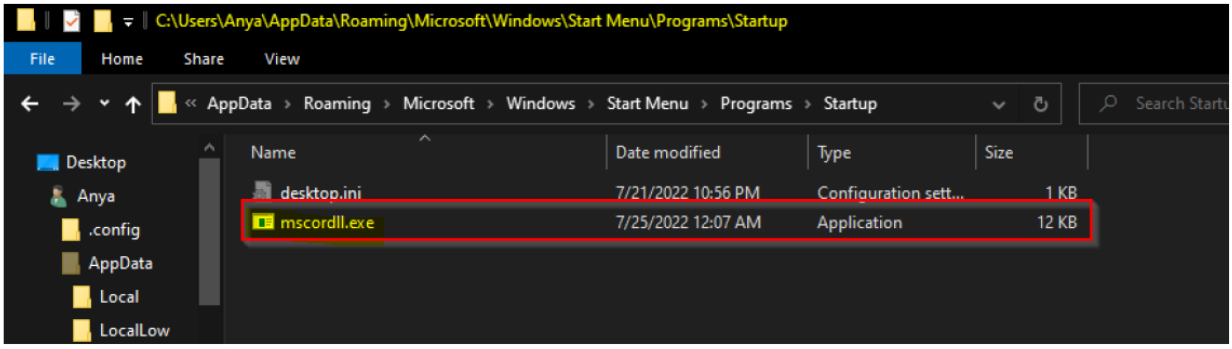
Indicators of Compromise

The full list of IOCs can be found in the Appendices.

Network Indicators



Host-based Indicators



Rules & Signatures

A full set of YARA rules is included in Appendix A.

```
rule Yara_RAT {

    meta:
        last_updated = "2022-08-22"
        author = "eyyys3c"
        description = "A sample Yara rule for PMAT RAT Malware"

    strings:
        // Fill out identifying strings and other criteria
        $string1 = "NO SOUP FOR YOU"
        $string2 = "nim"
        $PE_magic_byte = "MZ"

    condition:
        // Fill out the conditions that must be met to identify the binary
        $PE_magic_byte at 0 and
        ($string1 and $string2)

}
```

```
C:\Users\Anya\Desktop
λ yara32 yara_template.yara RAT.Unknown.exe -s -w -p 32
Yara_RAT RAT.Unknown.exe
0x18e10:$string1: NO SOUP FOR YOU
0x15e15:$string2: nim
0x15e4c:$string2: nim
0x1610e:$string2: nim
0x1659a:$string2: nim
0x16ad6:$string2: nim
0x16b55:$string2: nim
0x16e54:$string2: nim
0x16eb8:$string2: nim
0x16f8e:$string2: nim
0x16fba:$string2: nim
0x17357:$string2: nim
0x17477:$string2: nim
0x174f7:$string2: nim
0x1767a:$string2: nim
```

Appendices

A. Yara Rules

```
rule Yara_RAT {

    meta:
        last_updated = "2022-08-22"
        author = "eyyys3c"
        description = "A sample Yara rule for PMAT RAT Malware"

    strings:
        // Fill out identifying strings and other criteria
        $string1 = "NO SOUP FOR YOU"
        $string2 = "nim"
        $PE_magic_byte = "MZ"

    condition:
        // Fill out the conditions that must be met to identify the binary
        $PE_magic_byte at 0 and
        ($string1 and $string2)

}
```

B. Callback URLs

Domain	Port
hxxp://serv1.ec2-102-95-13-2-ubuntu.local/	80

C. Decompiled Code Snippets

Decompiler (main)

```
/* jsdec pseudo code output */
/* C:\Users\Anya\Desktop\mscordll.exe @ 0x4025c0 */
#include <stdint.h>

int32_t main (char ** argv) {
    int32_t var_bp_4h;
    int32_t var_4h;
    int32_t var_8h;
    int32_t var_ch;
    ecx = &argv;
    fcn_004015e0 ();
    eax = *(section..data);
    var_4h = 0;
    var_ch = eax;
    eax = *(0x4053d8);
    var_8h = *(0x4053d8);
    eax = *(0x4053dc);
    *(esp) = eax;
    fcn_00401510 ();
    ecx = var_bp_4h;
    esp = ecx - 4;
    return eax;
}
```