3.2.11 Lab - Exploring Processes, Threads, Handles, and Windows Registry

This lab has been updated for use on NETLAB+.
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Objectives

In this lab, you will explore the processes, threads, and handles using Process Explorer in the SysInternals Suite. You will also use the Windows Registry to change a setting.

Part 1: Exploring Processes

Part 2: Exploring Threads and Handles

Part 3: Exploring Windows Registry

Instructions

Part 1: Exploring Processes

In this part, you will explore processes. Processes are programs or applications in execution. You will explore the processes using Process Explorer in the Windows SysInternals Suite. You will also start and observe a new process.

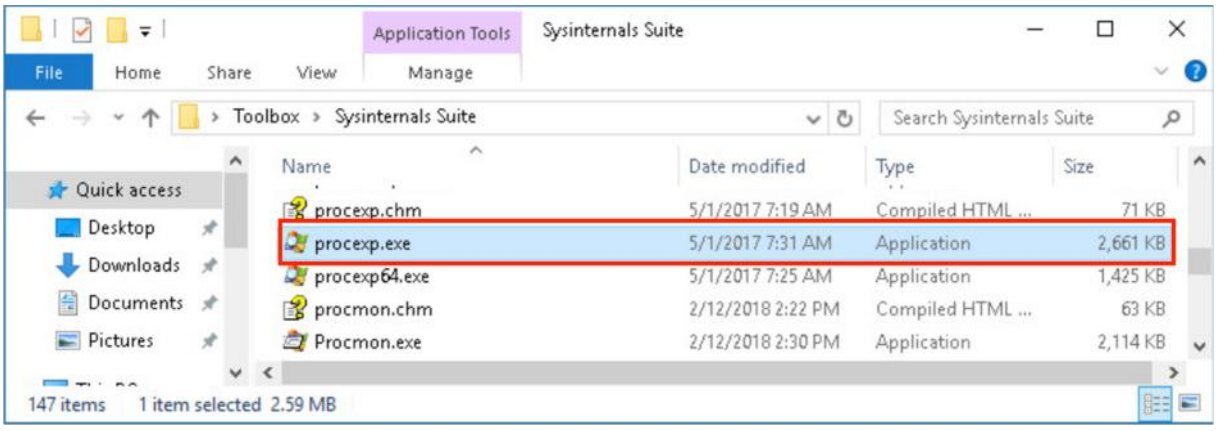
Step 1: Explore an active process.

a. Access the **WinClient** machine. Unlock the machine by clicking on the drop-down arrow for that specific machine's tab and select **Send CTRL+ALT+DEL**.

b. Login as the `Administrator` using `cyberops` as the password.

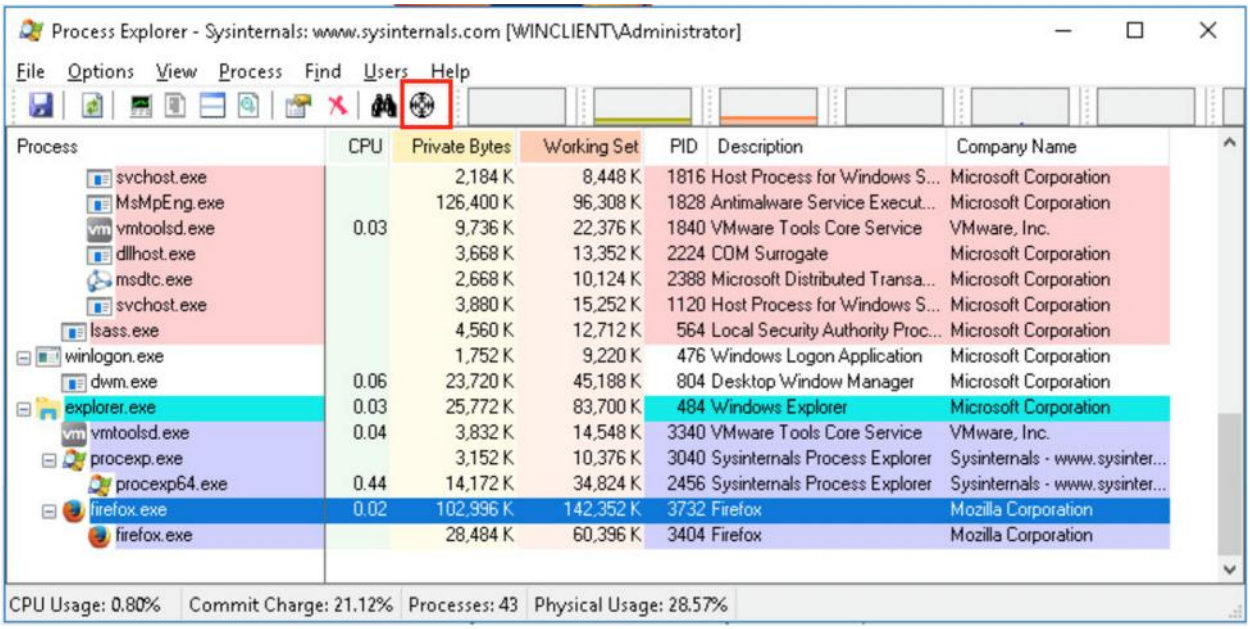
c. On the Desktop, navigate to the **Toolbox** > **Sysinternals Suite** folder located on the Desktop.

d. Open **procexp.exe**. Accept the Process Explorer License Agreement when prompted.

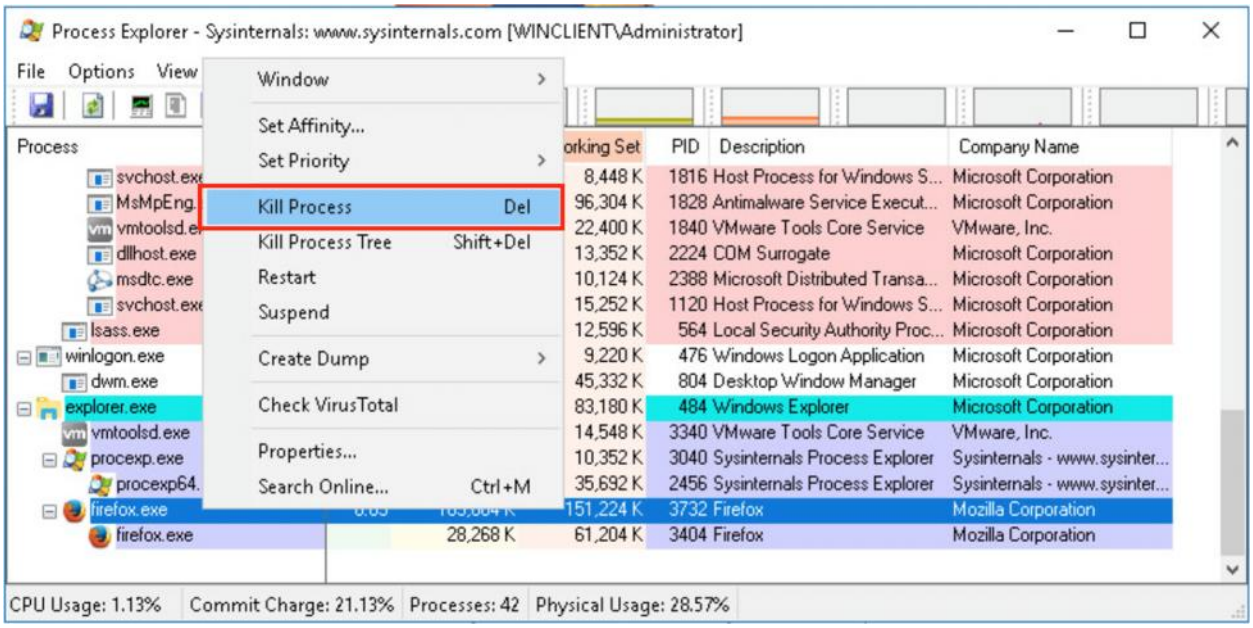


e. The Process Explorer displays a list of currently active processes.

f. Launch the **Mozilla Firefox** web browser and leave it open in the background. Change focus to the **Process Explorer**. To locate the web browser process, drag the **Find Window's Process** icon into the opened web browser window.



g. The Mozilla Firefox process can be terminated in the *Process Explorer*. Right-click the selected process and select **Kill Process**. Click **OK** to confirm.



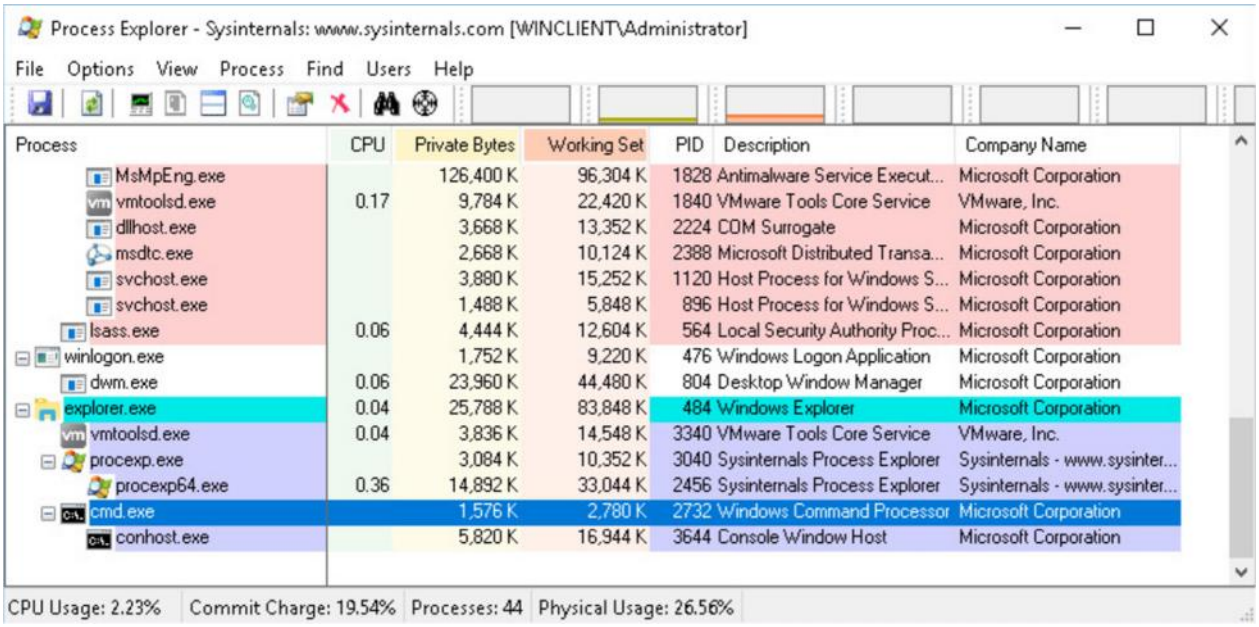
What happened to the web browser window when the process is killed?

Step 2: Start another process.

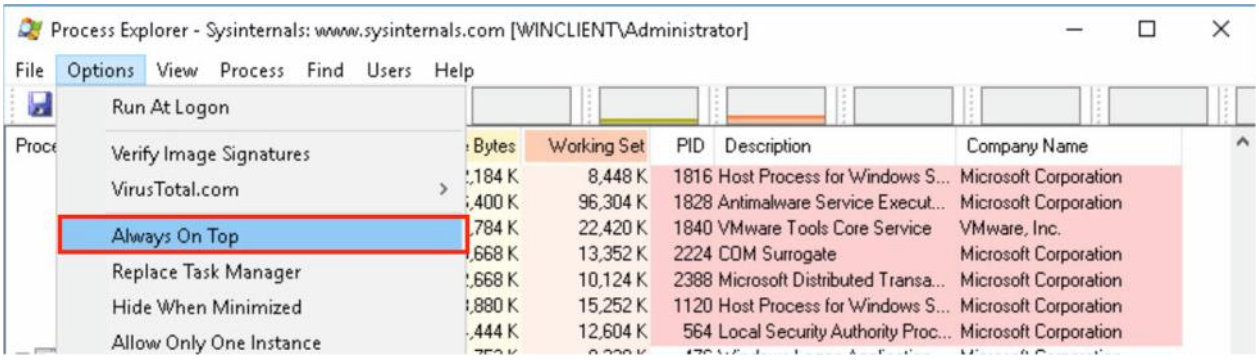
a. Open a Command Prompt. (**Start** > search **Command Prompt** > select **Command Prompt**)

b. Drag the **Find Window's Process** icon into the Command Prompt window and locate the highlighted Command Prompt process in Process Explorer.

c. Notice the process for the Command Prompt is cmd.exe. Its parent process is explorer.exe. The cmd.exe has a child process, conhost.exe.



d. In the Process Explorer, click **Options** > select **Always On Top** option.



e. Navigate to the Command Prompt window. Ping the local gateway at **192.168.0.1** and observe the changes under the cmd.exe process.

What happened during the ping process?

If a process is found to be suspicious, you may right-click the process and use the *Check VirusTotal* feature. With an active internet connection, this feature will help detect whether a process has malicious content.

f. Right-click the cmd.exe process and select **Kill Process**. When prompted, click **OK**.

What happened to the child process conhost.exe?

Part 2: Exploring Threads and Handles

In this part, you will explore threads and handles. Processes have one or more threads. A thread is a unit of execution in a process. A handle is an abstract reference to memory blocks or objects managed by an operating system. You will use Process Explorer (procexp.exe) in Windows SysInternals Suite to explore the threads and handles.

Step 1: Explore threads.

a. Open a **command prompt**.

b. In the *Process Explorer* window, right-click **conhost.exe** and select **Properties**. Click the **Threads** tab to view the active threads for the conhost.exe process. Click **OK** to continue if prompted by a warning dialog box.

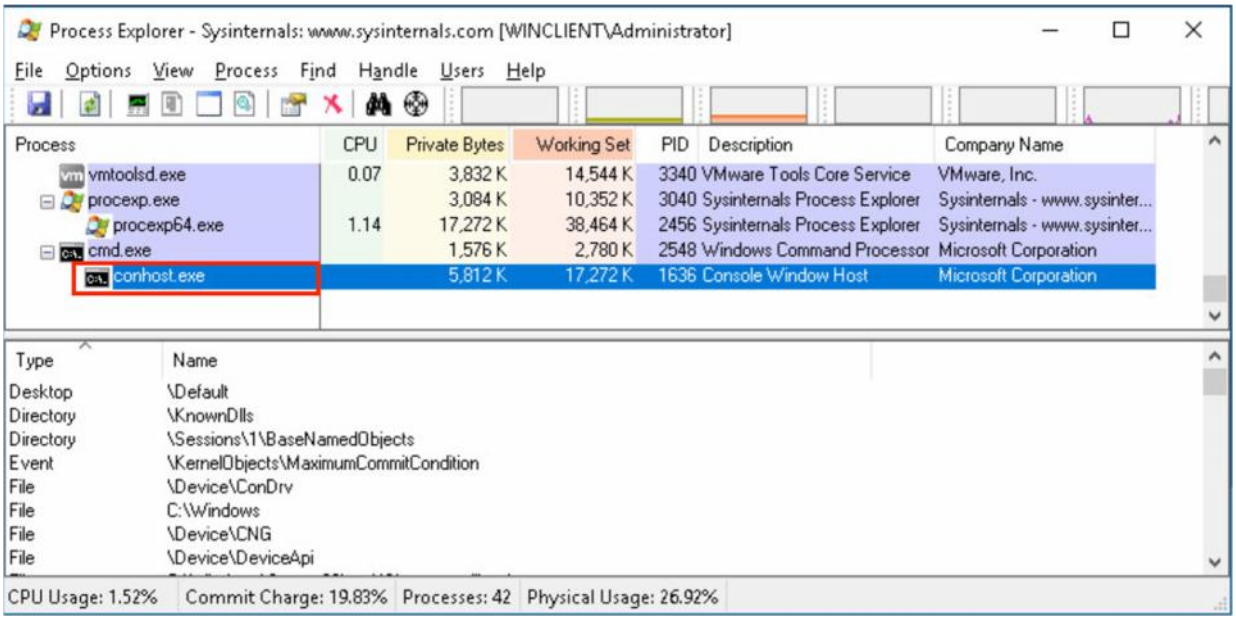
c. Examine the details of the thread.

What type of information is available in the Properties window?

d. Click **Cancel** to exit the properties window

Step 2: Explore handles.

a. In the Process Explorer, click **View** > select **Lower Pane View** > **Handles** to view the handles associated with the conhost.exe process.



Examine the handles. What are the handles pointing to?

b. Close the **Process Explorer** and **Command Prompt** when finished.

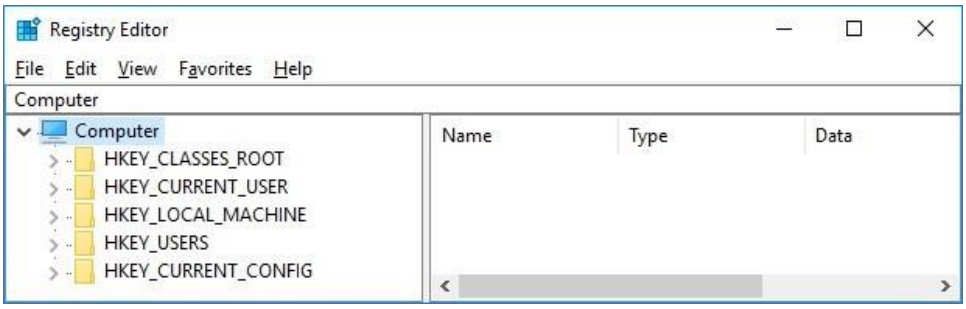
Part 3: Exploring Windows Registry

The Windows Registry is a hierarchical database that stores most of the operating systems and desktop environment configuration settings.

a. To access the Windows Registry, click the **Search icon** on the taskbar and search for **regedit**. Select the regedit run command search result to open the **Registry Editor**. Click **Yes** if asked to allow this app to make changes.

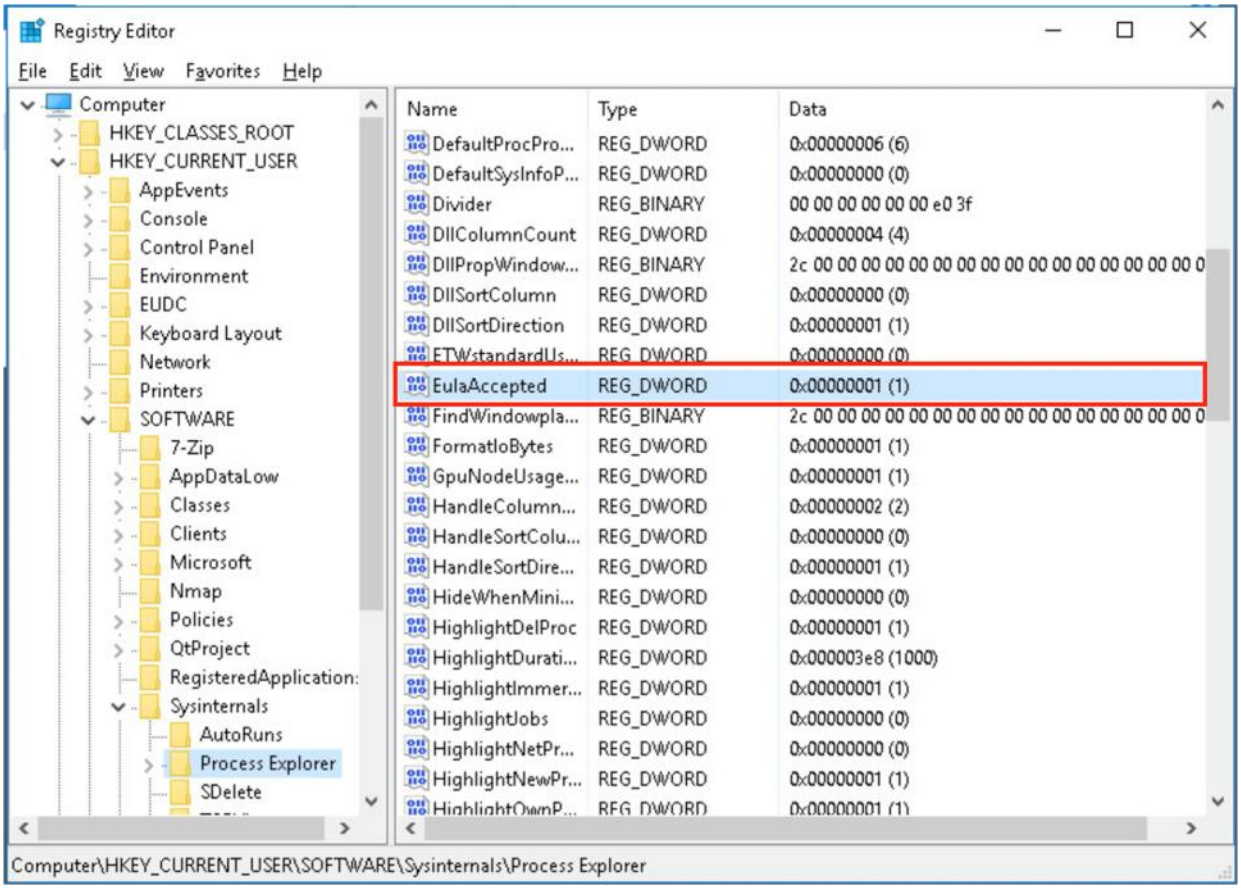
The Registry Editor has five hives. These hives are at the top level of the registry.

- HKEY_CLASSES_ROOT is actually the Classes subkey of HKEY_LOCAL_MACHINE\Software\. It stores information used by registered applications like file extension association, as well as a programmatic identifier (ProgID), Class ID (CLSID), and Interface ID (IID) data.
- HKEY_CURRENT_USER contains the settings and configurations for the users who are currently logged in.
- HKEY_LOCAL_MACHINE stores configuration information specific to the local computer.
- HKEY_USERS contains the settings and configurations for all the users on the local computer. HKEY_CURRENT_USER is a subkey of HKEY_USERS.
- HKEY_CURRENT_CONFIG stores the hardware information that is used at bootup by the local computer.

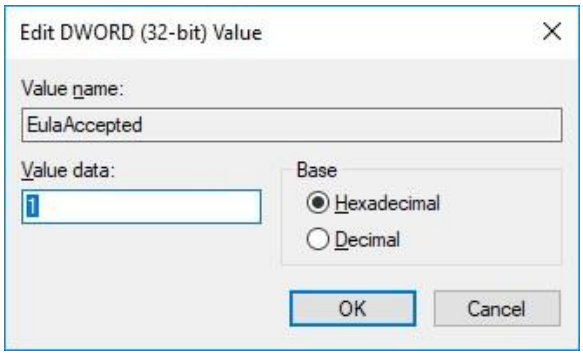


b. In a previous step, you had accepted the EULA for Process Explorer. Navigate to the EulaAccepted registry key for Process Explorer.

Expand **HKEY_CURRENT_USER** > **Software** > **Sysinternals** > **Process Explorer**. Click to select Process Explorer. Scroll down to locate the key **EulaAccepted**. Currently, the value for the registry key EulaAccepted is 0x00000001(1).



c. Double-click **EulaAccepted** registry key. Currently the value data is set to 1. The value of 1 indicates that the EULA has been accepted by the user.



d. Change the **1** to **0** for Value data. The value of 0 indicates that the EULA was not accepted. Click **OK** to continue.

What is value for this registry key in the Data column?

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e. Open the **Process Explorer**. Open the **Toolbox** folder on the Desktop. Open the folder **SysInternalsSuite** > open **procexp.exe**.

When you open the Process Explorer, what did you see?

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