

Lab Report 3: Identifying Running Processes

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1 Lab Objectives

This lab will use the TCP/UDP Endpoint Viewer tool from Windows Sysinternals Suite to identify processes running on the computer. The specific objectives are as follows:

- Download Windows Sysinternals Suite
- Launch TCP/UDP Endpoint Viewer
- Explore running processes
- Explore user-initiated processes

2 Lab Background

In this lab, we will explore processes. A process is a program or application that is currently executing. We will use Process Explorer from Windows Sysinternals Suite to explore processes, and we will also launch and observe a new process.

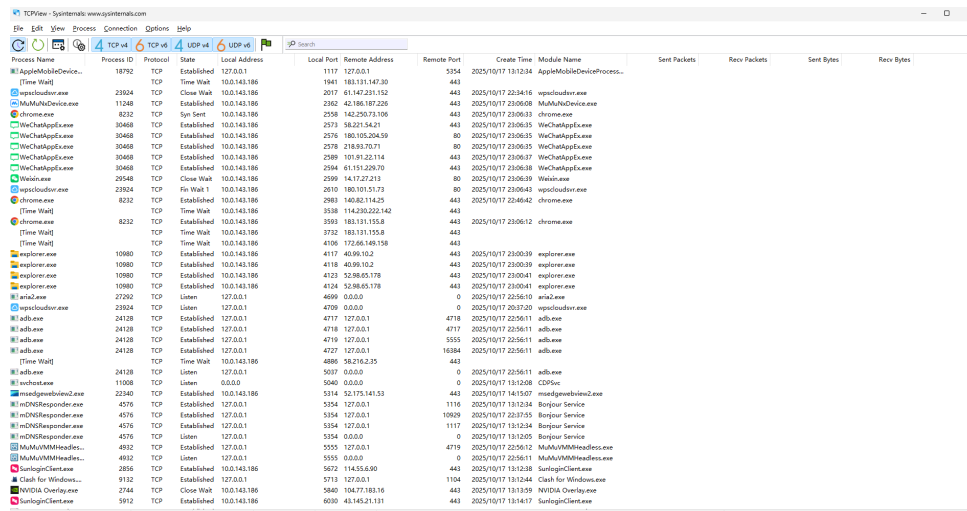
3 Lab Steps

3.1 Part 1: Download Windows Sysinternals Suite

1. Navigate to the following link to download Windows Sysinternals Suite:
<https://technet.microsoft.com/en-us/sysinternals/bb842062.aspx>
2. After downloading, right-click on the zip file, select "Extract All...", and extract the files from the folder.
3. Choose the default name and destination location (Downloads folder), then click "Extract".
4. Exit the Web browser.

3.2 Part 2: Launch TCP/UDP Endpoint Viewer

1. Navigate to the SysinternalsSuite folder containing all the extracted files.
2. Open Tcpview.exe. When prompted, accept the Process Explorer license agreement.
3. Click "Yes" to allow this application to make changes to your device.
4. Exit File Explorer and close all currently running applications.



Process Name	Process ID	Protocol	State	Local Address	Remote Address	Remote Port	Create Time	Module Name	Sent Packets	Recv Packets	Sent Bytes	Recv Bytes
AppleMobileDevice...	18792	TCP	Established	127.0.0.1	1117 127.0.0.1	5354	2025/10/17 13:12:34	AppleMobileDeviceProcess...				
[Time Wait]		TCP	Time Wait	10.0.143.186	1941 183.131.147.30	443						
vpscloud.exe	23024	TCP	Close Wait	10.0.143.186	2017 61.142.231.152	443	2025/10/17 22:34:16	vpscloud.exe				
MuMuMuDevice.exe	11248	TCP	Established	10.0.143.186	2362 42.186.187.226	443	2025/10/17 23:06:08	MuMuMuDevice.exe				
chrome.exe	8232	TCP	Syn Sent	10.0.143.186	2558 142.250.73.106	443	2025/10/17 23:06:33	chrome.exe				
WebChatApp.exe	30468	TCP	Established	10.0.143.186	2573 58.231.146.21	443	2025/10/17 23:06:33	WebChatApp.exe				
WebChatApp.exe	30468	TCP	Established	10.0.143.186	2576 180.105.204.59	80	2025/10/17 23:06:33	WebChatApp.exe				
WebChatApp.exe	30468	TCP	Established	10.0.143.186	2578 218.93.70.71	80	2025/10/17 23:06:33	WebChatApp.exe				
WebChatApp.exe	30468	TCP	Established	10.0.143.186	2589 101.91.222.114	443	2025/10/17 23:06:33	WebChatApp.exe				
WebChatApp.exe	30468	TCP	Established	10.0.143.186	2594 61.151.229.70	443	2025/10/17 23:06:38	WebChatApp.exe				
Webview.exe	29548	TCP	Close Wait	10.0.143.186	2599 14.17.27.213	80	2025/10/17 23:06:39	Webview.exe				
vpscloud.exe	23024	TCP	Fin Wait 1	10.0.143.186	2610 180.101.51.73	80	2025/10/17 23:06:40	vpscloud.exe				
chrome.exe	8232	TCP	Established	10.0.143.186	2983 140.82.114.25	443	2025/10/17 23:46:42	chrome.exe				
[Time Wait]		TCP	Time Wait	10.0.143.186	3538 114.230.222.142	443						
chrome.exe	8232	TCP	Established	10.0.143.186	3593 183.131.155.8	443						
[Time Wait]		TCP	Time Wait	10.0.143.186	3732 183.131.155.8	443						
explorer.exe	10980	TCP	Established	10.0.143.186	4106 172.86.148.158	443	2025/10/17 23:06:39	explorer.exe				
explorer.exe	10980	TCP	Established	10.0.143.186	4117 40.98.10.2	443	2025/10/17 23:06:39	explorer.exe				
explorer.exe	10980	TCP	Established	10.0.143.186	4118 40.98.10.2	443	2025/10/17 23:06:39	explorer.exe				
explorer.exe	10980	TCP	Established	10.0.143.186	4123 52.98.65.178	443	2025/10/17 23:06:41	explorer.exe				
explorer.exe	10980	TCP	Established	10.0.143.186	4124 52.98.65.178	443	2025/10/17 23:06:41	explorer.exe				
lsass.exe	27292	TCP	Listen	127.0.0.1	4699 0.0.0.0	0	2025/10/17 22:56:10	lsass.exe				
vpscloud.exe	23924	TCP	Listen	127.0.0.1	4709 0.0.0.0	0	2025/10/17 20:37:20	vpscloud.exe				
adb.exe	24128	TCP	Established	127.0.0.1	4717 127.0.0.1	4718	2025/10/17 22:56:11	adb.exe				
adb.exe	24128	TCP	Established	127.0.0.1	4718 127.0.0.1	4717	2025/10/17 22:56:11	adb.exe				
adb.exe	24128	TCP	Established	127.0.0.1	4719 127.0.0.1	5555	2025/10/17 22:56:11	adb.exe				
adb.exe	24128	TCP	Established	127.0.0.1	4727 127.0.0.1	16384	2025/10/17 22:56:11	adb.exe				
[Time Wait]		TCP	Time Wait	10.0.143.186	4886 58.232.25	443						
adb.exe	24128	TCP	Listen	127.0.0.1	5037 0.0.0.0	0	2025/10/17 22:56:11	adb.exe				
msedge.exe	11504	TCP	Listen	0.0.0.0	5040 0.0.0.0	0	2025/10/17 13:12:08	msedge.exe				
msedge.exe	22340	TCP	Established	10.0.143.186	5114 52.175.141.53	443	2025/10/17 14:15:07	msedge.exe				
msedge.exe	4576	TCP	Established	127.0.0.1	5354 127.0.0.1	1116	2025/10/17 13:12:34	Bonjour Service				
msedge.exe	4576	TCP	Established	127.0.0.1	5354 127.0.0.1	10009	2025/10/17 22:37:55	Bonjour Service				
msedge.exe	4576	TCP	Established	127.0.0.1	5354 127.0.0.1	1117	2025/10/17 13:12:34	Bonjour Service				
msedge.exe	4576	TCP	Listen	127.0.0.1	5354 0.0.0.0	0	2025/10/17 13:12:05	Bonjour Service				
msedge.exe	4912	TCP	Established	127.0.0.1	5555 127.0.0.1	4719	2025/10/17 22:56:12	MuMuMuDevice.exe				
msedge.exe	4912	TCP	Listen	127.0.0.1	5555 0.0.0.0	0	2025/10/17 22:56:11	MuMuMuDevice.exe				
SurrogateClient.exe	2856	TCP	Established	10.0.143.186	5672 114.25.6.90	443	2025/10/17 13:12:38	SurrogateClient.exe				
Crash for Windows...	5112	TCP	Established	127.0.0.1	5713 127.0.0.1	1104	2025/10/17 13:12:44	Crash for Windows...				
nvtoolsOverlay.exe	5744	TCP	Close Wait	10.0.143.186	5840 104.77.183.16	443	2025/10/17 13:13:59	nvtoolsOverlay.exe				
SurrogateClient.exe	5912	TCP	Established	10.0.143.186	6030 43.145.21.131	443	2025/10/17 13:14:17	SurrogateClient.exe				

Figure 1: TCP/UDP Endpoint Viewer Interface

3.3 Part 3: Explore Running Processes

1. TCPView lists the currently running processes on your Windows PC. At this point, only Windows processes are running.
2. Double-click on lsass.exe.

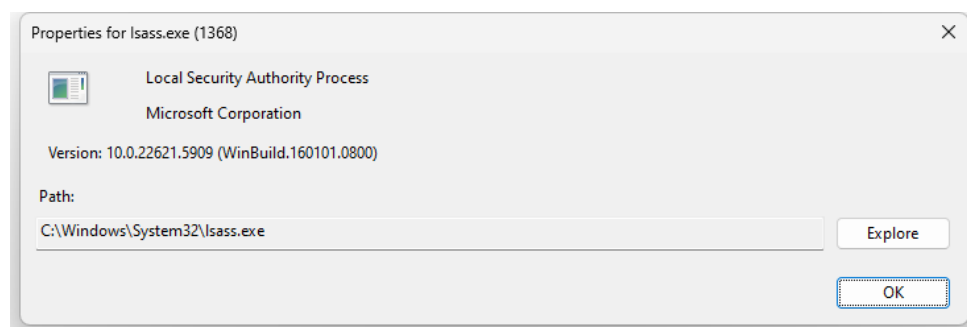


Figure 2: lsass.exe Process Properties

Question:

- What is lsass.exe? In which folder is it located?

Answer: lsass.exe is the executable file for the Windows Local Security Authority Subsystem Service. It is responsible for enforcing security policies, verifying user logins to Windows systems, managing password changes, and creating access tokens. As seen in the image, it is located in the C:/Windows/System32 folder. This is a critical Windows system process, and if terminated, the system will become unstable or force a restart.

3. Close the lsass.exe properties window when finished.
4. View the properties of other running processes.

Note: Not all processes can have their property information queried.

3.4 Part 4: Explore User-Initiated Processes

1. Open a Web browser, such as Microsoft Edge.

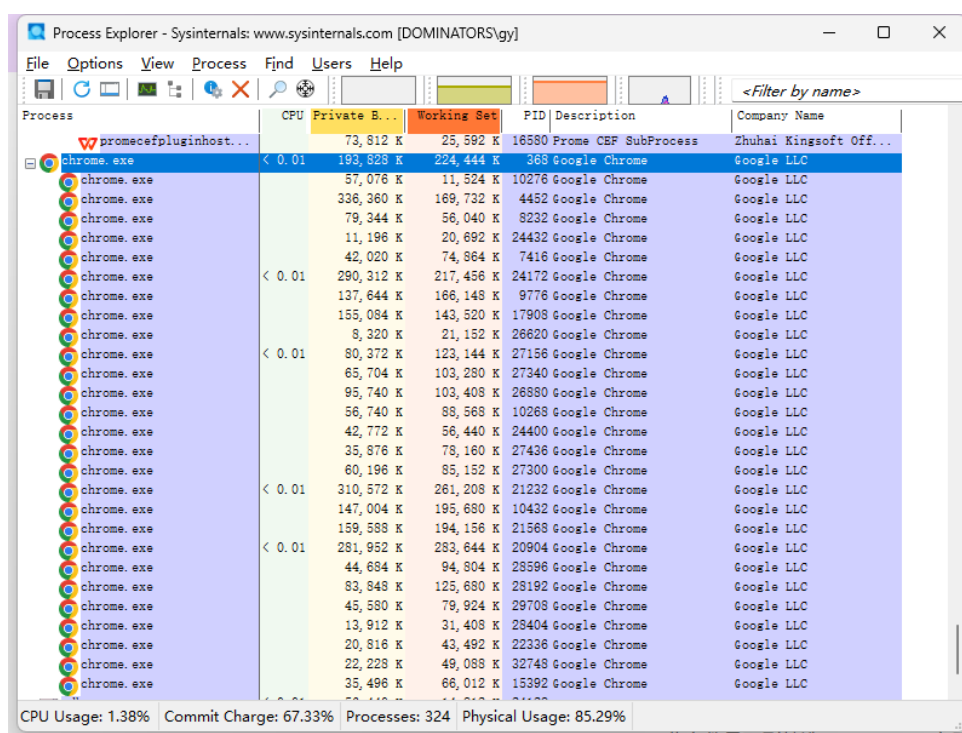


Figure 3: Process Explorer Detecting Browser Process

Question:

- What did you observe in the TCPView window?

Answer: In the TCPView window, when opening a web browser (such as Microsoft Edge), multiple new network connections can be observed being created. These connections show the TCP/UDP connections established between the browser process and various remote servers. The browser process can be seen using different local ports to communicate with remote servers, including DNS queries (for domain name resolution), HTTP/HTTPS connections (for loading web content), and other possible connections (such as WebSocket, content delivery networks, etc.). The status of these connections (such as ESTABLISHED, LISTENING, CLOSE_WAIT, etc.) is also displayed in TCPView.

2. Close the Web browser.

Question:

- What did you observe in the TCPView window?

Answer: After closing the web browser, all connections related to the browser disappear from the TCPView window. This indicates that when an application is closed, its related network connections are also terminated. TCPView briefly displays these closed connections with a color change (usually red) before they completely disappear from the list. The system returns to displaying only the network connection status of basic Windows system processes.

4 Lab 2: Exploring Processes, Threads, Handles, and Windows Registry

4.1 Part 1: Exploring Processes

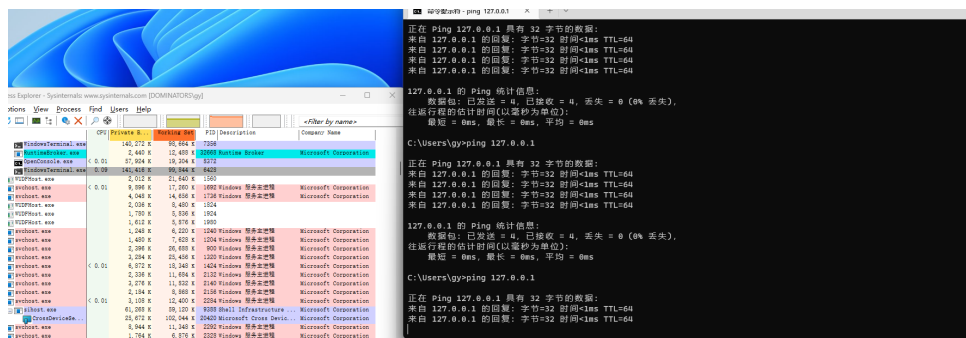


Figure 4: Process Explorer Detecting Command Prompt Process

Question:

- What happened to the Web browser window when the process was terminated?

Answer: When terminating the web browser process using Process Explorer, the browser window closes immediately without any warning or save prompts. This is because terminating a process forcibly ends all threads and resources of that process, giving the application no opportunity to execute normal closing procedures (such as saving data or closing connections). This can lead to loss of unsaved data and possibly loss of browsing history or session data in some cases.

Question:

- What happened during the ping process?

Answer: During the execution of the ping command, new activity can be observed under the cmd.exe process in Process Explorer. Specifically, small fluctuations in CPU usage can be seen, indicating that the ping command is performing network operations. In the thread view, the thread responsible for executing the ping command can be seen in an active state. Additionally, network-related handles being created and used can

be observed, which are used for sending ICMP request packets and receiving response packets. The ping command itself does not create a new child process but executes as a command within the cmd.exe process.

Question:

- What happened to the child process conhost.exe when the cmd.exe process was terminated?

Answer: When the cmd.exe process is terminated, its child process conhost.exe (console host process) is also automatically terminated. This is because conhost.exe is a process that provides console window services for cmd.exe, and they have a parent-child relationship. In Windows, when a parent process is terminated, the operating system typically terminates all related child processes. This behavior ensures that no orphaned processes continue to run, preventing resource leaks and system instability.

4.2 Part 2: Exploring Threads and Handles

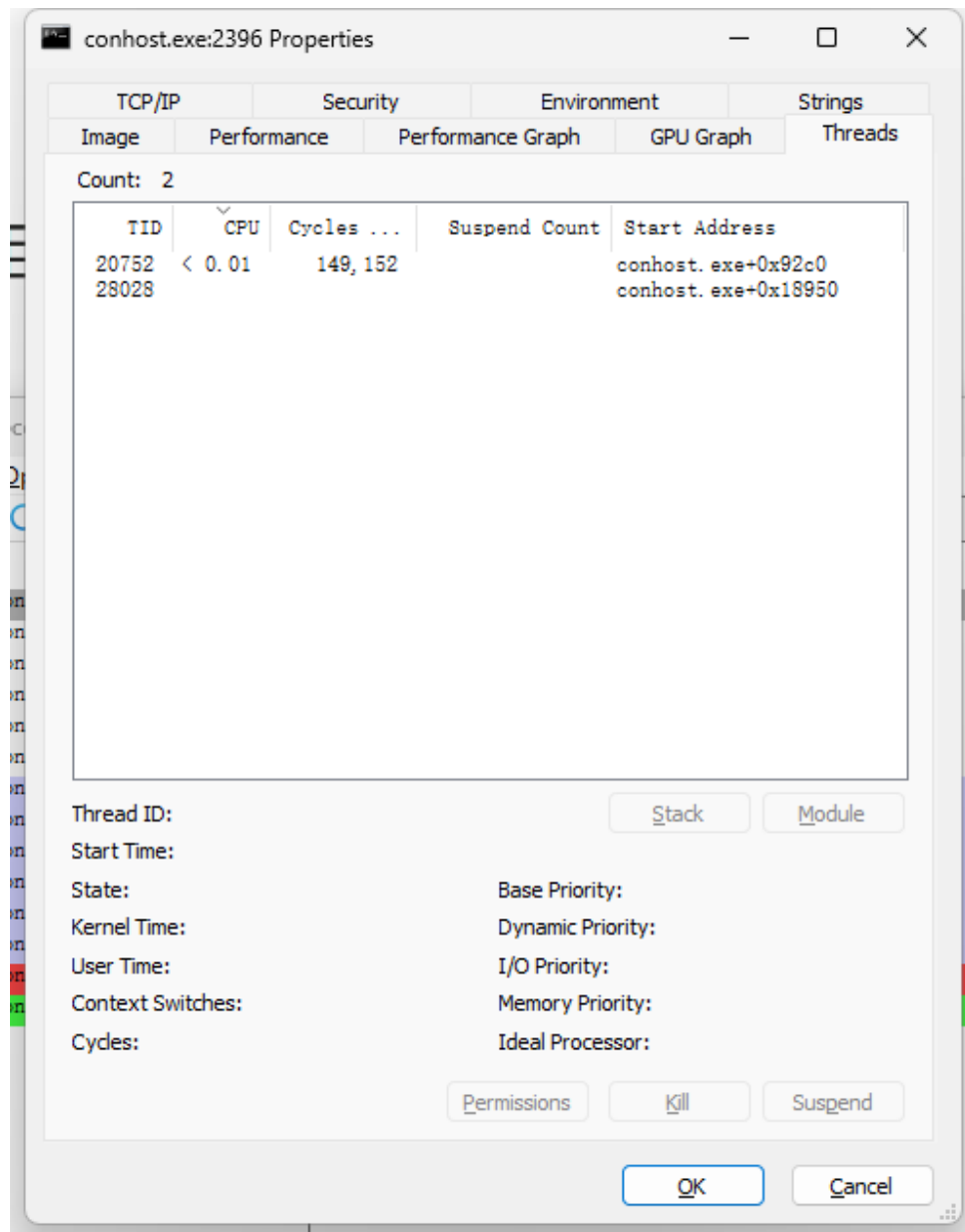


Figure 5: Process Thread Properties

Question:

- What types of information are available in the thread properties window?

Answer: In the thread properties window, the following types of information can be seen:

- Thread ID (TID): Unique identifier for each thread
- CPU usage and execution time of the thread
- Thread priority and status (such as running, waiting, suspended, etc.)

- Thread start address and current execution location
- Thread stack information, showing function call hierarchy
- Thread context switch count
- Module (DLL) to which the thread belongs
- Thread creation time

This information is very useful for understanding the execution flow within a process and diagnosing performance issues.

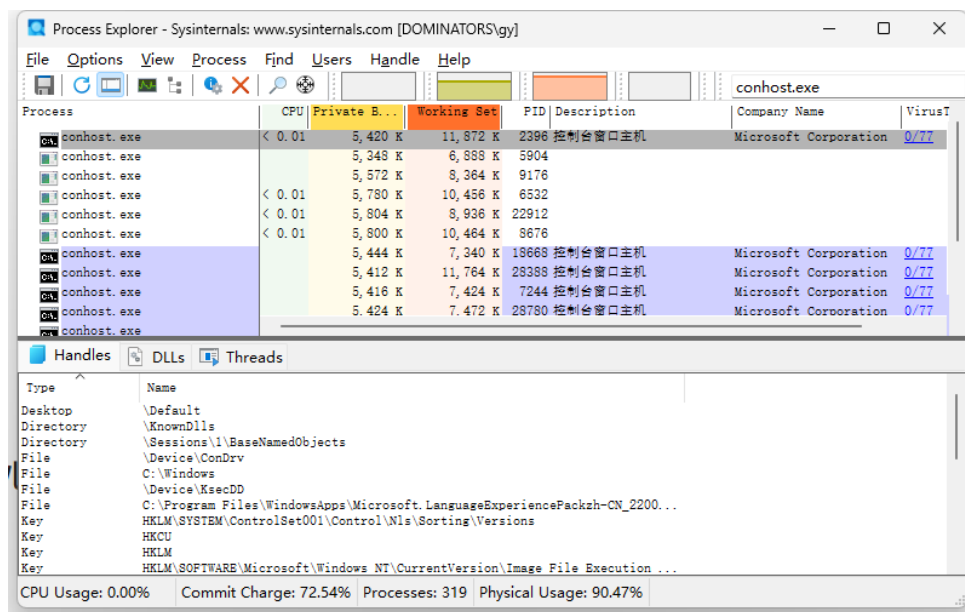


Figure 6: Process Handle Properties

Question:

- What do handles point to?

Answer: In the Process Explorer handle view, handles can be seen pointing to various system resources, including:

- Files: Files opened by the process, including executable files, configuration files, data files, etc.
- Registry keys: Windows registry entries accessed by the process
- Directories: File system directories accessed by the process
- Events: Event objects used for inter-process synchronization
- Mutexes: Synchronization objects used to control access to shared resources
- Semaphores: Synchronization objects used to control resource access counts
- Threads: Thread objects created or accessed by the process

- Processes: Other processes referenced by the current process
- Devices: References to hardware devices or virtual devices
- Ports: Communication ports, such as named pipes or network ports

These handles are essentially references to operating system resources, through which processes interact with system resources.

4.3 Part 3: Exploring Windows Registry

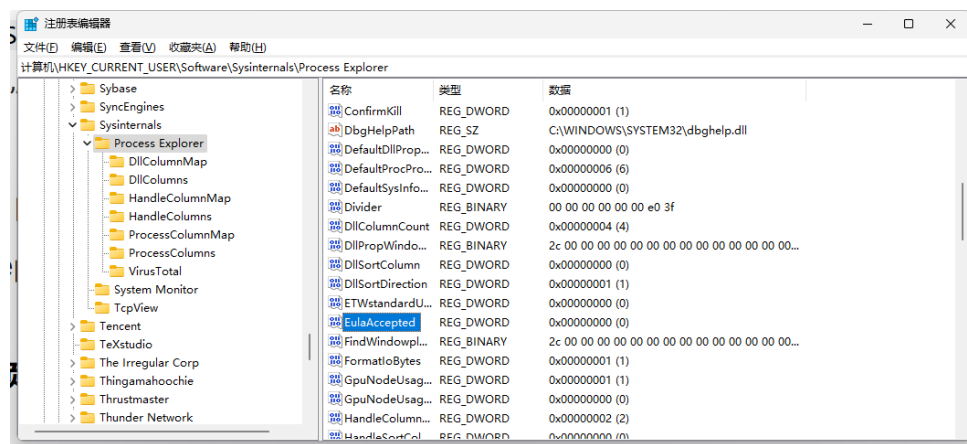


Figure 7: EULA Settings in Registry

Question:

- What is the value of the EulaAccepted registry key?

Answer: The value of the EulaAccepted registry key is 0x00000001(1), indicating that the user has accepted the End User License Agreement (EULA) for Process Explorer. This value is stored under the path HKEY_CURRENT_USER

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Process Explorer. When the value is 1, it indicates that the EULA has been accepted; when the value is 0, it indicates that the EULA has not yet been accepted.

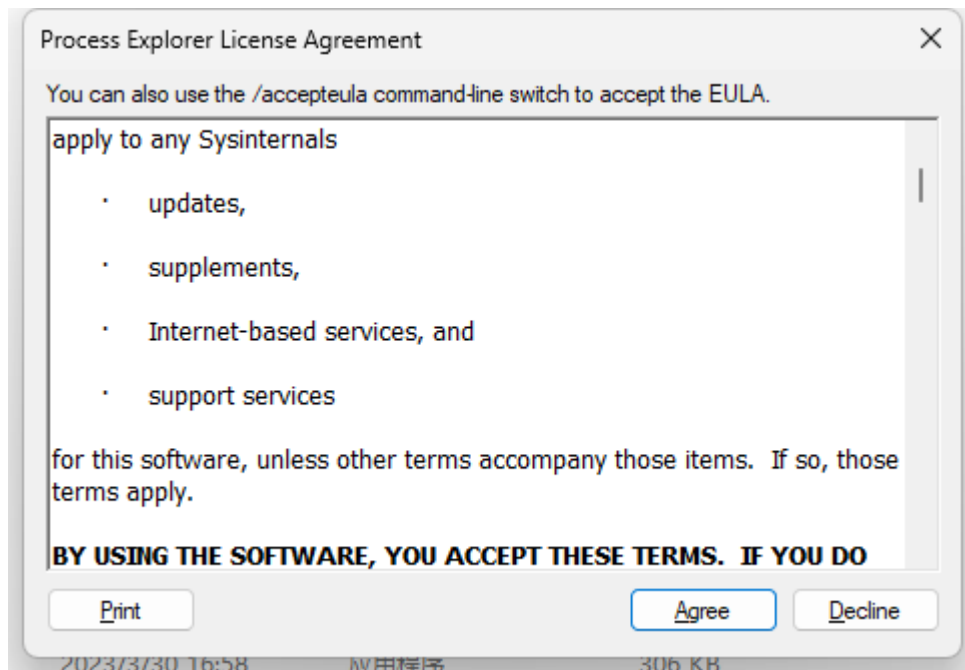


Figure 8: Result After Changing EulaAccepted Value to 0

Question:

- What did you see when you opened Process Explorer after changing the EulaAccepted value from 1 to 0?

Answer: After changing the EulaAccepted value from 1 to 0 and opening Process Explorer, the software displays the End User License Agreement (EULA) dialog box again, requiring the user to re-accept the license terms. This indicates that Process Explorer checks this value in the registry each time it starts to determine whether to display the EULA. If the user accepts the EULA, the value is reset to 1; if the user refuses to accept, the application will not start. This is a mechanism for the software to ensure that users understand and agree to the terms of use.

5 Lab Conclusion

Through this lab, we have successfully used tools from Windows Sysinternals Suite to explore and analyze processes, threads, handles, and the registry in Windows systems. We have learned:

- How to use TCP/UDP Endpoint Viewer and Process Explorer to monitor system processes
- The hierarchical structure of processes and parent-child relationships
- The characteristics and properties of threads as execution units within processes
- How handles serve as references for processes to interact with system resources
- How the Windows registry stores application configuration information

- How to change application behavior by modifying registry values

This knowledge is very important for system administration, security analysis, and software development, helping us better understand the internal working mechanisms of the Windows operating system.