

Practical 6

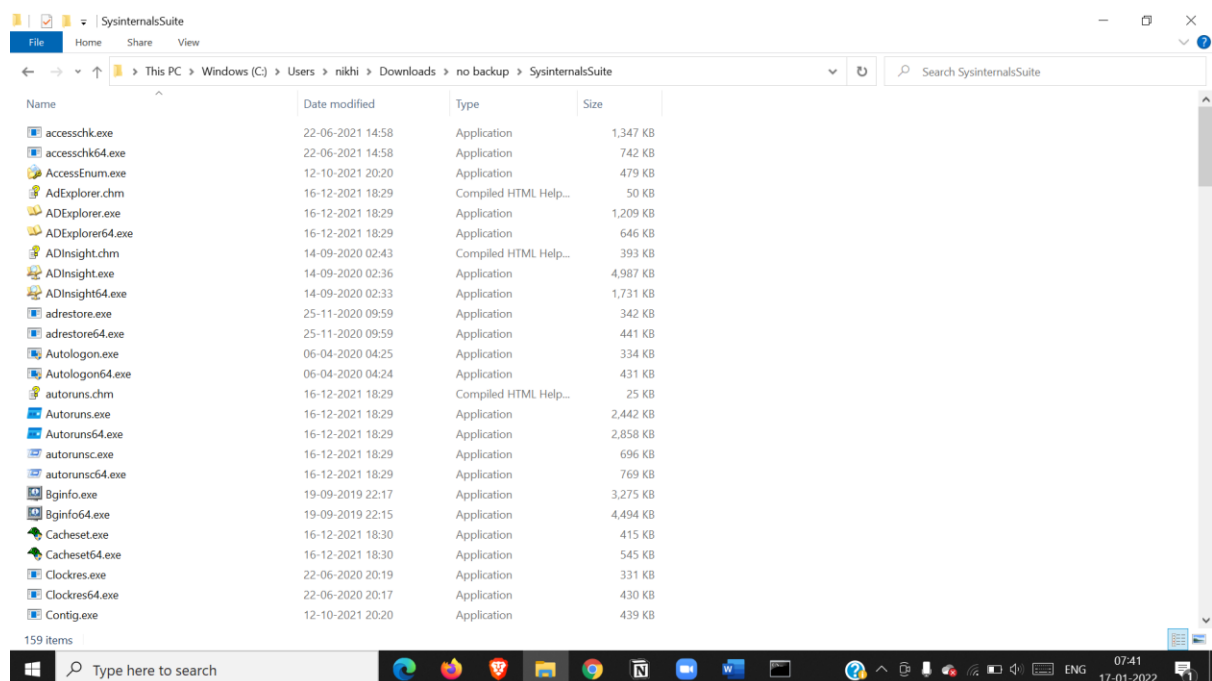
cf

AIM: Using Sysinternals tools for Network Tracking and Process Monitoring : - Check Sysinternals tools - Monitor Live Processes - Capture RAM - Capture TCP/UDP packets - Monitor Hard Disk - Monitor Virtual Memory - Monitor Cache Memory

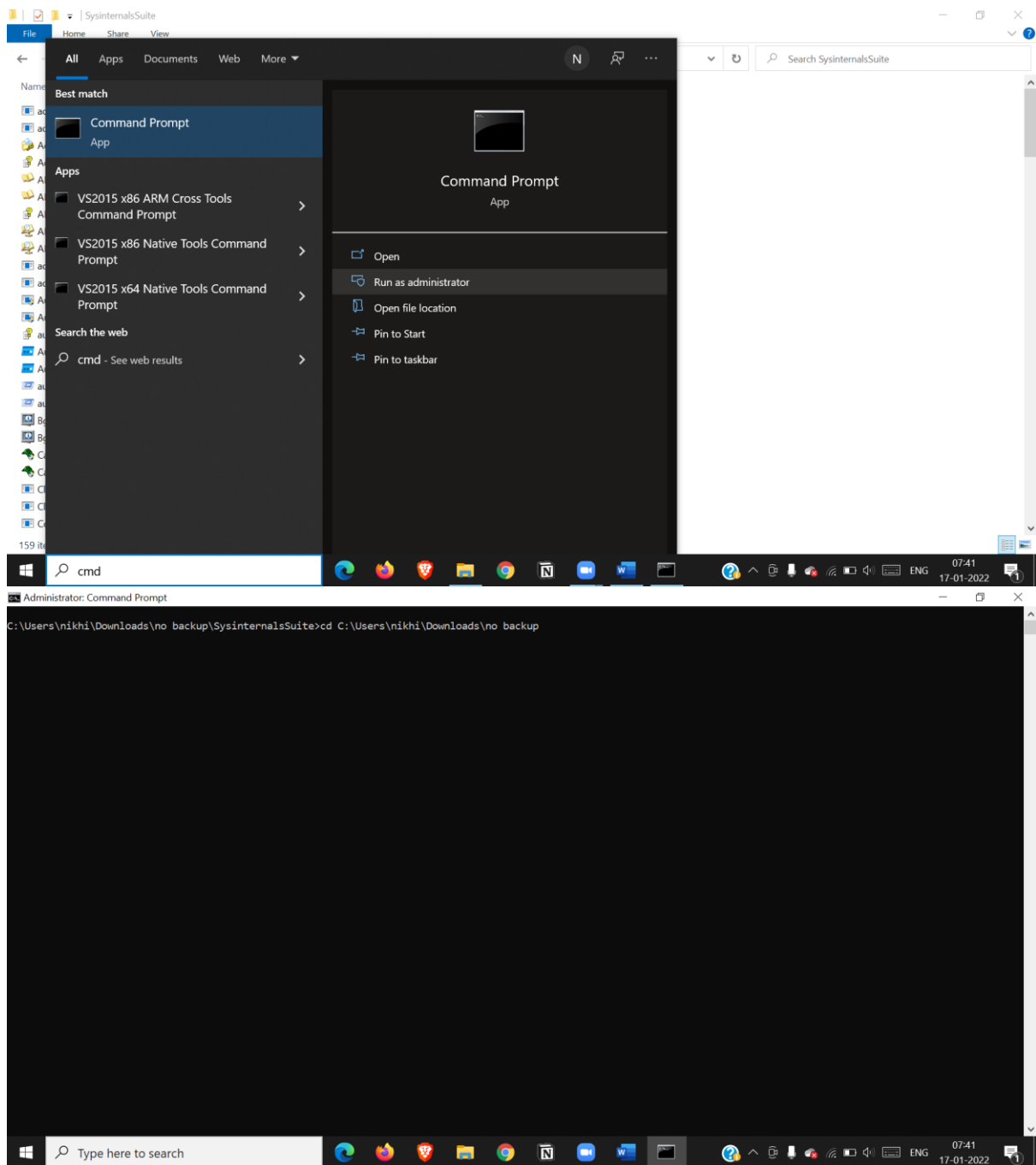
Sysinternal tools

The SysInternals suite of tools is simply a set of Windows applications that can be downloaded for free from their section of the Microsoft Technet web site. They are all portable, which means that not only do you not have to install them, you can stick them on a flash drive and use them from any PC

The Sysinternals tools are divided into six categories: File and Disk Utilities, Networking Utilities, Processes Utilities, Security Utilities, System Information and Miscellaneous Utilities. There are many tools, but the widely known are AutoRuns, Process Monitor, Process Explorer, TCPView and RootkitRevealer.



Practical 6 cf



Practical 6

cf

The screenshot displays a Windows desktop environment. At the top, a Command Prompt window is open, showing the command `C:\Users\nikhil\Downloads\no_backup\SysinternalsSuite>procmon`. Below it, the Process Monitor application is running, showing a list of events. The taskbar at the bottom includes the Start button, a search bar, and several pinned applications. The system tray shows the time as 07:42 on 17-01-2022.

Time	Process Name	PID	Operation	Path	Result	Detail
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3055616, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3530752, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2973696, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2879488, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2310144, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 839880, Le...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3346432, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1101824, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2048000, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2850816, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 344064, Le...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 4587520, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2740224, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2711552, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2738128, L...
07:42.2	svchost.exe	2888	LockFile	C:\ProgramData\Microsoft\WindowsApp...	SUCCESS	Exclusive: False, Of...
07:42.2	svchost.exe	2888	QueryStandardI...	C:\ProgramData\Microsoft\WindowsApp...	SUCCESS	AllocationSize: 524...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3010560, L...
07:42.2	svchost.exe	2888	QueryStandardI...	C:\ProgramData\Microsoft\WindowsApp...	SUCCESS	AllocationSize: 524...
07:42.2	svchost.exe	2888	ReadFile	C:\ProgramData\Microsoft\WindowsApp...	SUCCESS	Offset: 2093056, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2637824, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3387392, L...
07:42.2	svchost.exe	2888	UnlockFileSingle	C:\ProgramData\Microsoft\WindowsApp...	SUCCESS	Offset: 123, Length...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1261568, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2904176, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3321856, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1789952, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1044480, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1740800, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2473084, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2506752, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2486272, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2453504, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2502656, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2428928, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2510848, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2396160, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2400256, L...
07:42.2	svchost.exe	19540	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 4915200, L...

Practical 6

cf

Process Monitor - Sysinternals: www.sysinternals.com

File Edit Event Filter Tools Options Help

System Details...

Process Tree... Ctrl+T

Process Activity Summary...

File Summary...

Registry Summary...

Stack Summary...

Network Summary...

Cross Reference Summary...

Count Occurrences...

Time	Process Name	Operation	Path	Result	Detail
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3055616, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3530752, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2973696, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2879488, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2310144, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 836980, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3346432, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1101824, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2048000, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2850816, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 344064, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 4587520, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2740224, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2711552, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2736128, L...
07:42.2	svchost.exe	LockFile	C:\ProgramData\Microsoft\Windows\App...	SUCCESS	Exclusive: False, Of...
07:42.2	svchost.exe	QueryStandar...	C:\ProgramData\Microsoft\Windows\App...	SUCCESS	AllocationSize: 524...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3010560, L...
07:42.2	svchost.exe	QueryStandar...	C:\ProgramData\Microsoft\Windows\App...	SUCCESS	AllocationSize: 524...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2093056, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2637824, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3387392, L...
07:42.2	svchost.exe	UnlockFileSingle	C:\ProgramData\Microsoft\Windows\App...	SUCCESS	Offset: 123, Length...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1261568, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2994176, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 3321856, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1789952, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1044480, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 1740800, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2473984, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2506752, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2486272, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2453504, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2502656, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2428928, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2510848, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2396160, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 2400256, L...
07:42.2	svchost.exe	ReadFile	C:\Users\nikhil\AppData\Local\Connect...	SUCCESS	Offset: 4915200, L...

Show Process Tree

Type here to search

Process Tree

☐ Only show processes still running at end of current trace

☒ Timelines cover displayed events only

Process	Description	Image Path	Life Time	Company	Owner	Command	Start Time	End Time
Idle (0)	Idle						15-01-2022 19:44	n/a
System (4)	System	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
Registry (148)	Registry	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
smss.exe (616)	Windows Session	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
MemCompression (3716)	MemCompression	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
csrss.exe (500)	Client Server Runti...	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
wininit.exe (836)	Windows Start-Up	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
services.exe (1088)	Services and Contr...	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
svchost.exe (1296)	Host Process for ...	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
wmiiprvse.exe (3864)	WMI Provider Host	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
wmiiprvse.exe (5708)	WMI Provider Host	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
unsecapp.exe (5040)	Sink to receive asy...	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
DLH-Host.exe (8608)	COM Surrogate	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 19:44	n/a
moucoreworker.exe (1565)	MoUSO Core Wor...	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	15-01-2022 20:58	n/a
SettingSyncHost.exe (2304)	Host Process for S...	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	17-01-2022 07:16	n/a
StartMenuExperienceHost.exe		C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	17-01-2022 07:17	n/a
RuntimeBroker.exe (15552)	Runtime Broker	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	17-01-2022 07:17	n/a
SearchApp.exe (23284)	Search application	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	17-01-2022 07:17	n/a
RuntimeBroker.exe (17748)	Runtime Broker	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	17-01-2022 07:17	n/a
YourPhone.exe (16128)	YourPhone	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	17-01-2022 07:17	n/a
RuntimeBroker.exe (8272)	Runtime Broker	C:\Windows\System32\smss.exe		Microsoft Corporati...	NT AUTHORITY\SYSTEM	%SystemRoot%\SystemRoot\System32\smss.exe	17-01-2022 07:17	n/a

Description:

Company:

Path: Idle

Command:

User:

PID: 0 Started: 15-01-2022 19:44:25

Go To Event Include Process Include Subtree

Close

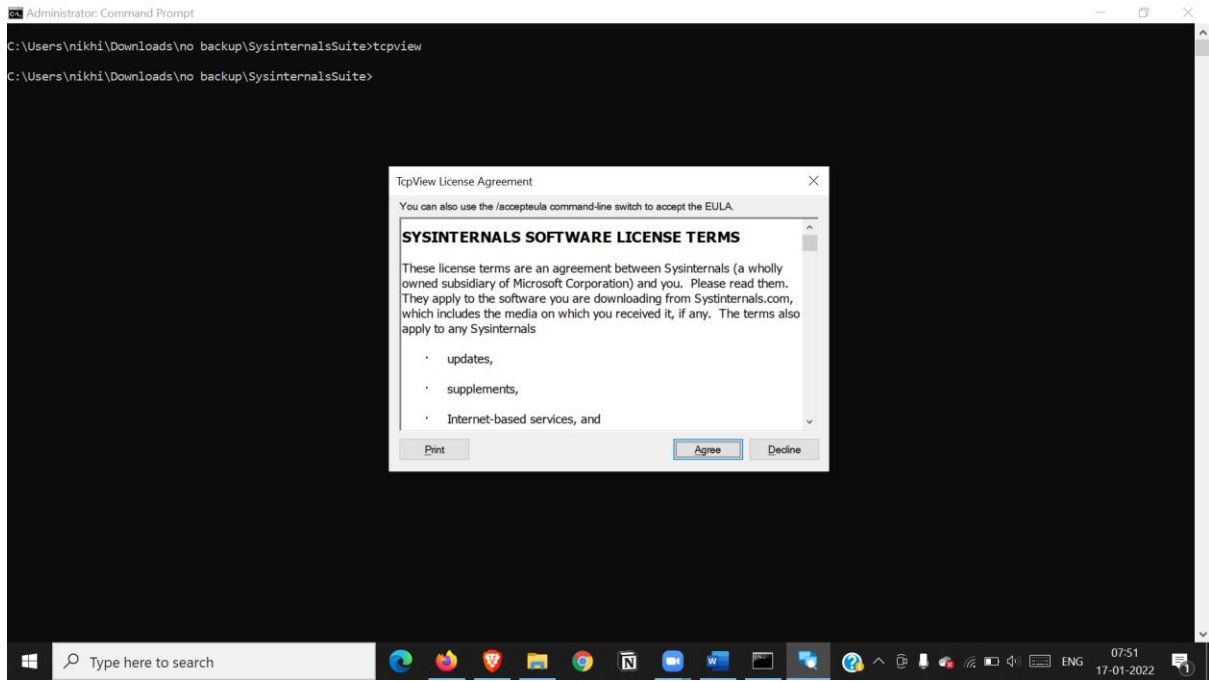
Type here to search

07:44 17-01-2022

Practical 6

cf

Tcp-udp packets



Administrator: Command Prompt

```
C:\Users\nikhil\Downloads\no_backup\SysinternalsSuite>tcpview
C:\Users\nikhil\Downloads\no_backup\SysinternalsSuite>
```

TcpView License Agreement

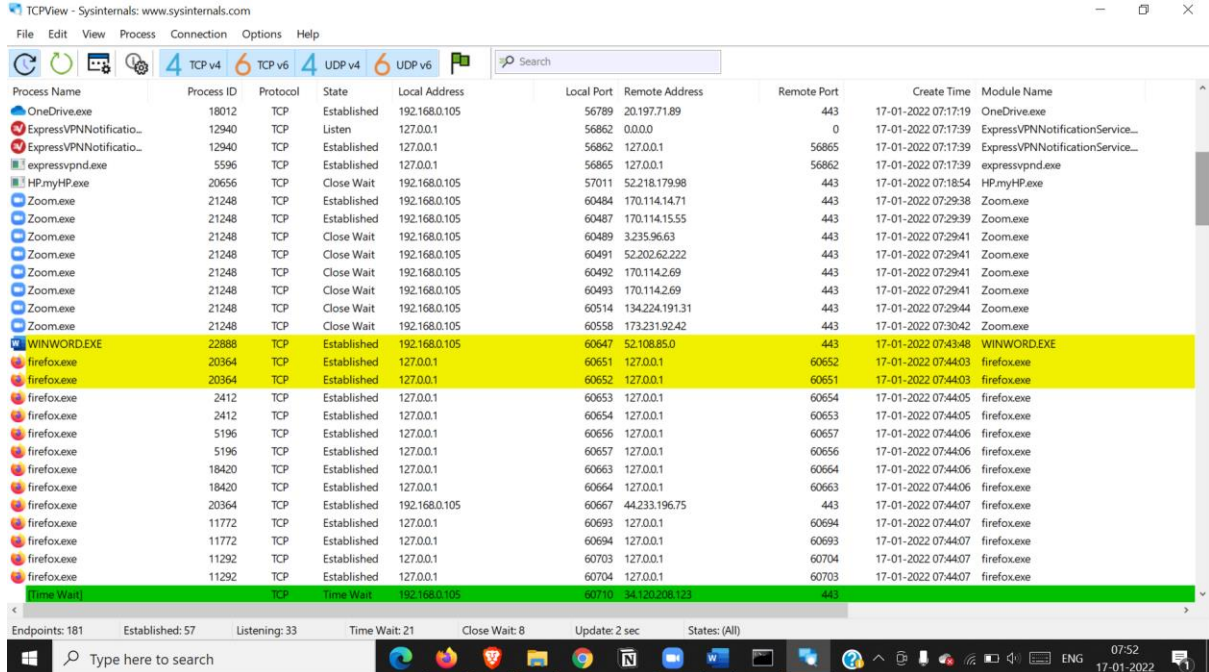
You can also use the /accepteula command-line switch to accept the EULA.

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TCPView - Sysinternals: www.sysinternals.com

File Edit View Process Connection Options Help

4 TCP v4 6 TCP v6 4 UDP v4 6 UDP v6 Search

Process Name	Process ID	Protocol	State	Local Address	Local Port	Remote Address	Remote Port	Create Time	Module Name
OneDrive.exe	18012	TCP	Established	192.168.0.105	56789	20.197.71.89	443	17-01-2022 07:17:19	OneDrive.exe
ExpressVPNNotification...	12940	TCP	Listen	127.0.0.1	56862	0.0.0.0	0	17-01-2022 07:17:39	ExpressVPNNotificationService...
ExpressVPNNotification...	12940	TCP	Established	127.0.0.1	56862	127.0.0.1	56865	17-01-2022 07:17:39	ExpressVPNNotificationService...
expressvpnd.exe	5596	TCP	Established	127.0.0.1	56865	127.0.0.1	56862	17-01-2022 07:17:39	expressvpnd.exe
HPmyHP.exe	20656	TCP	Close Wait	192.168.0.105	57011	52.218.179.98	443	17-01-2022 07:18:54	HPmyHP.exe
Zoom.exe	21248	TCP	Established	192.168.0.105	60484	170.114.14.71	443	17-01-2022 07:29:38	Zoom.exe
Zoom.exe	21248	TCP	Established	192.168.0.105	60487	170.114.15.55	443	17-01-2022 07:29:39	Zoom.exe
Zoom.exe	21248	TCP	Close Wait	192.168.0.105	60489	3.235.96.63	443	17-01-2022 07:29:41	Zoom.exe
Zoom.exe	21248	TCP	Close Wait	192.168.0.105	60491	52.202.62.222	443	17-01-2022 07:29:41	Zoom.exe
Zoom.exe	21248	TCP	Close Wait	192.168.0.105	60492	170.114.2.69	443	17-01-2022 07:29:41	Zoom.exe
Zoom.exe	21248	TCP	Close Wait	192.168.0.105	60493	170.114.2.69	443	17-01-2022 07:29:41	Zoom.exe
Zoom.exe	21248	TCP	Close Wait	192.168.0.105	60514	134.224.191.31	443	17-01-2022 07:29:44	Zoom.exe
Zoom.exe	21248	TCP	Close Wait	192.168.0.105	60558	173.231.92.42	443	17-01-2022 07:30:42	Zoom.exe
WINWORD.EXE	22888	TCP	Established	192.168.0.105	60647	52.108.85.0	443	17-01-2022 07:43:48	WINWORD.EXE
firefox.exe	20364	TCP	Established	127.0.0.1	60651	127.0.0.1	60652	17-01-2022 07:44:03	firefox.exe
firefox.exe	20364	TCP	Established	127.0.0.1	60652	127.0.0.1	60651	17-01-2022 07:44:03	firefox.exe
firefox.exe	2412	TCP	Established	127.0.0.1	60653	127.0.0.1	60654	17-01-2022 07:44:05	firefox.exe
firefox.exe	2412	TCP	Established	127.0.0.1	60654	127.0.0.1	60653	17-01-2022 07:44:05	firefox.exe
firefox.exe	5196	TCP	Established	127.0.0.1	60656	127.0.0.1	60657	17-01-2022 07:44:06	firefox.exe
firefox.exe	5196	TCP	Established	127.0.0.1	60657	127.0.0.1	60656	17-01-2022 07:44:06	firefox.exe
firefox.exe	18420	TCP	Established	127.0.0.1	60663	127.0.0.1	60664	17-01-2022 07:44:06	firefox.exe
firefox.exe	18420	TCP	Established	127.0.0.1	60664	127.0.0.1	60663	17-01-2022 07:44:06	firefox.exe
firefox.exe	20364	TCP	Established	192.168.0.105	60667	44.233.196.75	443	17-01-2022 07:44:07	firefox.exe
firefox.exe	11772	TCP	Established	127.0.0.1	60693	127.0.0.1	60694	17-01-2022 07:44:07	firefox.exe
firefox.exe	11772	TCP	Established	127.0.0.1	60694	127.0.0.1	60693	17-01-2022 07:44:07	firefox.exe
firefox.exe	11292	TCP	Established	127.0.0.1	60703	127.0.0.1	60704	17-01-2022 07:44:07	firefox.exe
firefox.exe	11292	TCP	Established	127.0.0.1	60704	127.0.0.1	60703	17-01-2022 07:44:07	firefox.exe
[Time Wait]		TCP	Time Wait	192.168.0.105	60710	34.120.208.123	443		

Endpoints: 181 Established: 57 Listening: 33 Time Wait: 21 Close Wait: 8 Update: 2 sec States: (All)

Practical 6

cf

TCPView - Sysinternals: www.sysinternals.com

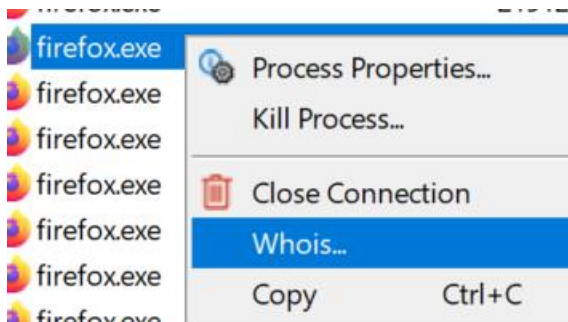
File Edit View Process Connection Options Help

4 TCP v4 6 TCP v6 4 UDP v4 6 UDP v6

Search

Process Name	Process ID	Protocol	State	Local Address	Local Port	Remote Address	Remote Port	Create Time	Module Name
svchost.exe	11752	UDP		192.168.140.1	62421	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	11752	UDP		192.168.0.105	62422	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	11752	UDP		127.0.0.1	62423	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	5160	UDP		127.0.0.1	62789	*	*	15-01-2022 19:44:36	iphlpvc
svchost.exe	4996	UDPv6		::	500	*	*	15-01-2022 19:44:36	IKEEXT
svchost.exe	11752	UDPv6		::1	1900	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	11752	UDPv6		fe80:3c2db07fd8b7c1	1900	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	11752	UDPv6		fe80:3c2db07fd8b7c1	1900	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	11752	UDPv6		fe80:3c2db07fd8b7c1	1900	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	2012	UDPv6		::	3702	*	*	17-01-2022 07:18:45	FDResPub
svchost.exe	2012	UDPv6		::	3702	*	*	17-01-2022 07:18:45	FDResPub
svchost.exe	4996	UDPv6		::	4500	*	*	15-01-2022 19:44:36	IKEEXT
svchost.exe	2628	UDPv6		::	5353	*	*	17-01-2022 07:16:57	Dnscache
TeamViewer_Service.exe	5328	UDPv6		fe80:3c2db07fd8b7c1	5353	*	*	15-01-2022 19:44:39	TeamViewer
TeamViewer_Service.exe	5328	UDPv6		fe80:3c2db07fd8b7c1	5353	*	*	15-01-2022 19:44:39	TeamViewer
svchost.exe	2628	UDPv6		::	5355	*	*	17-01-2022 07:47:08	Dnscache
TeamViewer_Service.exe	5328	UDPv6		::	49682	*	*	15-01-2022 19:44:39	TeamViewer
svchost.exe	2012	UDPv6		::	60093	*	*	15-01-2022 20:38:02	FDResPub
svchost.exe	11752	UDPv6		fe80:c8c93c53f659170	62416	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	11752	UDPv6		fe80:3c2db07fd8b7c1	62417	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	11752	UDPv6		fe80:c1ae6da0af24c1d7	62418	*	*	17-01-2022 07:16:55	SSDPsrv
svchost.exe	11752	UDPv6		::1	62419	*	*	17-01-2022 07:16:55	SSDPsrv
brave.exe	21308	TCP	Syn Sent	127.0.0.1	61780	127.0.0.1	3500	17-01-2022 07:56:44	brave.exe
brave.exe	21308	TCP	Syn Sent	127.0.0.1	61781	127.0.0.1	3500	17-01-2022 07:56:45	brave.exe
brave.exe	21308	TCP	Syn Sent	127.0.0.1	61783	127.0.0.1	3500	17-01-2022 07:56:46	brave.exe
brave.exe	21308	TCP	Syn Sent	127.0.0.1	61785	127.0.0.1	50000	17-01-2022 07:56:46	brave.exe
brave.exe	21308	TCPv6	Syn Sent	::1	61782	::1	50000	17-01-2022 07:56:46	brave.exe
brave.exe	21308	TCPv6	Syn Sent	::1	61784	::1	3500	17-01-2022 07:56:46	brave.exe

Endpoints: 133 Established: 20 Listening: 33 Time Wait: 15 Close Wait: 5 Update: 2 sec States: (All)



Whois: server-13-227-165-134.bom51.r.cloudfront.net

Domain Name: CLOUDFRONT.NET

Registry Domain ID: 1457834866_DOMAIN_NET-VRSN

Registrar WHOIS Server: whois.markmonitor.com

Registrar URL: http://www.markmonitor.com

Updated Date: 2019-05-07T23:07:15Z

Creation Date: 2008-04-25T18:25:49Z

Registry Expiry Date: 2024-04-25T18:25:49Z

Registrar: MarkMonitor Inc.

Registrar IANA ID: 292

Registrar Abuse Contact Email: abusecomplaints@markmonitor.com

Registrar Abuse Contact Phone: +1.2083895740

Domain Status: clientDeleteProhibited <https://icann.org/epp#clientDeleteProhibited>

Domain Status: clientTransferProhibited <https://icann.org/epp#clientTransferProhibited>

Domain Status: clientUpdateProhibited <https://icann.org/epp#clientUpdateProhibited>

Domain Status: serverDeleteProhibited <https://icann.org/epp#serverDeleteProhibited>

Domain Status: serverTransferProhibited <https://icann.org/epp#serverTransferProhibited>

Domain Status: serverUpdateProhibited <https://icann.org/epp#serverUpdateProhibited>

Name Server: NS-1306.AWSDNS-35.ORG

Name Server: NS-1597.AWSDNS-07.CO.UK

Name Server: NS-418.AWSDNS-52.COM

Name Server: NS-666.AWSDNS-19.NET

DNSSEC: unsigned

Copy

OK

Practical 6 cf

Diskmonitoring

The screenshot shows a Windows 10 desktop environment. In the background, a Command Prompt window is open, displaying the following commands and output:

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19042.1466]
(c) Microsoft Corporation. All rights reserved.

C:\windows\system32>cd C:\Users\nikhil\Downloads\no_backup\SysinternalsSuite
C:\Users\nikhil\Downloads\no_backup\SysinternalsSuite>diskmon
C:\Users\nikhil\Downloads\no_backup\SysinternalsSuite>
```

In the foreground, a "Diskmon License Agreement" dialog box is displayed. It contains the following text:

You can also use the /accepteula command-line switch to accept the EULA.

SYSINTERNALS SOFTWARE LICENSE TERMS

These license terms are an agreement between Sysinternals (a wholly owned subsidiary of Microsoft Corporation) and you. Please read them. They apply to the software you are downloading from Sysinternals.com, which includes the media on which you received it, if any. The terms also apply to any Sysinternals

- updates,
- supplements,
- Internet-based services, and

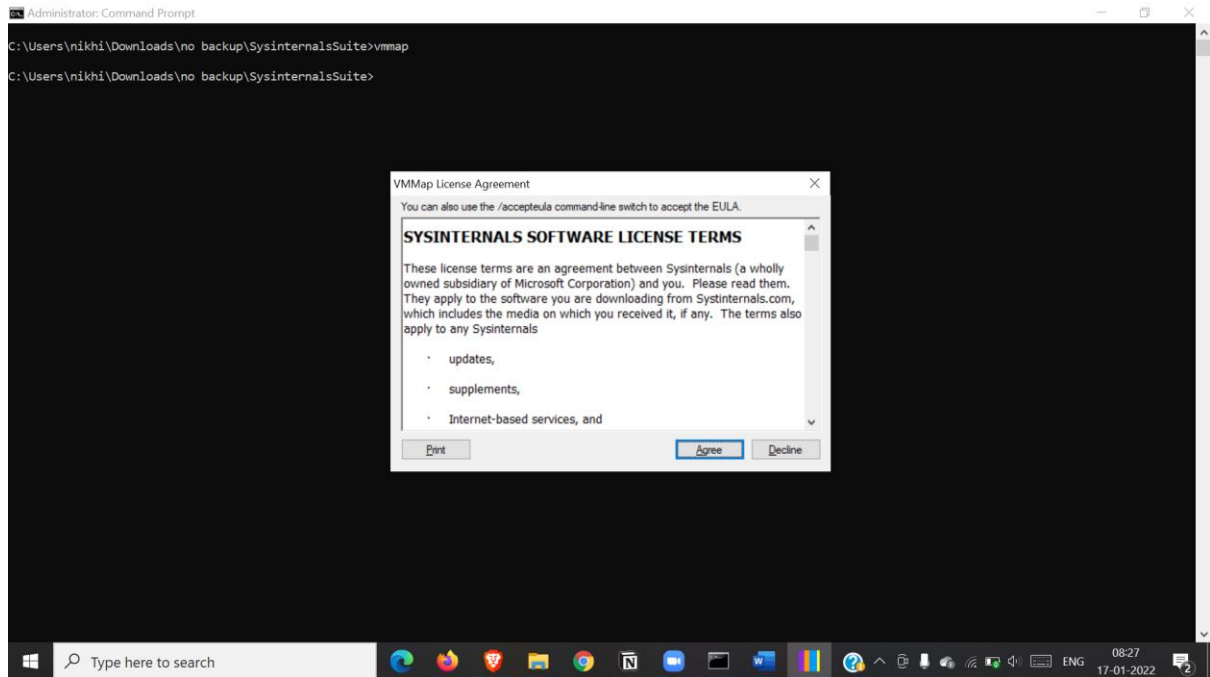
The dialog box has "Print", "Agree", and "Decline" buttons. The "Agree" button is highlighted.

Below the dialog box, the "Disk Monitor - Sysinternals: www.sysinternals.com" application window is open. It displays a table of disk activity data. The table has the following columns: #, Time, Duration (s), Disk, Request, Sector, and Length. The data is as follows:

#	Time	Duration (s)	Disk	Request	Sector	Length
31	0.635766	0.00000000	0	Write	6723848	16
32	0.635921	0.00000000	0	Write	88388956	40
33	0.636108	0.00000000	0	Write	6723984	8
34	0.665266	0.00000000	0	Write	34796448	8
35	1.317657	0.00000000	0	Read	26177600	32
36	1.320517	0.00000000	0	Read	26177528	8
37	1.919460	0.00000000	0	Write	85504080	16
38	1.919659	0.00000000	0	Write	82457880	264
39	1.919824	0.00000000	0	Write	54434728	240
40	1.919914	0.00000000	0	Write	119003752	80
41	2.233370	0.00000000	0	Read	244494040	8
42	2.251387	0.00000000	0	Read	244494832	8
43	2.667375	0.00000000	0	Read	232888666	64
44	3.054582	0.00000000	0	Read	19604824	16
45	3.074780	0.00000000	0	Read	9062048	16
46	3.081691	0.00000000	0	Read	203043464	56
47	3.083516	0.00000000	0	Read	195723293	24
48	3.083797	0.00000000	0	Read	194842034	32
49	3.281178	0.00000000	0	Write	10054008	8
50	3.281272	0.00000000	0	Write	130835608	48
51	3.281734	0.00000000	0	Write	3638528	8
52	3.282087	0.00000000	0	Write	154181656	8
53	3.282354	0.00000000	0	Write	6831848	16
54	3.282491	0.00000000	0	Write	6723848	48
55	3.283485	0.00000000	0	Write	98993456	16
56	3.283617	0.00000000	0	Write	188324304	8
57	3.283736	0.00000000	0	Write	188359864	8
58	3.283851	0.00000000	0	Write	206836384	8
59	3.283969	0.00000000	0	Write	206880624	16
60	3.284083	0.00000000	0	Write	206882024	8
61	3.284209	0.00000000	0	Write	206882616	16
62	3.284324	0.00000000	0	Write	6850760	8
63	3.284436	0.00000000	0	Write	6859636	8
64	3.284546	0.00000000	0	Write	6862304	8
65	3.284656	0.00000000	0	Write	6868144	8
66	3.284775	0.00000000	0	Write	6869432	8

Practical 6 cf

Virtual memory map



Practical 6

cf

The screenshot displays the VMMap - Sysinternals application. A dialog box titled "Select or Launch Process" is open, showing a list of running processes. The process "brave.exe" with PID 22704 is selected. The background shows the VMMap interface with memory usage details for the selected process.

Process Details:

- Process: brave.exe
- PID: 22704
- Committed: 7,22,064 K
- Private Bytes: 2,05,960 K
- Working Set: 1,99,276 K

Memory Usage Table:

Type	Size	Committed	Private	Total WS	Private WS	Shareable	Shared WS	Locked WS	Blocks	Largest
Total	2,20,29,30...	7,22,064 K	2,05,960 K	1,99,276 K	1,06,292 K	92,984 K	58,568 K		3420	
Free	1,35,23,60...								121	72,99,92,34...
Heap	1,15,872 K	1,07,552 K	1,07,488 K	47,504 K	47,500 K	4 K	4 K		444	16,192 K
Image	2,96,748 K	2,96,748 K	5,984 K	81,272 K	3,056 K	78,216 K	52,432 K		734	1,72,788 K
Managed Hea										
Mapped File	1,51,348 K	1,51,348 K		10,736 K		10,736 K	2,524 K		67	35,296 K
Page Table										
Private Data	5,45,93,864	91,996 K	91,712 K	55,372 K	55,352 K	20 K	20 K		1842	83,88,672 K
Shareable	2,14,75,42...	73,644 K		4,032 K	24 K	4,008 K	3,588 K		252	2,14,74,83...
Stack	2,21,184 K	776 K	776 K	360 K	360 K				81	8,192 K
Unusable	9,528 K									60 K

Memory Usage Table (Continued):

Address	Type	Size	Com	Private	Total	Priva	Shar	Sh	Loc	Pro	Details
+000000007F	Private Data	4 K	4 K	4 K	4 K	4 K	4 K			1 Read	
+000000007F	Private Data	4 K	4 K	4 K	4 K	4 K	4 K			1 Read	
+0000000E20	Private Data	2,04...	220 K	220 K	220 K	220 K				26 ReadWrite	Thread Environment Block
+0000000E20	Thread Stack	8,19...	88 K	88 K	64 K	64 K				3 ReadWrite/Gu...	Thread ID: 6140
+0000000E20	Thread Stack	8,19...	24 K	24 K	12 K	12 K				3 ReadWrite/Gu...	Thread ID: 11900
+0000000E21	Thread Stack	8,19...	36 K	36 K	24 K	24 K				3 ReadWrite/Gu...	Thread ID: 7076
+0000000E22	Thread Stack	8,19...	24 K	24 K	12 K	12 K				3 ReadWrite/Gu...	Thread ID: 20716
+0000000E22	Thread Stack	8,19...	20 K	20 K						3 ReadWrite/Gu...	Thread ID: 14648
+0000000E23	Thread Stack	8,19...	20 K	20 K	8 K	8 K				3 ReadWrite/Gu...	Thread ID: 11768
+0000000E23	Thread Stack	8,19...	20 K	20 K	4 K	4 K				3 ReadWrite/Gu...	Thread ID: 12660
+0000000E24	Thread Stack	8,19...	20 K	20 K	8 K	8 K				3 ReadWrite/Gu...	Thread ID: 9308
+0000000E24	Thread Stack	8,19...	36 K	36 K	12 K	12 K				3 ReadWrite/Gu...	Thread ID: 1824
+0000000E25	Thread Stack	8,19...	48 K	48 K	36 K	36 K				3 ReadWrite/Gu...	Thread ID: 3068
+0000000E25	Thread Stack	8,19...	24 K	24 K	12 K	12 K				3 ReadWrite/Gu...	Thread ID: 19332

Practical 6 cf

Rammap

The screenshot shows a Windows desktop environment. At the top, an Administrator Command Prompt window is open, displaying the command `C:\Users\nikhil\Downloads\no_backup\SysinternalsSuite>rammap` and the subsequent prompt `C:\Users\nikhil\Downloads\no_backup\SysinternalsSuite>`. A "RamMap License Agreement" dialog box is overlaid on the command prompt. The dialog contains the text: "You can also use the /accepteula command-line switch to accept the EULA." followed by "SYSINTERNALS SOFTWARE LICENSE TERMS". It states that these terms are an agreement between Sysinternals (a wholly owned subsidiary of Microsoft Corporation) and the user. It lists that the terms apply to updates, supplements, and Internet-based services. At the bottom of the dialog are "Print", "Agree", and "Decline" buttons. Below the dialog, the Windows taskbar is visible with various application icons. The bottom window is the "RamMap - Sysinternals: www.sysinternals.com" application. It has a menu bar with "File", "Empty", "Settings", and "Help". Below the menu bar are tabs for "Use Counts", "Processes", "Priority Summary", "Physical Pages", "Physical Ranges", "File Summary", and "File Details". The "Use Counts" tab is active, showing a large horizontal bar chart at the top and a table below. The table has columns for Usage, Total, Active, Standby, Modified, Modified ..., Transition, Zeroed, Free, and Bad. The data is as follows:

Usage	Total	Active	Standby	Modified	Modified ...	Transition	Zeroed	Free	Bad
Process Private	37,60,248 K	34,81,636 K	2,47,372 K	31,200 K		40 K			
Mapped File	21,01,024 K	10,94,360 K	10,06,644 K	20 K					
Shareable	3,31,272 K	1,32,764 K	75,728 K	1,22,780 K					
Page Table	1,72,356 K	1,72,356 K							
Paged Pool	3,26,704 K	3,26,700 K	4 K						
Nonpaged Pool	4,50,812 K	4,50,812 K							
System PTE	1,76,240 K	1,76,240 K							
Session Private	59,324 K	59,324 K							
Metafile	1,95,536 K	1,11,232 K	84,300 K		4 K				
AWE									
Driver Locked	17,028 K	17,028 K							
Kernel Stack	77,628 K	77,188 K	420 K	20 K					
Unused	33,424 K	17,160 K	420 K					15,844 K	
Large Page									
Total	77,01,596 K	61,16,800 K	14,14,888 K	1,54,020 K	4 K	40 K		15,844 K	

Practical 6

cf

The screenshot displays the RamMap application interface, which is used for analyzing memory usage. The top window shows the 'Processes' tab, listing various system and user processes along with their session IDs, PIDs, and memory usage statistics. The bottom window shows the 'Priority Summary' tab, which provides a breakdown of memory usage by priority level.

Process	Session	PID	Private	Standby	Modified	Page Table	Total
System	-1	4	0 K	0 K	0 K	76 K	76 K
Registry	-1	148	9,188 K	0 K	0 K	312 K	9,500 K
svchost.exe	6	14520	6,248 K	16 K	0 K	724 K	6,988 K
chrome.exe	5	7580	0 K	0 K	0 K	40 K	40 K
Zoom.exe	6	21248	19,060 K	31,640 K	0 K	960 K	51,660 K
explorer.exe	1	4536	0 K	0 K	0 K	28 K	28 K
svchost.exe	0	4528	320 K	148 K	0 K	280 K	748 K
zCefAgent.exe	6	5556	6,496 K	0 K	0 K	808 K	7,304 K
smss.exe	-1	616	96 K	40 K	0 K	152 K	288 K
Notion.exe	2	14380	0 K	0 K	0 K	32 K	32 K
taskhostw.exe	1	2652	0 K	0 K	0 K	32 K	32 K
svchost.exe	0	5392	2,048 K	264 K	260 K	508 K	3,080 K
ctfmon.exe	1	5316	0 K	0 K	0 K	32 K	32 K
SearchApp.exe	6	23284	388 K	63,268 K	0 K	1,868 K	65,524 K
HPAudioSwitch...	6	22164	8,460 K	0 K	0 K	712 K	9,172 K
BridgeComm...	3	23032	0 K	0 K	0 K	32 K	32 K
svchost.exe	0	10924	0 K	0 K	0 K	32 K	32 K
userinit.exe	1	3508	0 K	0 K	0 K	32 K	32 K
SecurityHealth	0	13644	1,816 K	1,792 K	0 K	400 K	4,008 K
shost.exe	1	10816	0 K	0 K	0 K	32 K	32 K
svchost.exe	1	10864	0 K	0 K	0 K	32 K	32 K
OobeHook.exe	1	10624	0 K	0 K	0 K	32 K	32 K
svchost.exe	1	11164	0 K	0 K	0 K	32 K	32 K
svchost.exe	0	10804	0 K	0 K	0 K	32 K	32 K
uhost.exe	1	11168	0 K	0 K	0 K	32 K	32 K
RuntimeBroker...	6	17748	11,652 K	0 K	0 K	856 K	12,508 K
BridgeComm...	4	11856	0 K	0 K	0 K	32 K	32 K
StartMenuEx...	6	6684	15,680 K	0 K	196 K	1,020 K	16,896 K
uhost.exe	5	21356	0 K	0 K	0 K	32 K	32 K
ShellExperienc	1	13808	0 K	0 K	0 K	32 K	32 K
smss.exe	0	856	0 K	0 K	0 K	32 K	32 K

Priority	Standby	Repurposed
0	57,980 K	1,04,03,940 K
1	108 K	48,08,904 K
2	1,448 K	45,13,100 K
3	0 K	23,756 K
4	35,772 K	53,54,196 K
5	11,96,252 K	1,80,39,572 K
6	3,224 K	0 K
7	1,30,540 K	0 K
Total	14,25,324 K	4,31,43,468 K

Practical 6 cf

The image displays two screenshots of the RamMap application, a system utility for monitoring memory usage. The top screenshot shows the 'Physical Pages' tab, which lists memory pages and their status. The bottom screenshot shows the 'Physical Ranges' tab, which displays memory ranges and their sizes.

Top Screenshot: Physical Pages

Physical Address	List	Use	Priority	Image	Offset	File Name	Process	Virtual Address
0x1000	Active	Nonpaged ...	0					0xFFFFF7F680007000
0x2000	Active	Driver Locked	0					
0x3000	Active	Driver Locked	0					
0x4000	Active	Driver Locked	0					
0x5000	Active	Driver Locked	0					
0x6000	Active	Driver Locked	0					
0x7000	Active	Driver Locked	0					
0x8000	Active	Driver Locked	0					
0x9000	Active	Driver Locked	0					
0xA000	Active	Driver Locked	0					
0xB000	Active	Driver Locked	0					
0xC000	Active	Driver Locked	0					
0xD000	Active	Driver Locked	0					
0xE000	Active	Driver Locked	0					
0xF000	Active	Driver Locked	0					
0x10000	Active	Driver Locked	0					
0x11000	Active	Driver Locked	0					
0x12000	Active	Driver Locked	0					
0x13000	Active	Driver Locked	0					
0x14000	Active	Driver Locked	0					
0x15000	Active	Driver Locked	0					
0x16000	Active	Driver Locked	0					
0x17000	Active	Driver Locked	0					
0x18000	Active	Driver Locked	0					
0x19000	Active	Driver Locked	0					
0x1A000	Active	Driver Locked	0					
0x1B000	Active	Driver Locked	0					
0x1C000	Active	Driver Locked	0					

Bottom Screenshot: Physical Ranges

Start	End	Size
0x1000	0xA0000	636 K
0x100000	0x9EF0000	1,61,728 K
0xA001000	0xA200000	2,044 K
0xA20C000	0xC5F53000	30,77,404 K
0xC5FFE000	0xCE000000	16,392 K
0x100000000	0x20F340000	44,43,392 K
Total		77,01,596 K

Practical 6 cf

RamMap - Sysinternals: www.sysinternals.com

File Empty Settings Help

Use Counts Processes Priority Summary Physical Pages Physical Ranges File Summary File Details

Path	Total	Standby	Modified	Modified No-Write	Active
C:\windows\system32\chakra.dll	1,920 K	1,920 K			
C:\program files\bravesoftware\brave-browser\applicatio...	1,70,304 K	84,784 K			85,520 K
C:\users\nikhil\AppData\Local\mozilla\firefox\profiles\9771y...	12 K	12 K			
C:\users\nikhil\AppData\Local\oaming\anydesk\ad.trace	8 K				8 K
C:\windows\system32\windows.ui.xaml.dll	15,468 K	7,832 K			7,636 K
C:\windows\systemapps\microsoftwindows.client.cbs_cw5...	2,576 K				2,576 K
C:\windows\system32\config\software	28,996 K	228 K			28,768 K
C:\program files\microsoft onedrive\21.245.1128.0002\pn...	1,840 K	120 K			1,720 K
C:\program files\microsoft onedrive\21.245.1128.0002\py...	6,532 K				6,532 K
C:\program files\microsoft office\root\office16\part.dll	4,784 K	2,812 K			1,972 K
C:\windows\system32\driverstore\filerepository\036468...	9,800 K	9,800 K			
C:\users\nikhil\AppData\Local\mozilla\firefox\profiles\9771y...	1,288 K	1,288 K			
C:\users\nikhil\AppData\Local\oaming\zoom\data\cef_x86\bccef...	1,82,612 K	1,37,040 K			45,572 K
C:\windows\system32\edgehtml.dll	23,296 K	13,068 K			10,228 K
C:\windows\system32\dxgi.dll	452 K	36 K			416 K
C:\windows\system32\d2d1.dll	1,116 K	988 K			128 K
C:\windows\system32\windows.storage.dll	7,056 K	2,184 K			4,872 K
C:\windows\system32\clpc.dll	104 K	24 K			80 K
C:\windows\system32\windows.media.dll	6,948 K	6,208 K			740 K
C:\users\nikhil\AppData\Local\connecteddevicesplatform\6...	2,928 K	2,016 K	4 K		908 K
C:\program files\microsoft office\root\ifs\programfilescom...	5,660 K	4,584 K			1,076 K
C:\programdata\microsoft\windows defender\definition up...	9,880 K	44 K			9,836 K
C:\program files\microsoft office\root\office16\winlib.dll	16,492 K	7,044 K			9,448 K
C:\users\nikhil\AppData\Local\mozilla\firefox\profiles\9771y...	340 K	340 K			
C:\windows\system32\windows.globalization.dll	1,808 K	1,312 K			496 K
C:\windows\globalization\time zone\timezones.xml	420 K	420 K			
C:\windows\system32\drivers\portcls.sys	292 K				292 K
C:\windows\assembly\nativeimages_v4.0.30319_54\sys...	5,176 K	1,576 K			3,600 K
C:\windows\system32\winem\en-us\cmwin32.dll.mui	12 K				12 K
C:\users\nikhil\AppData\Local\mozilla\firefox\profiles\9771y...	7,704 K				7,704 K
C:\users\nikhil\AppData\Local\oaming\zoom\data\emojis\1f469-...	12 K	12 K			

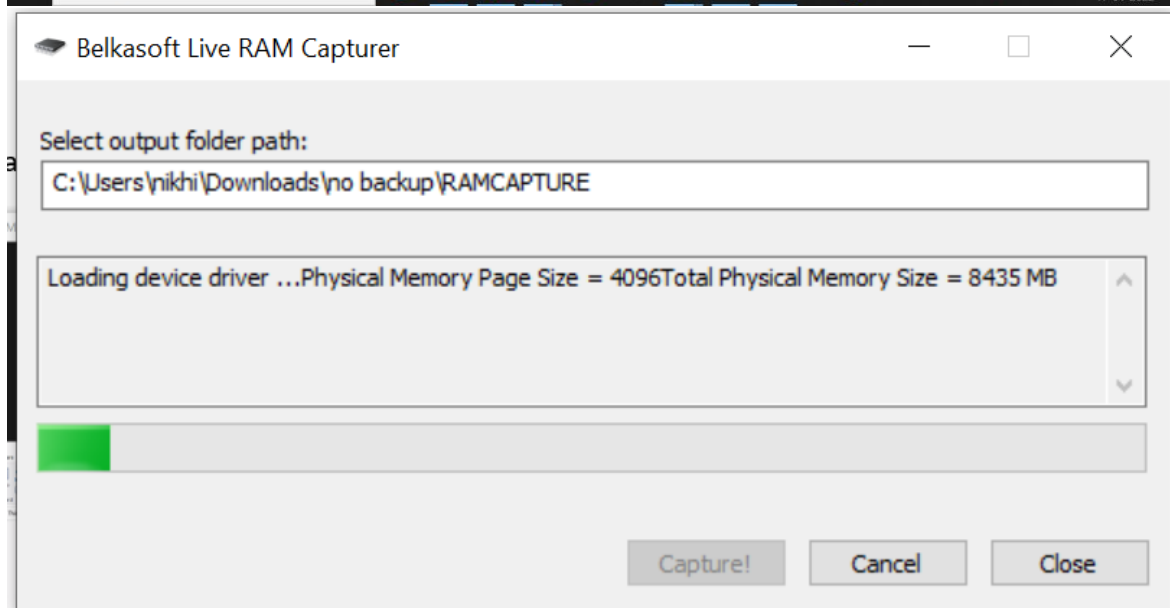
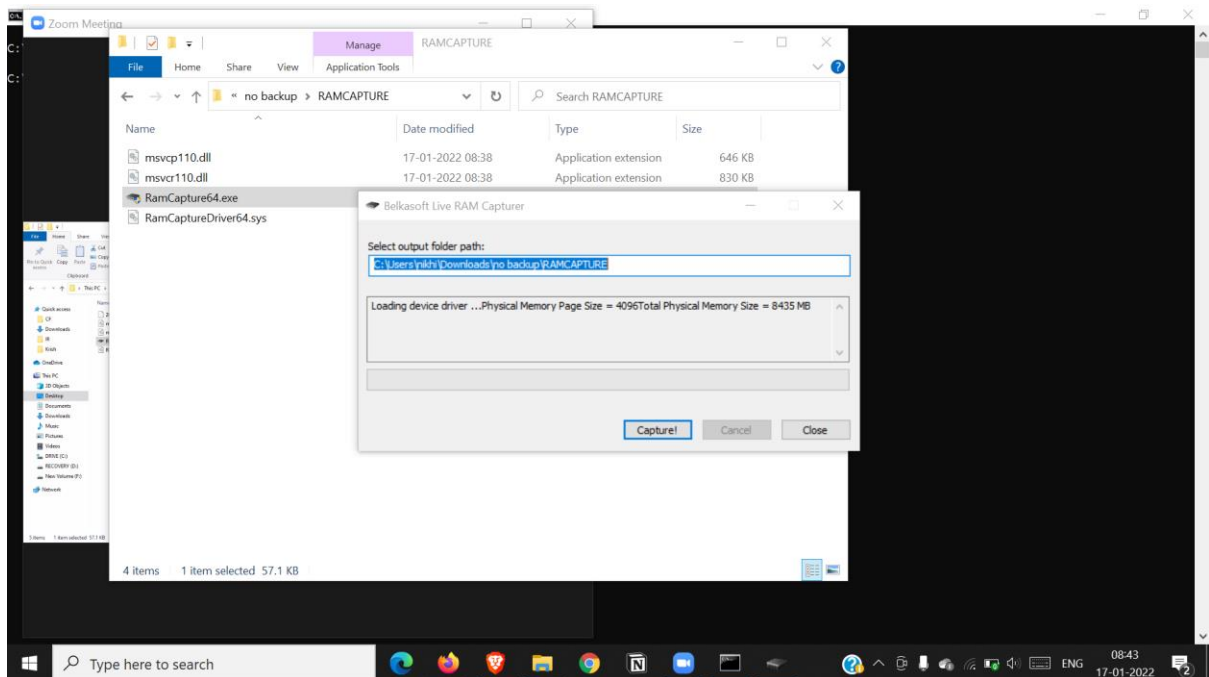
Type here to search

08:32 17-01-2022

Practical 6

cf

Ram capture



RAMCAPTURE			
File	Home	Share	View
This PC > Windows (C:) > Users > nikhi > Downloads > no backup > RAMCAPTURE			
Name	Date modified	Type	Size
20220117.mem	17-01-2022 08:45	MEM File	86,37,696 KB
msvc110.dll	17-01-2022 08:38	Application extension	646 KB
msvc110.dll	17-01-2022 08:38	Application extension	830 KB
RamCapture64.exe	17-01-2022 08:38	Application	58 KB
RamCaptureDriver64.sys	17-01-2022 08:38	System file	34 KB