

### 3.3.13 Lab - Monitor and Manage System Resources in Windows



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

In this lab, you will use administrative tools to monitor and manage Windows system resources.

**Part 1: Starting and Stopping the Routing and Remote Access service**

**Part 2: Working in the Computer Management Utility**

**Part 3: Configuring Administrative Tools**

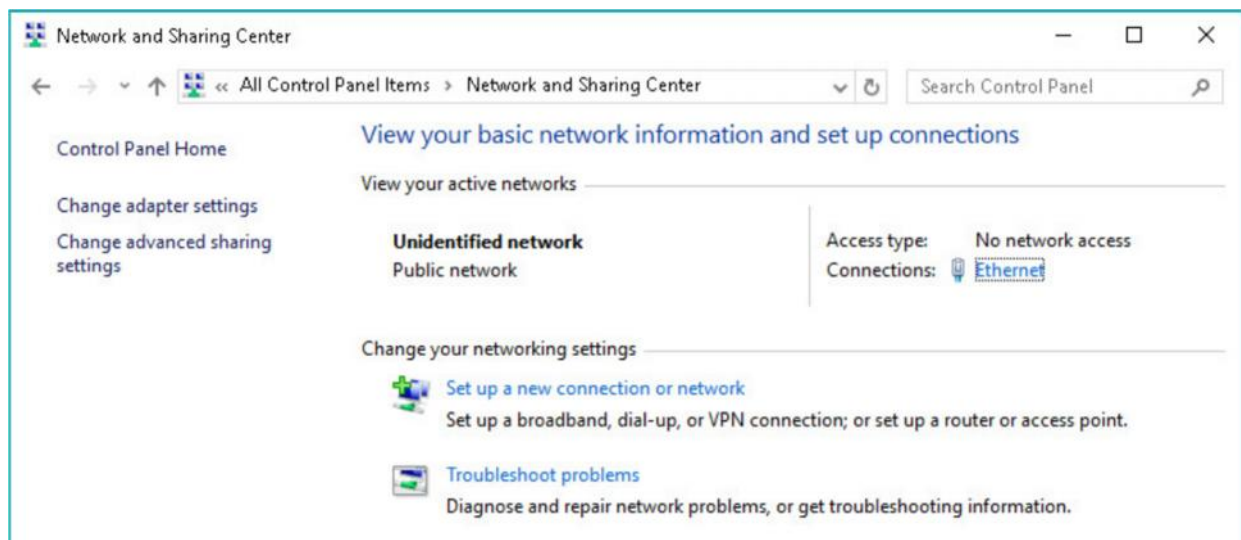
#### Instructions

##### Part 1: Starting and Stopping the Routing and Remote Access service

You will explore what happens when a service is stopped and then started. In this part, you will use routing and remote access service as the example service. This service allows the local device to become a router or a remote access server.

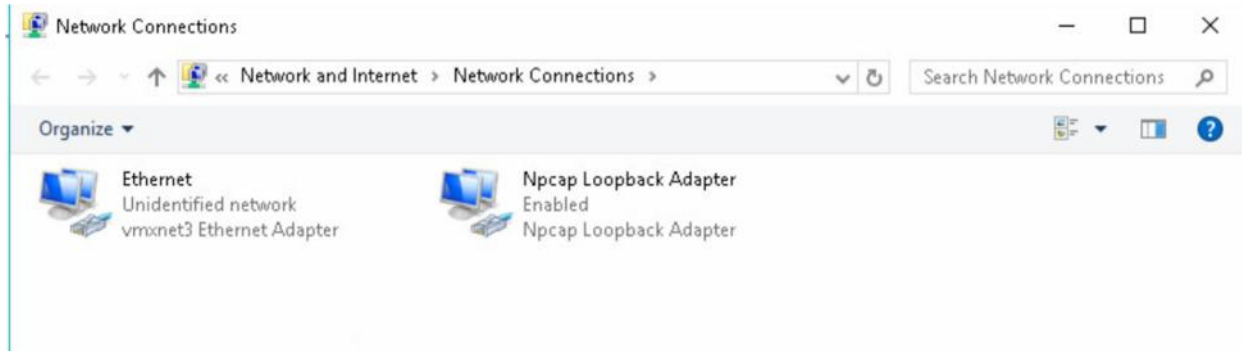
- Access the **WinClient** machine. Unlock the machine by clicking on the drop-down arrow for that specific machine's tab and select **Send Ctrl+Alt+Del**.
- Login as the **cyberopsuser** using **cyberops** as the password.
- Click **Search Windows** > Search and select **Control Panel** > Click **Network and Sharing Center**.

**Note:** If your Control Panel is set to **View by: Category**, change it to **View by: Large icons** or **View by: Small icons**. This lab assumes that you are using one of these settings.

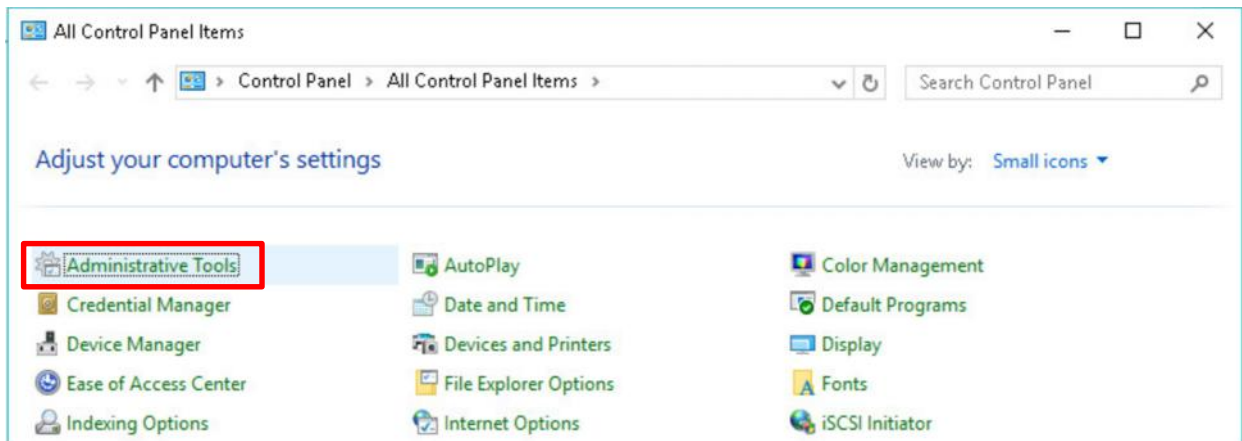


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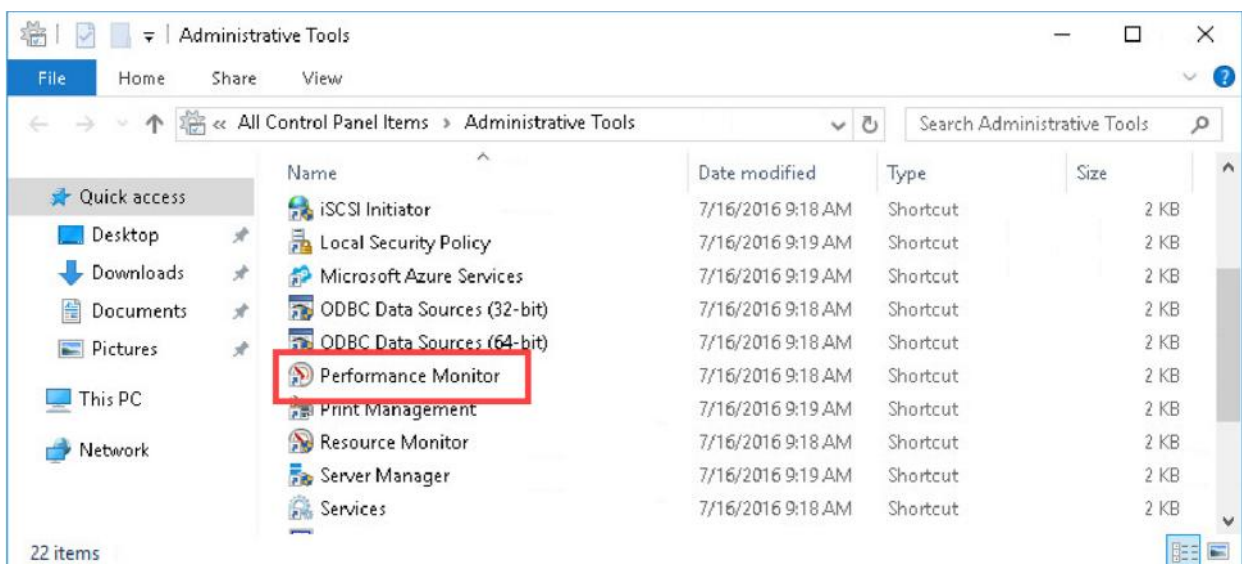
- d. Click **Change adapter settings** in the left pane. Reduce the size of the **Network Connections** window and leave it open.



- e. Navigate to the **Administrative Tools**. (Click **Search Windows** > Search for and select **Control Panel** > Click **Administrative Tools**)

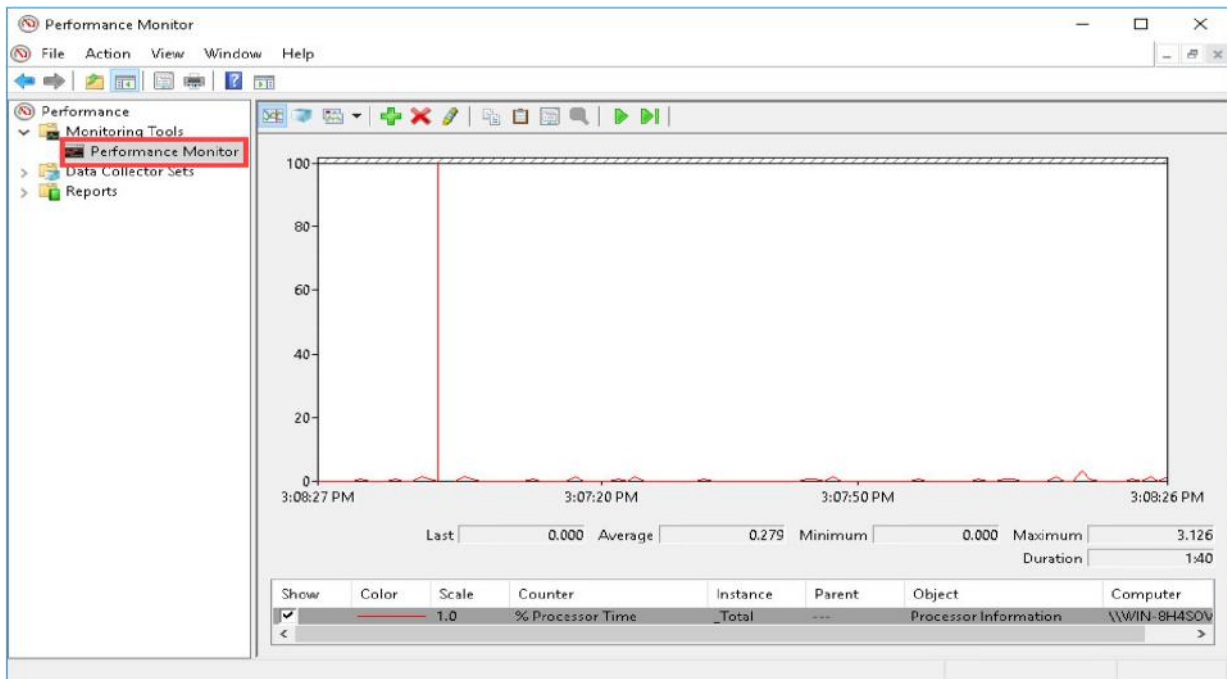


- f. In the **Administrative Tools** window, double-click the **Performance Monitor** icon.

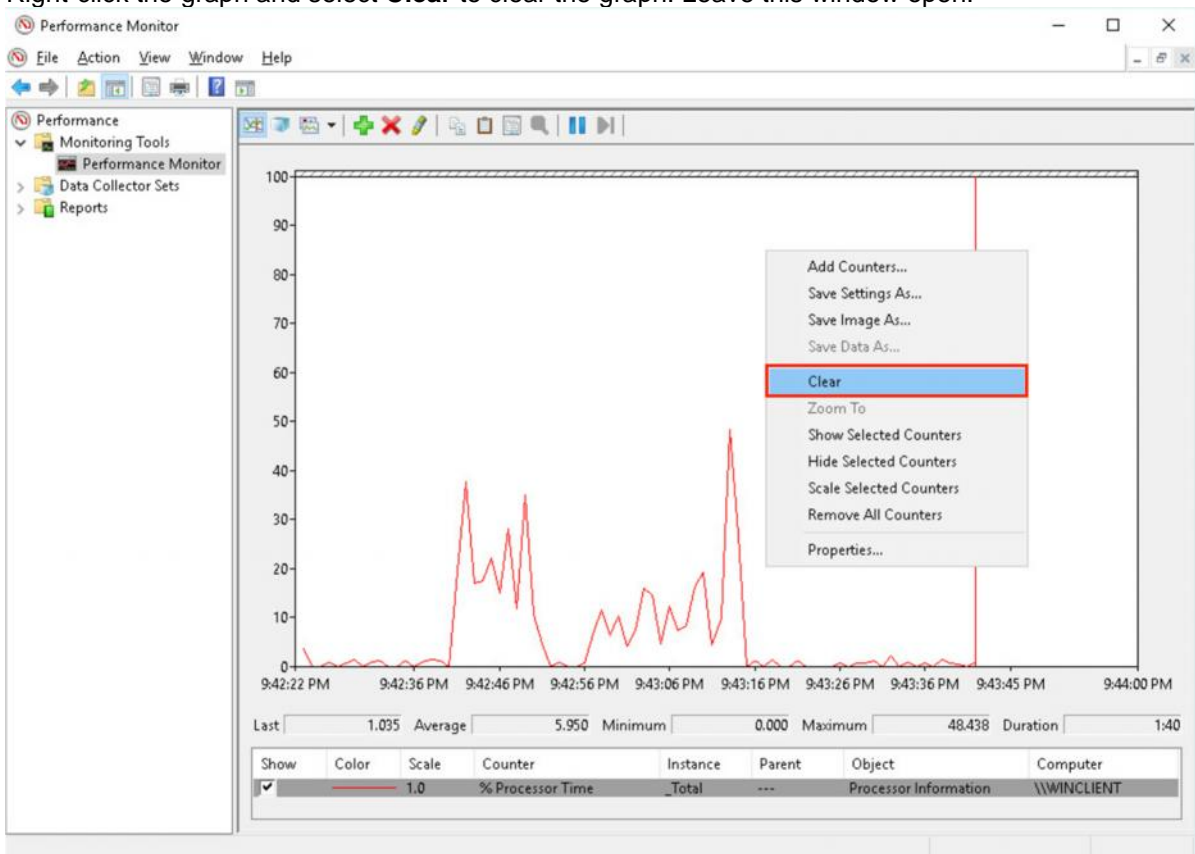


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- g. In the *Performance Monitor* window, click **Performance Monitor** under the *Monitoring Tools* heading in the left pane is highlighted. Click the **Freeze Display** icon (pause button) to stop the recording.

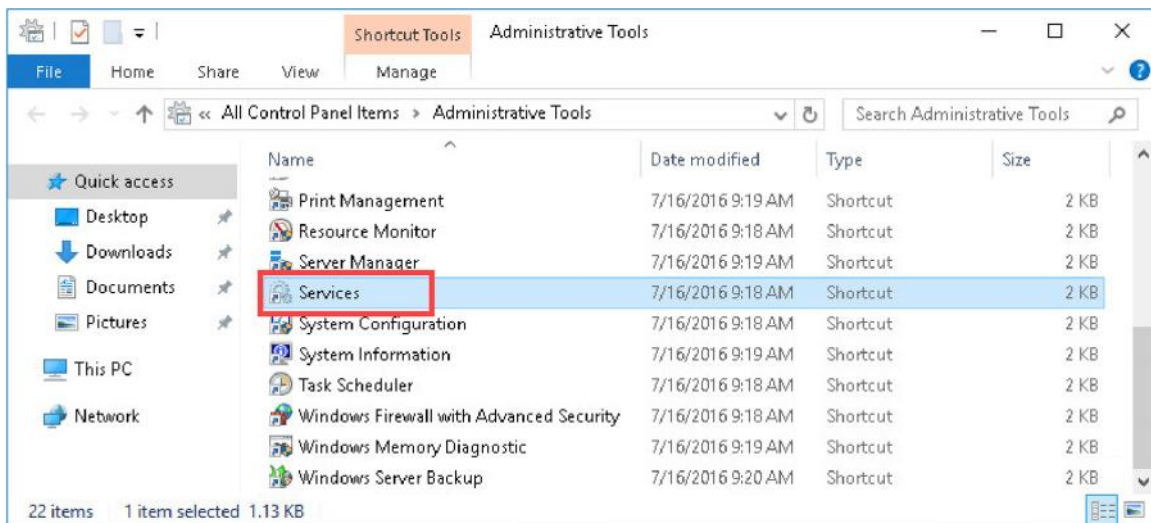


- h. Right-click the graph and select **Clear** to clear the graph. Leave this window open.

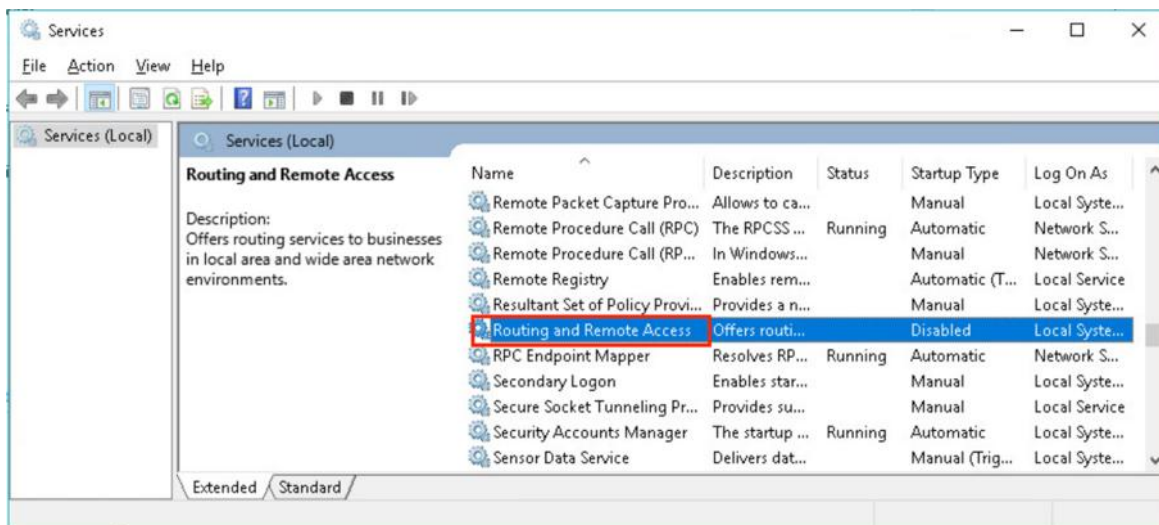


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- i. Navigate back to the **Administrative Tools** window and double-click **Services**.



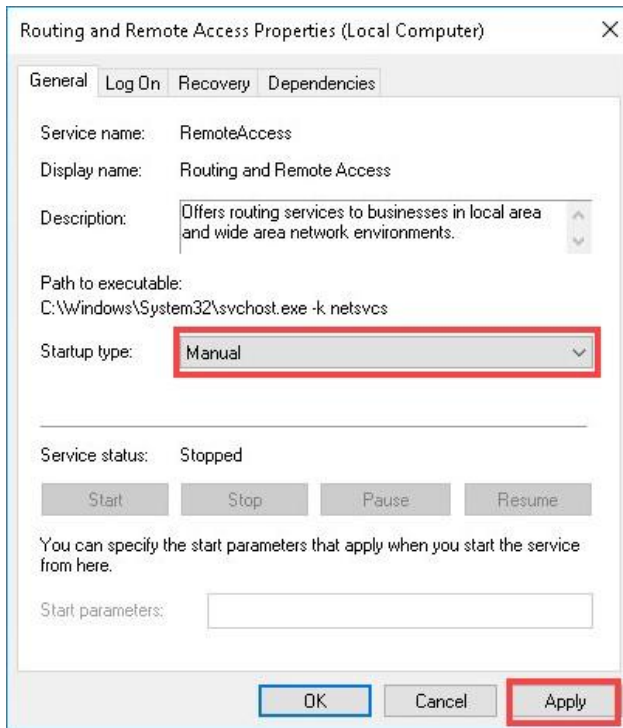
- j. Expand the width of the **Services** window so you have a clear view of the content. Scroll down in the right pane until you see the service **Routing and Remote Access**. Double-click **Routing and Remote Access**.



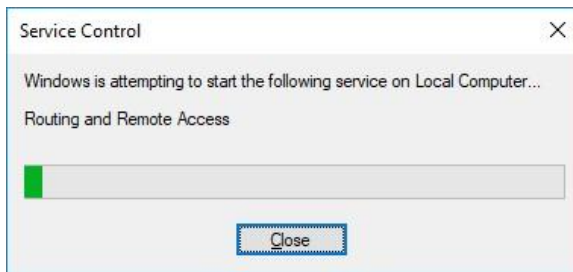
- k. The **Routing and Remote Access Properties (Local Computer)** window opens. In the **Startup type** drop-down field, select **Manual** and then click **Apply**.

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The Start button is now active. Do NOT click the Start button yet. Leave this window open.



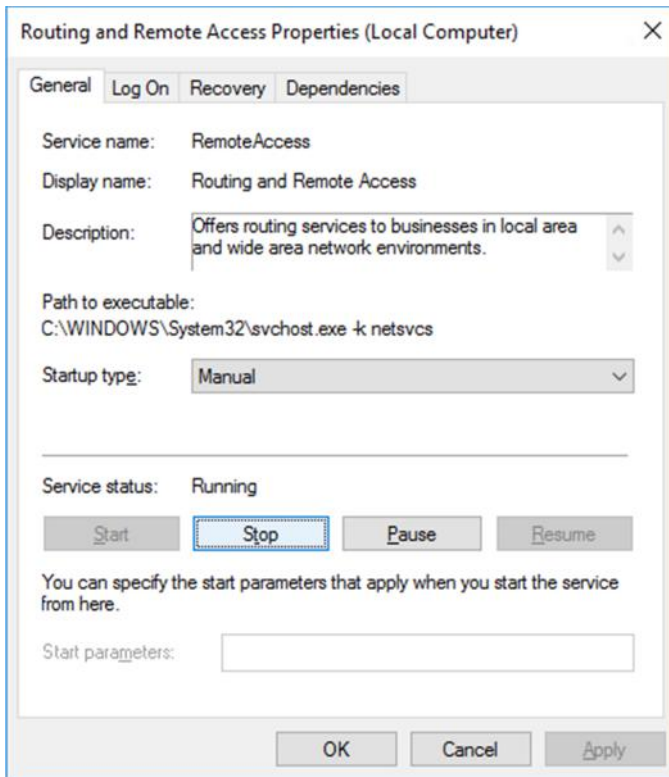
- I. Navigate to **Performance Monitor** window. Click the **Unfreeze Display** icon to start the recording.
- m. Click the **Routing and Remote Access Properties (Local Computer)** window. To start the service, click **Start**. A window with a progress bar opens.



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- n. The **Routing and Remote Access Properties (Local Computer)** window now shows the Stop and Pause button active. Leave this window open.



- o. Navigate to **Network Connections** window. Press the function key **F5** to refresh the content.

What changes appear in the window after starting the **Routing and Remote Access** service?

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- p. Navigate to **Routing and Remote Access Properties (Local Computer)** window and click **Stop**. **Note:** If **Stop** is greyed out, click **Apply** and change the service status.

- q. Navigate to **Network Connections** window.

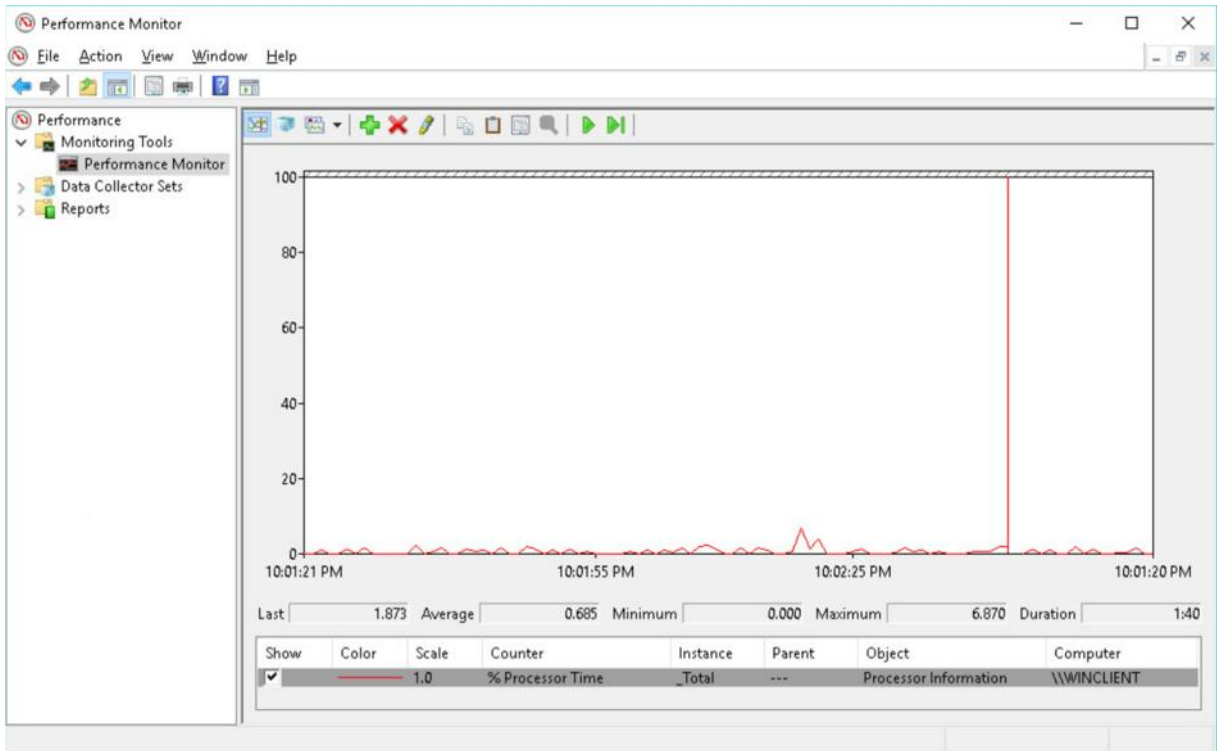
What changes appear in the right pane after stopping the Routing and Remote Access service?

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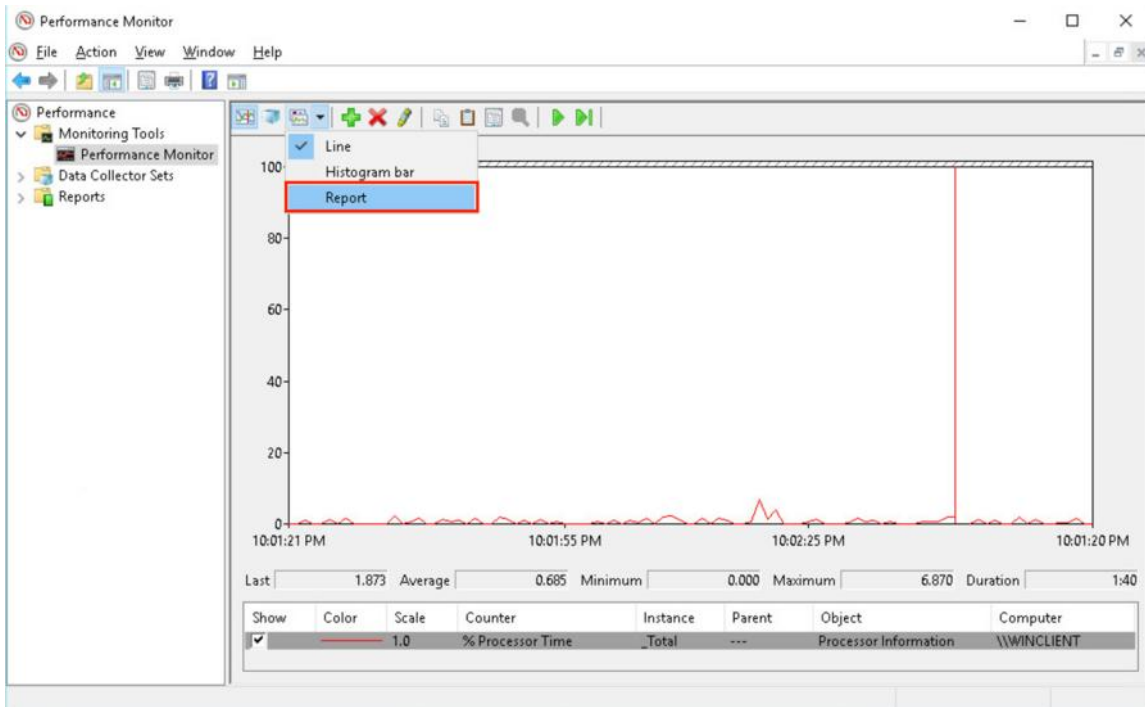
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- r. Navigate to **Performance Monitor** window and click the **Freeze Display** icon to stop the recording.



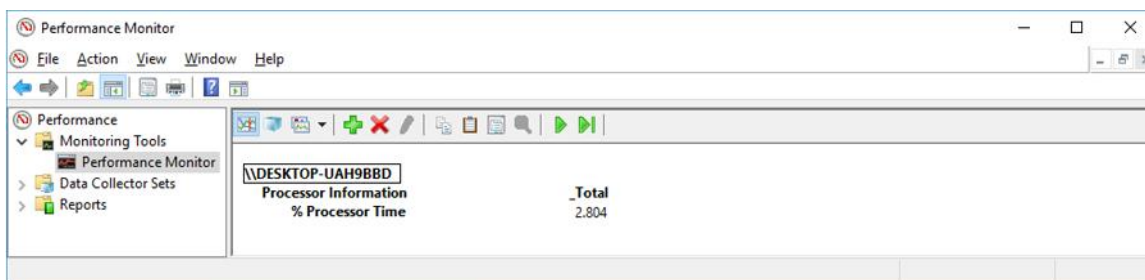
Which Counter is being recorded the most in the graph (hint: look at the graph color and Counter color)?

- s. Click the **Change graph type** drop-down menu, select **Report**.



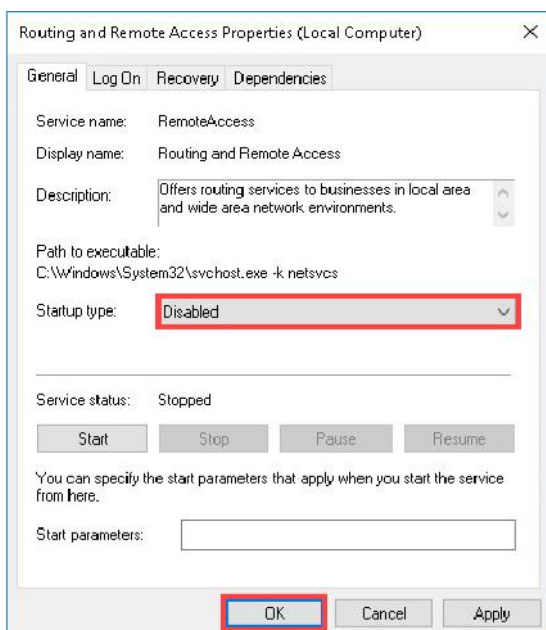
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- t. The display changes to report view.



What values are displayed by the counter?

- u. Click the **Routing and Remote Access Properties (Local Computer)** window. In the Startup type field, select **Disabled** and click **OK**.



- v. Click the **Services** window.

What is the Status and Startup Type for Routing and Remote Access?

- w. Click the **Performance Monitor** window. Click the **Unfreeze Display** icon to start the recording.  
x. Close all open windows you opened during Step 1 of this lab.

## Part 2: Working in the Computer Management Utility

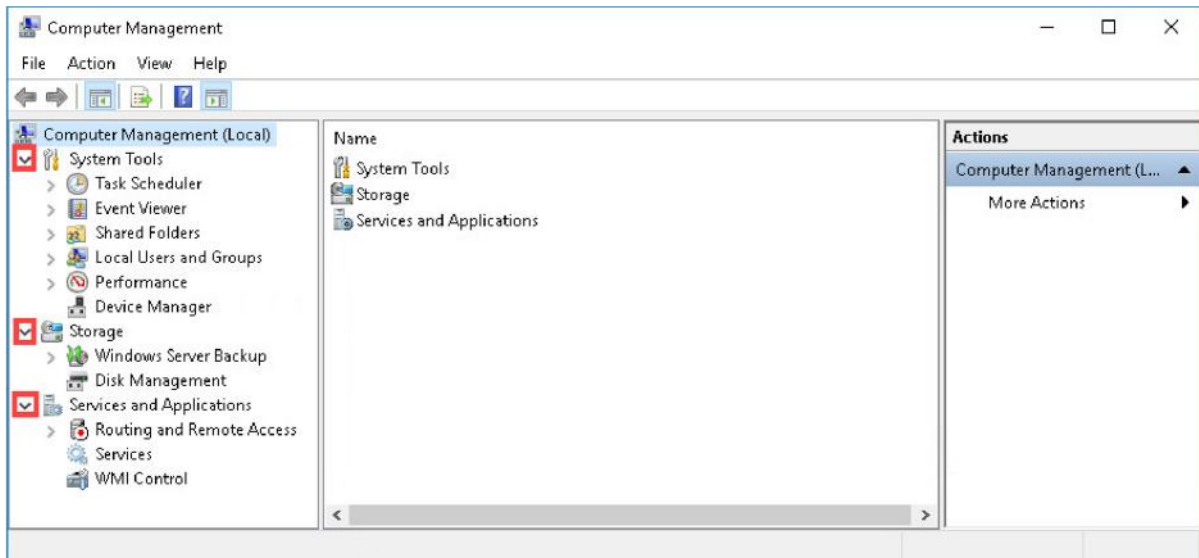
The Computer Management is used to manage a local or remote computer. The tools in this utility are grouped into three categories: system tools, storage, and services and applications.

- a. Navigate to **Control Panel > Administrative Tools**. Select **Computer Management**.

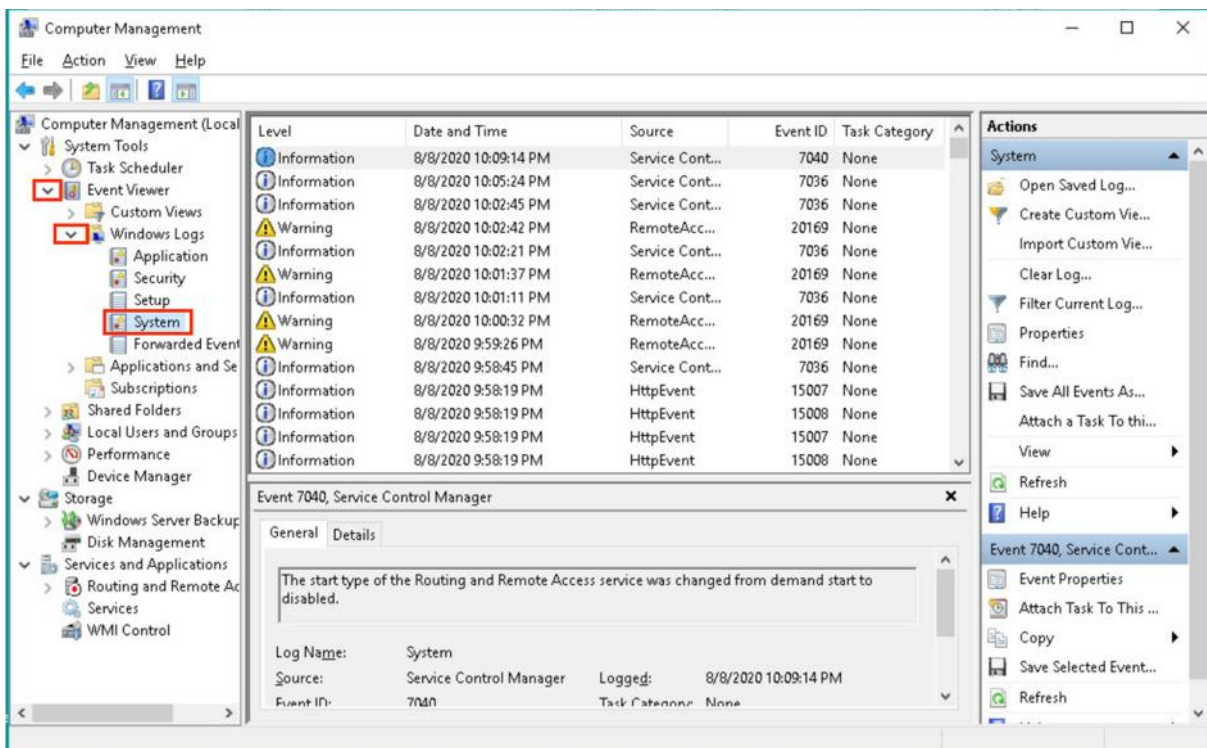


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- b. In the **Computer Management** window, expand the three categories (*System Tools*, *Storage*, and *Service and Applications*) by clicking on their respective **arrows**.

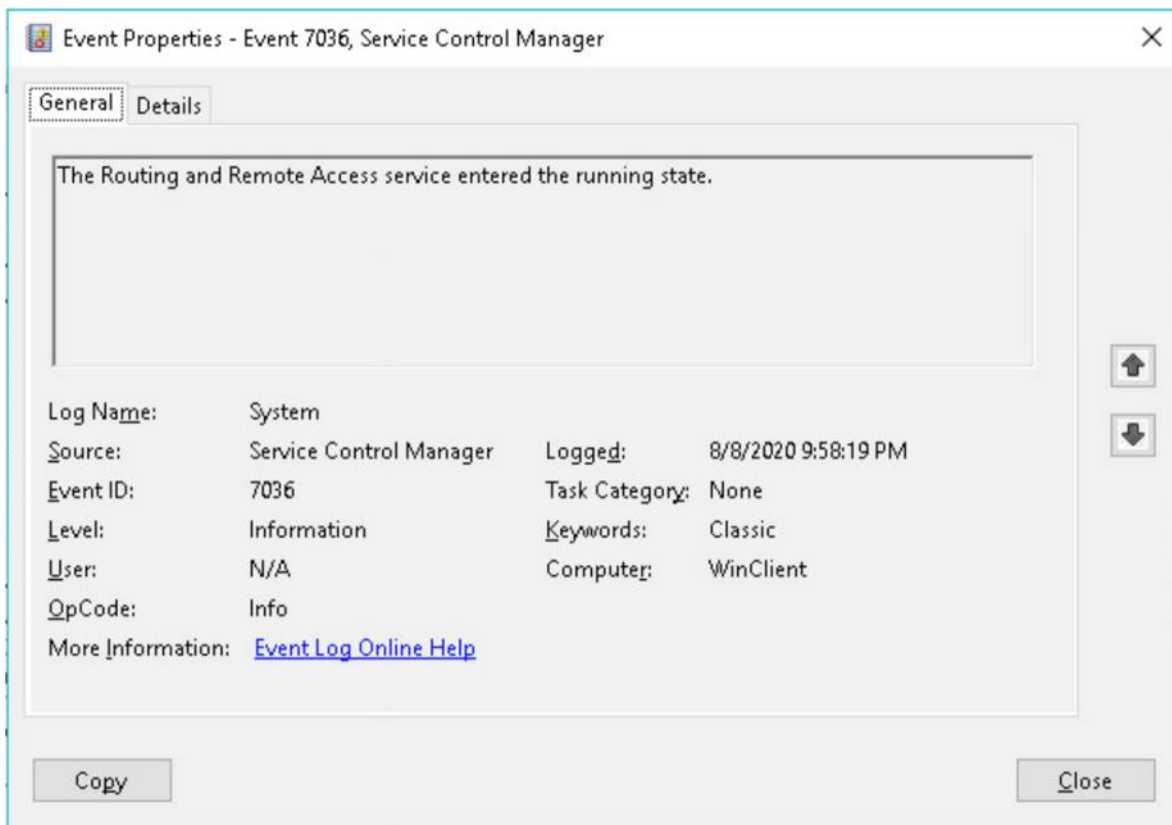


- c. Click the arrow next to **Event Viewer** then click the arrow next to **Windows Logs**. Select **System**.



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- d. Double-click to open the **Event Properties** window for the first event. Click the **down arrow** key to locate an event for **Routing and Remote Access**. You should find four events that describe the order for starting and stopping the **Routing and Remote Access** service.



What are the descriptions for each of the four events?

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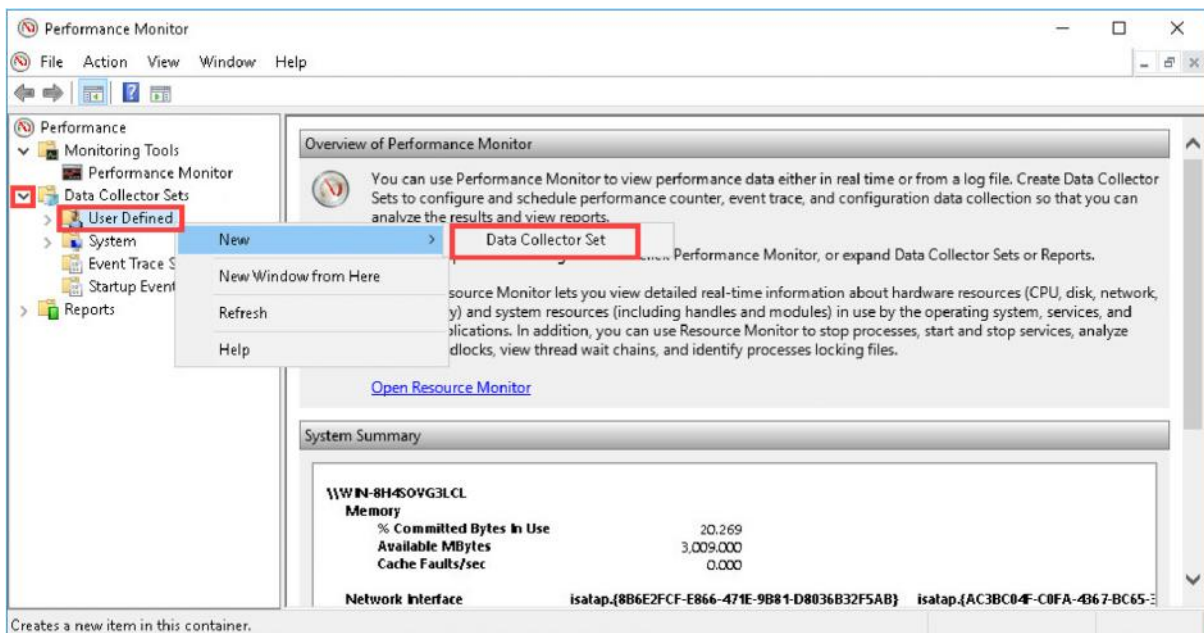
- e. Close all open windows.

## Part 3: Configuring Administrative Tools

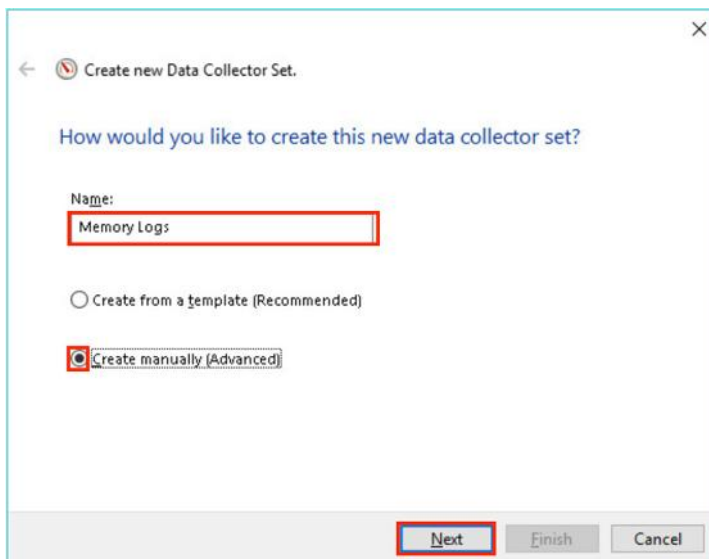
For the rest of this lab, you will configure Advanced Administrative Tool features and monitor how this affects the computer.

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- a. Navigate to **Control Panel > Administrative Tools > Performance Monitor**. The Performance Monitor window opens. Expand **Data Collector Sets**. Right-click **User Defined**, and select **New > Data Collector Set**.



- b. The *Create new Data Collector Set* window opens. In the *Name* field, type **Memory Logs**. Select the **Create manually (Advanced)** radio button and click **Next**.



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- c. In the **What type of data do you want to include?** window, check the **Performance counter** box then click **Next**.

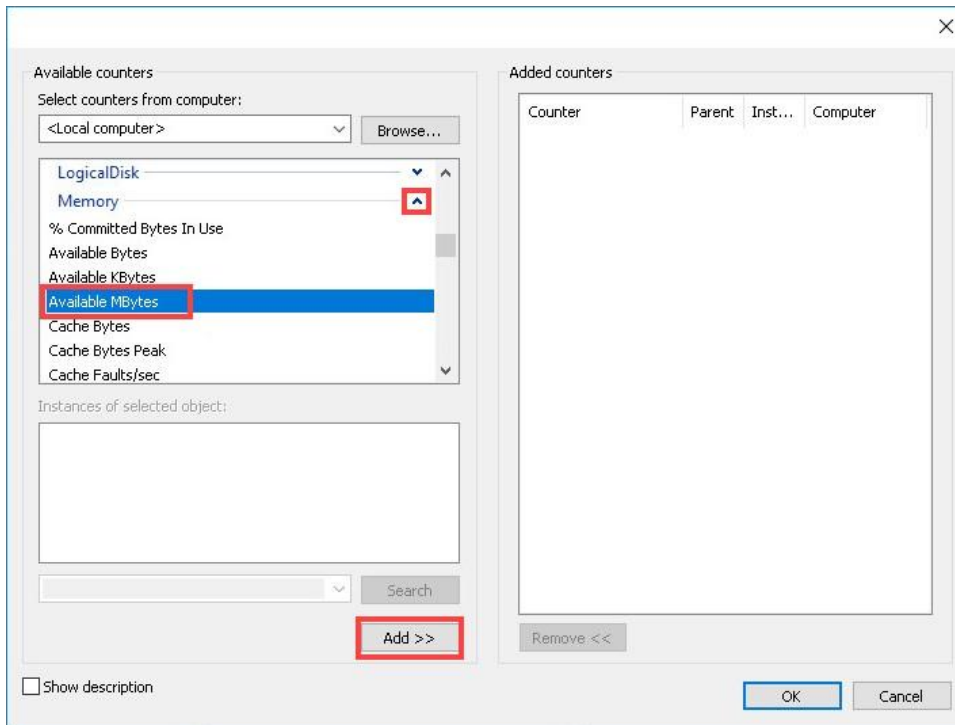
The screenshot shows the 'Create new Data Collector Set' wizard. The title bar says 'Create new Data Collector Set.' with a back arrow and a close button. The main heading is 'What type of data do you want to include?'. There are two main options: 'Create data logs' (selected with a radio button) and 'Performance Counter Alert' (unselected). Under 'Create data logs', there are three checkboxes: 'Performance counter' (checked), 'Event trace data' (unchecked), and 'System configuration information' (unchecked). At the bottom, there are three buttons: 'Next' (highlighted with a red box), 'Finish', and 'Cancel'.

- d. In the **Which performance counters would you like to log?** window, click **Add**.

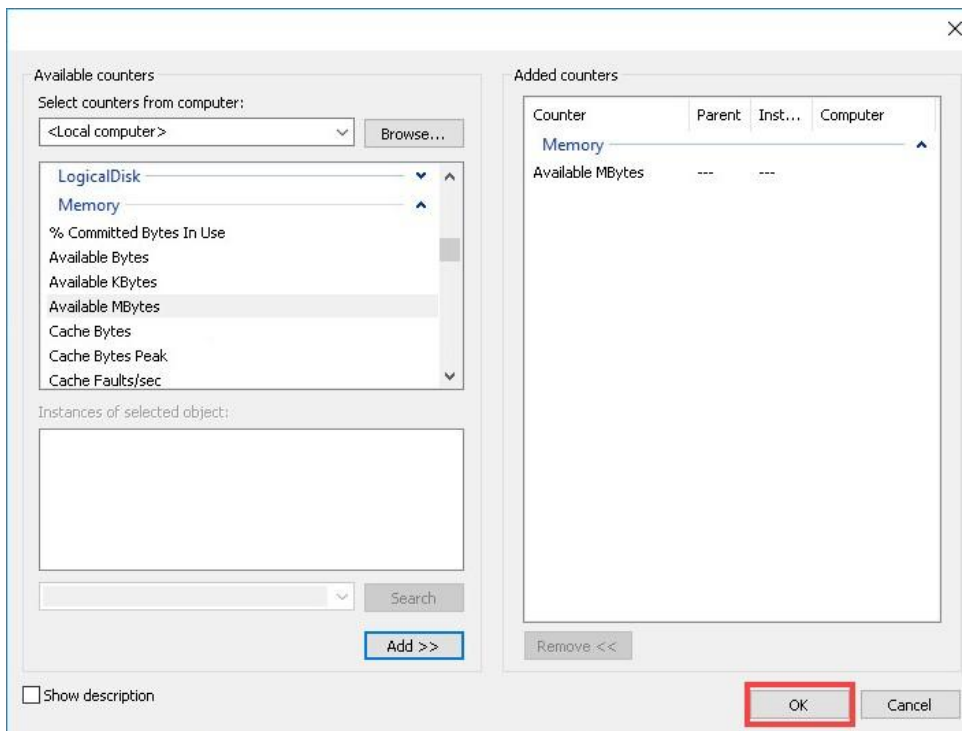
The screenshot shows the 'Create new Data Collector Set' wizard. The title bar says 'Create new Data Collector Set.' with a back arrow and a close button. The main heading is 'Which performance counters would you like to log?'. There is a section labeled 'Performance counters:' with an empty list box. To the right of the list box are two buttons: 'Add...' (highlighted with a red box) and 'Remove'. Below the list box, there are two fields: 'Sample interval:' with a spinner box set to '15' and 'Units:' with a dropdown menu set to 'Seconds'. At the bottom, there are three buttons: 'Next' (highlighted with a blue box), 'Finish', and 'Cancel'.

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- e. From the list of available counters, locate and expand **Memory**. Select **Available MBytes** and click **Add>>**.



- f. You should see the **Available MBytes** counter added in the right pane. Click **OK**.



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- g. Set the Sample interval field to **4** seconds. Click **Next**.

The screenshot shows the 'Create new Data Collector Set' wizard. The title bar says 'Create new Data Collector Set.' with a back arrow and a close button. The main heading is 'Which performance counters would you like to log?'. Below this, there is a section 'Performance counters:' with a list box containing '\Memory\Available MBytes'. To the right of the list box are 'Add...' and 'Remove' buttons. Below the list box, there are two fields: 'Sample interval:' with a spinner box set to '4', and 'Units:' with a dropdown menu set to 'Seconds'. At the bottom right, there are three buttons: 'Next', 'Finish', and 'Cancel'. The 'Next' button is highlighted with a red rectangle.

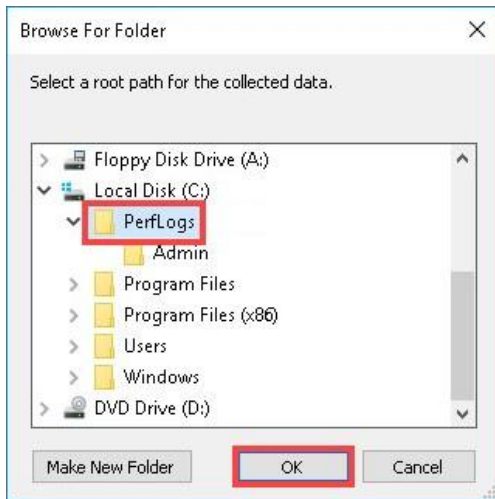
- h. In the **Where would you like the data to be saved?** screen, click **Browse**.

The screenshot shows the 'Create new Data Collector Set' wizard. The title bar says 'Create new Data Collector Set.' with a back arrow and a close button. The main heading is 'Where would you like the data to be saved?'. Below this, there is a section 'Root directory:' with a text box containing '%systemdrive%\PerfLogs\Admin\Memory Logs'. To the right of the text box is a 'Browse...' button. At the bottom right, there are three buttons: 'Next', 'Finish', and 'Cancel'. The 'Browse...' button is highlighted with a red rectangle.

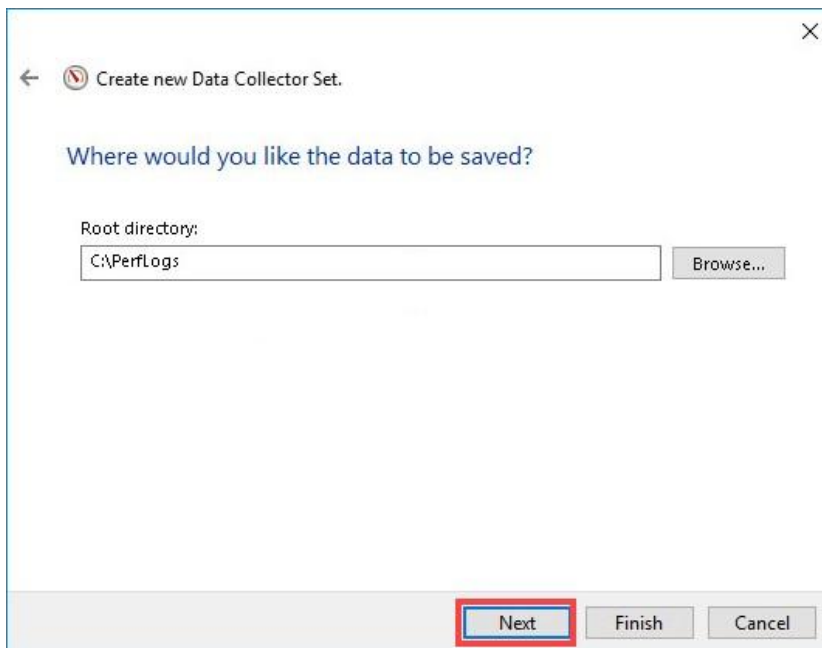


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- i. In the **Browse For Folder** window, select your **(C:)** drive which is **Local Disk (C:)**. Select **PerfLogs** and click **OK**.

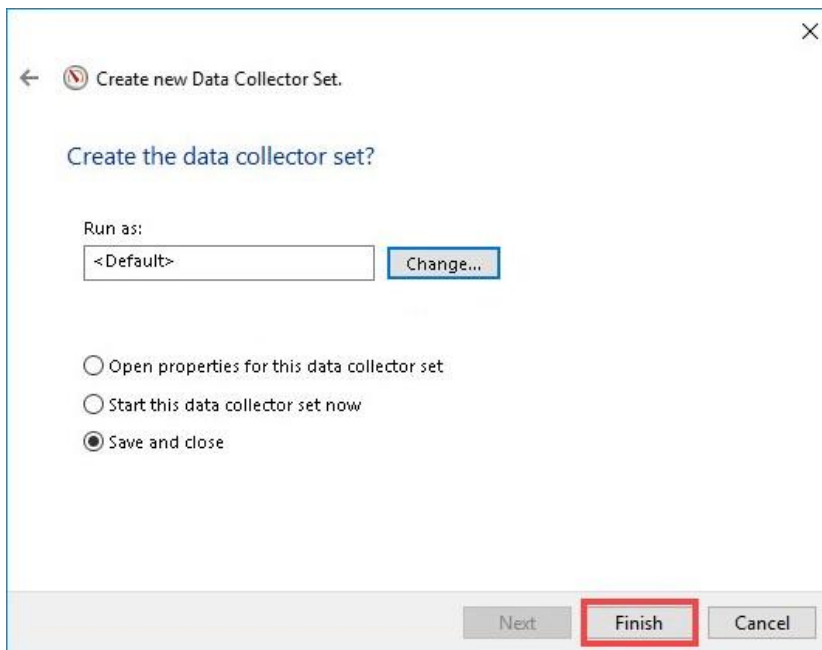


- j. The **Where would you like the data to be saved?** window opens with the directory information that you selected in the previous step. Click **Next**.

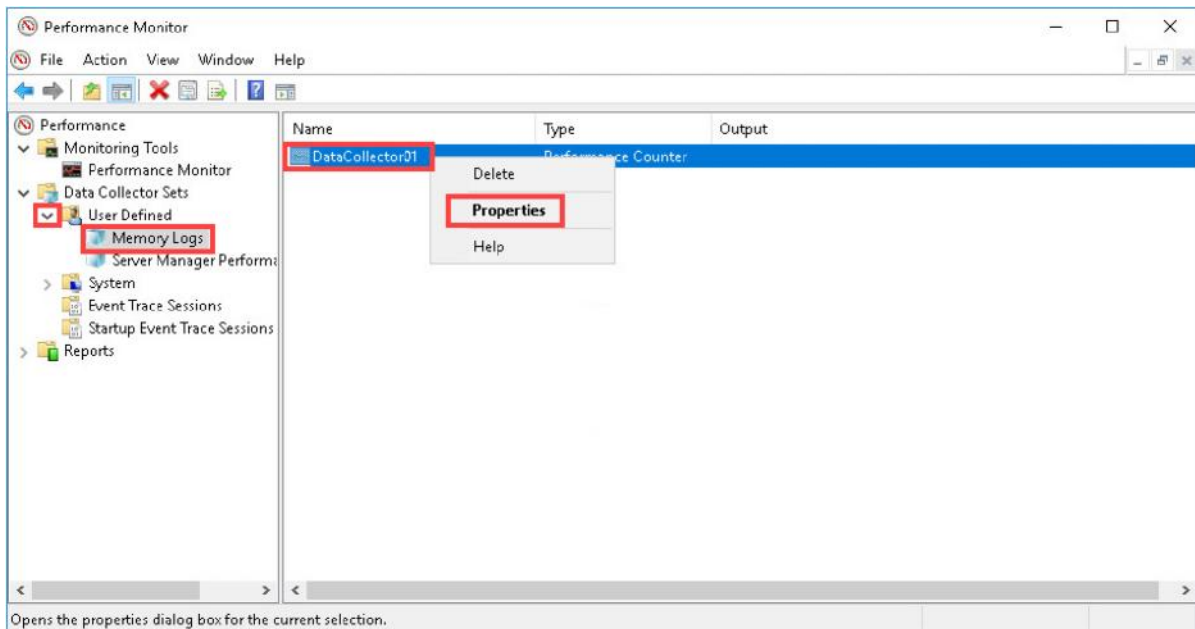


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- k. In the **Create the data collector set?** screen, click **Finish**.

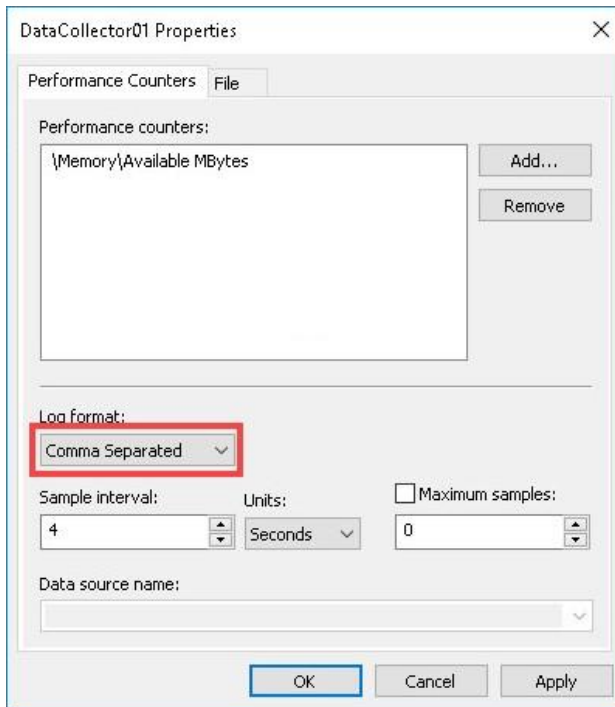


- l. Expand **User Defined** and select **Memory Logs**. Right-click **Data Collector01** and select **Properties**.

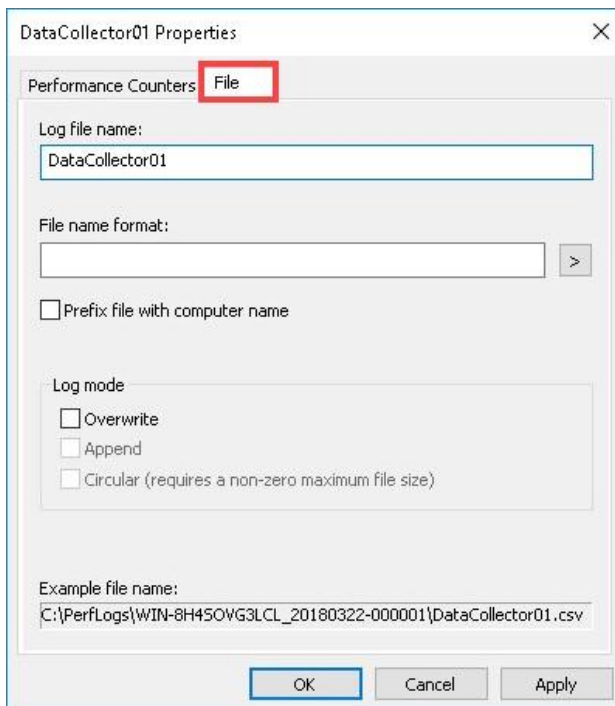


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- m. In the *DataCollector01 Properties* window, change the **Log format:** field to **Comma Separated**.



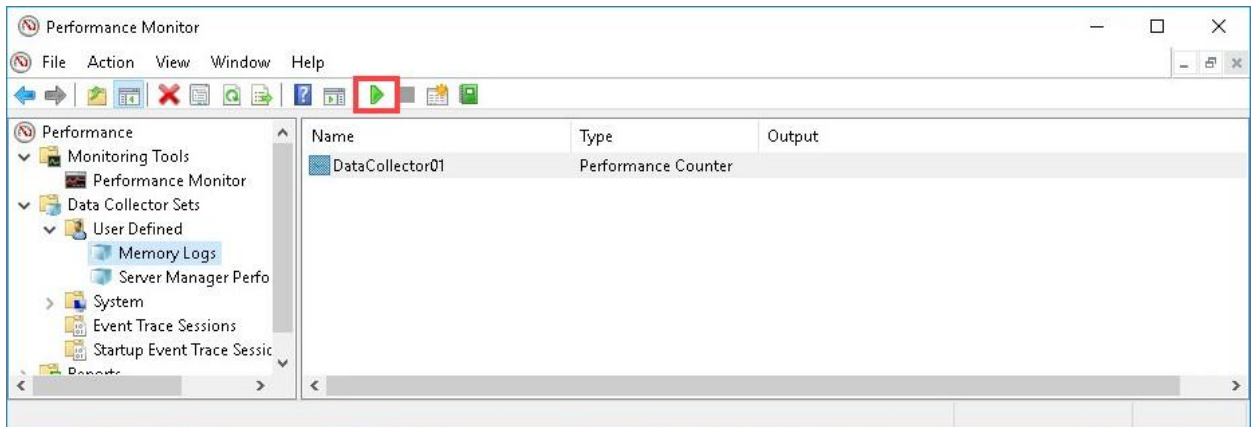
- n. Click the **File** tab.



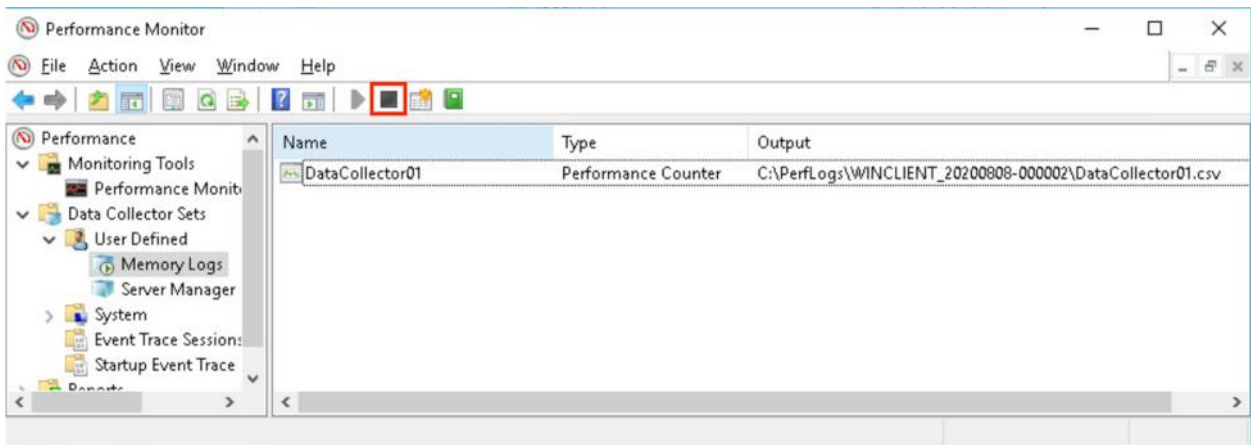
What is the full path name to the example file?

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- o. Click **OK**.
- p. Select the **Memory Logs** icon in the left pane of the **Performance Monitor** window. Click the **green arrow** icon to start the data collection set. Notice a green arrow is placed on top of the **Memory Logs** icon.



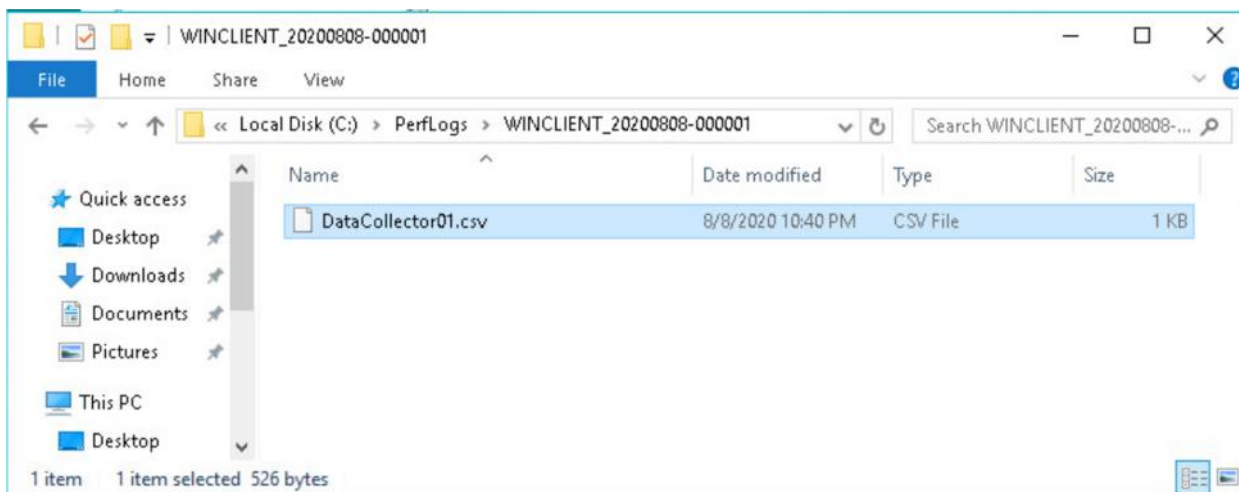
- q. To force the computer to use some of the available memory, open and close a browser.
- r. Click the **black square** icon to stop the data collection set.



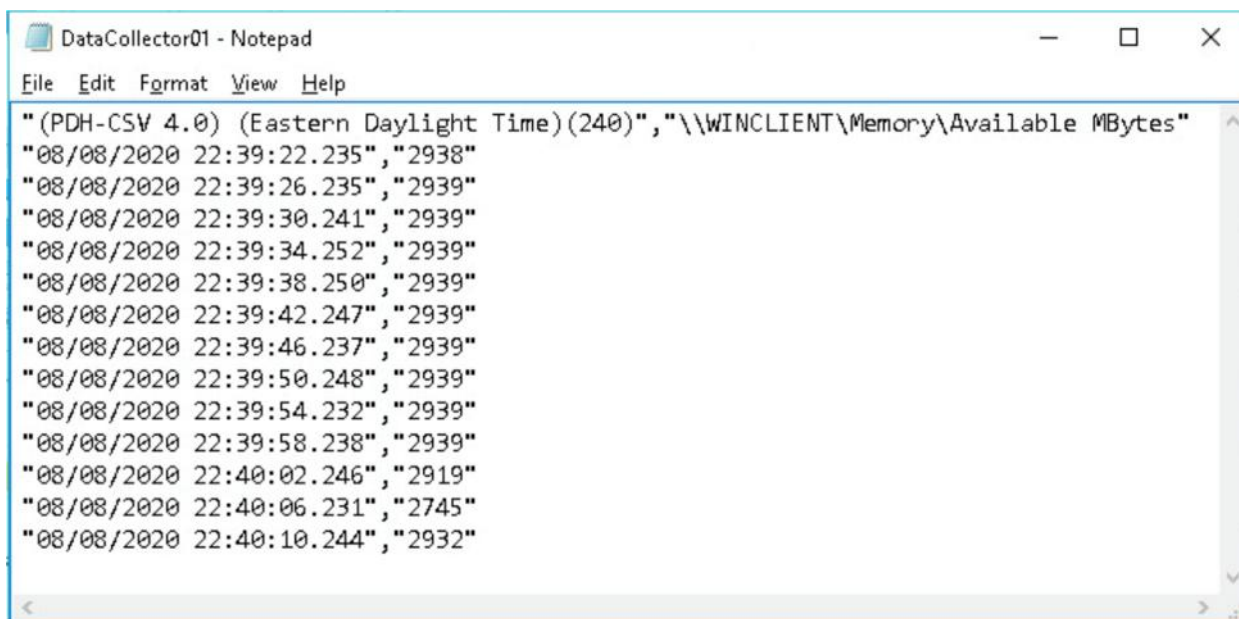
What change do you notice for the Memory Logs icon?

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- s. Launch **File Explorer** and navigate to **drive C: > PerfLogs**. Locate the folder that starts with your PC's name followed by a timestamp, **WINCLIENT\_20200808-000001** in the example. Double-click the folder to open it, and then double-click the **DataCollector01.csv** file. **If prompted, click Continue to permit access to the folder.**



**Note:** If the **How do you want to open this file?** message is displayed, select **Notepad** and click **OK**.

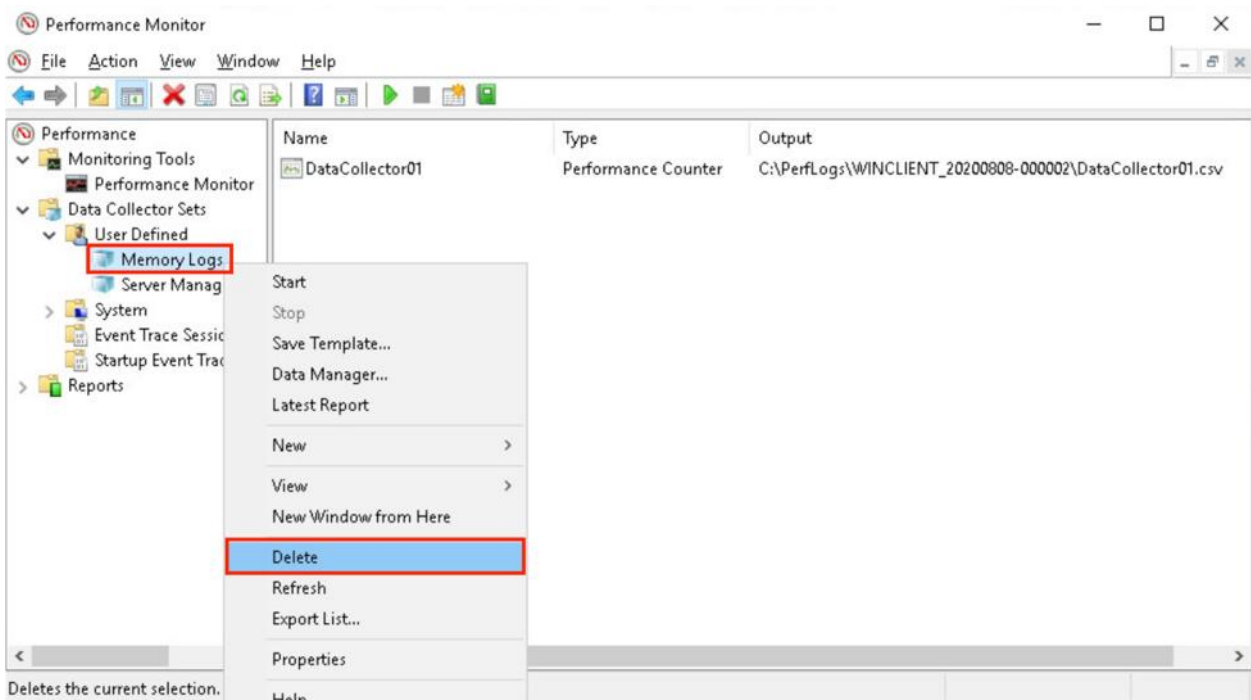


What does the column farthest to the right show?

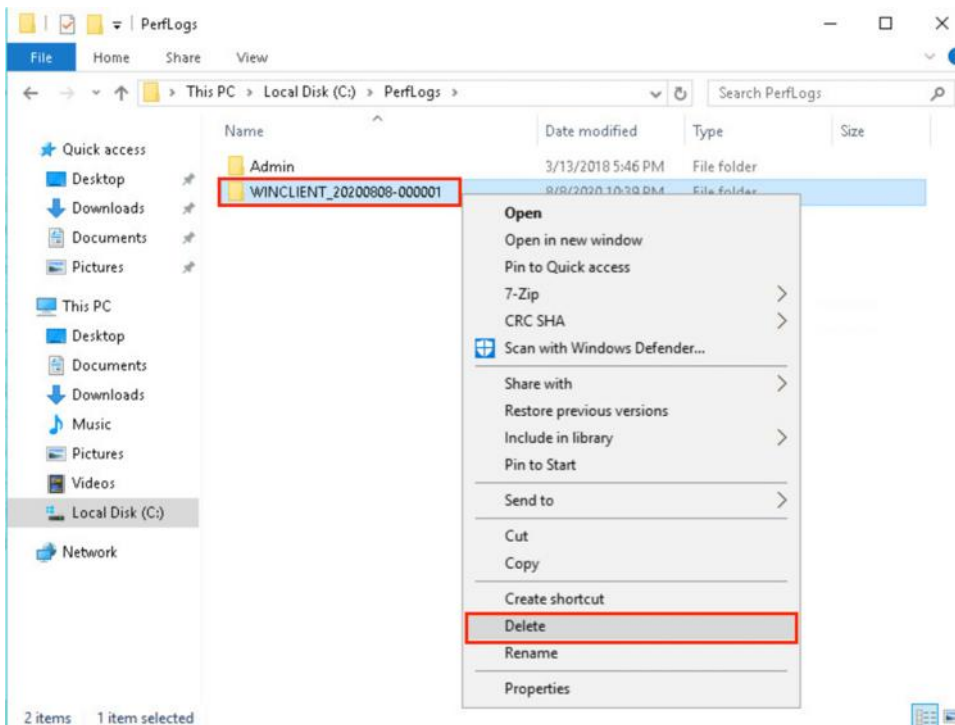
- t. Close the **DataCollector01.csv** file and the window with the PerfLogs folder.

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- u. Select the **Performance Monitor** window. Right-click **Memory Logs** > **Delete**.



- v. The **Performance Monitor** > **Confirm Delete** window opens. Click **Yes**.
- w. Open drive **C:** > **PerfLogs** folder. Right-click on the folder that was created to hold the Memory log file, then click **Delete**.



- x. If the **Delete Folder** window opens. Click **Yes**.
- y. Close all open windows.