

Lab - Monitor and Manage System Resources in Windows 7 and Vista

Introduction

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

Recommended Equipment

- The following equipment is required for this exercise:
- A computer running Windows 7 or Vista with Internet access

Step 1: Stopping and starting a service.

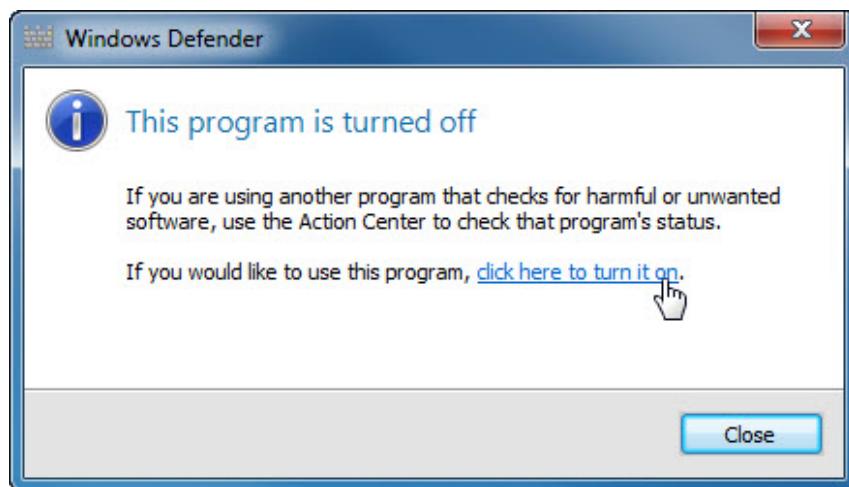
You will explore what happens when a service is stopped then started.

- a. Log on to Windows as an administrator.

Note: Some antivirus or antispyware programs must be uninstalled on the computer for Windows Defender to work.

- b. To see if Windows Defender is turned off click **Start**. In the **Search programs and files** field, type **Defender** and select **Windows Defender**.

If the **This program is turned off** message is displayed, click the **click here to turn it on** link.

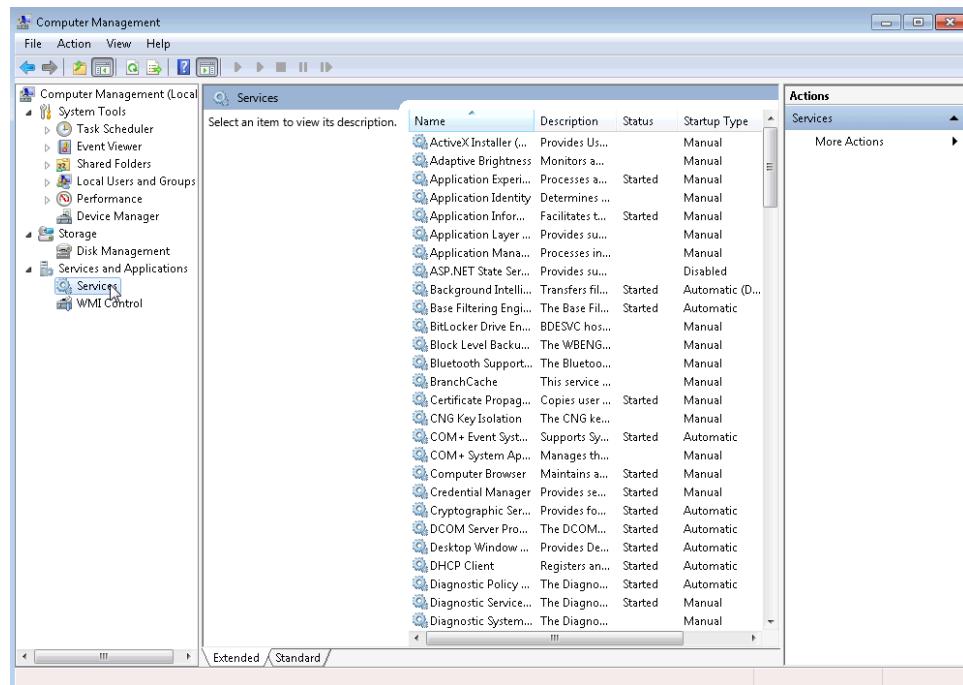


Note: Windows Defender should start, if not, uninstall any antivirus or antispyware programs and re-open Windows Defender.

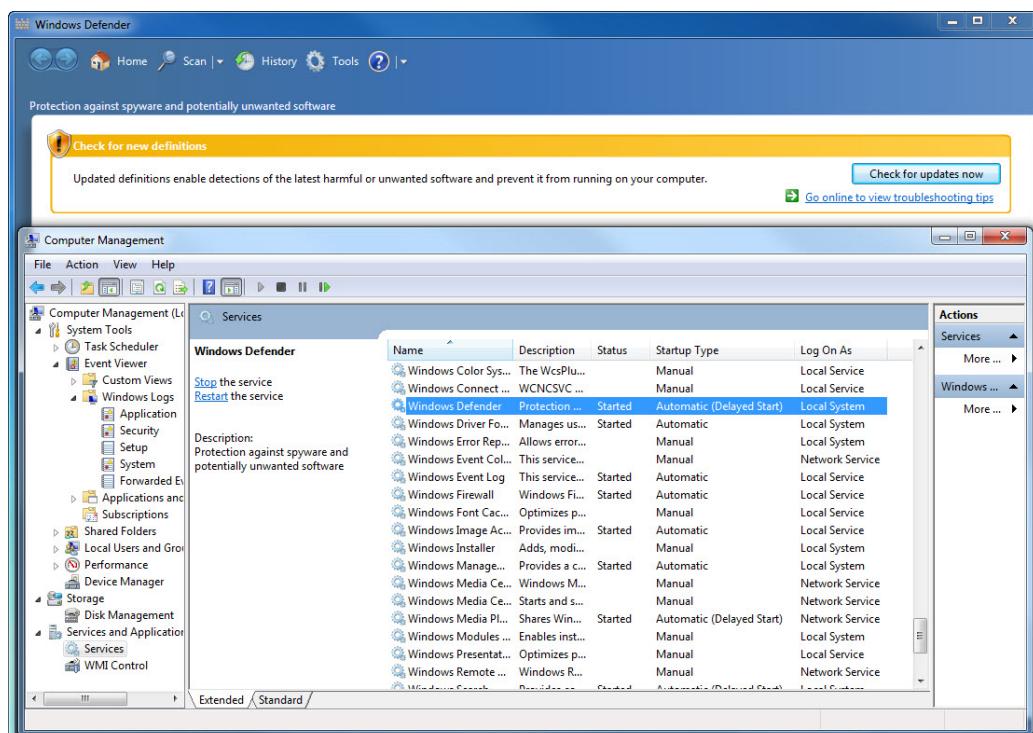
- c. Click **Control Panel > Administrative Tools > Computer Management**.

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- d. The Computer Management window opens. Click the arrow to the left of **Services and Applications**, and select **Services**.



- e. Resize and position the **Windows Defender** and **Computer Management** windows so they can be seen at the same time.



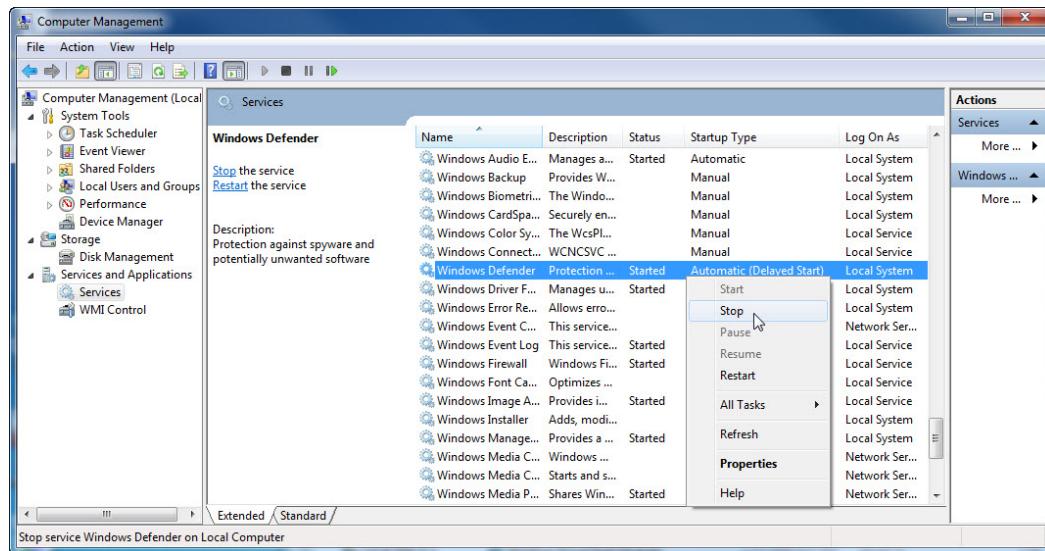
Can Windows Defender check for updates?

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- f. Scroll the **Computer Management** window so you see the **Windows Defender** service.

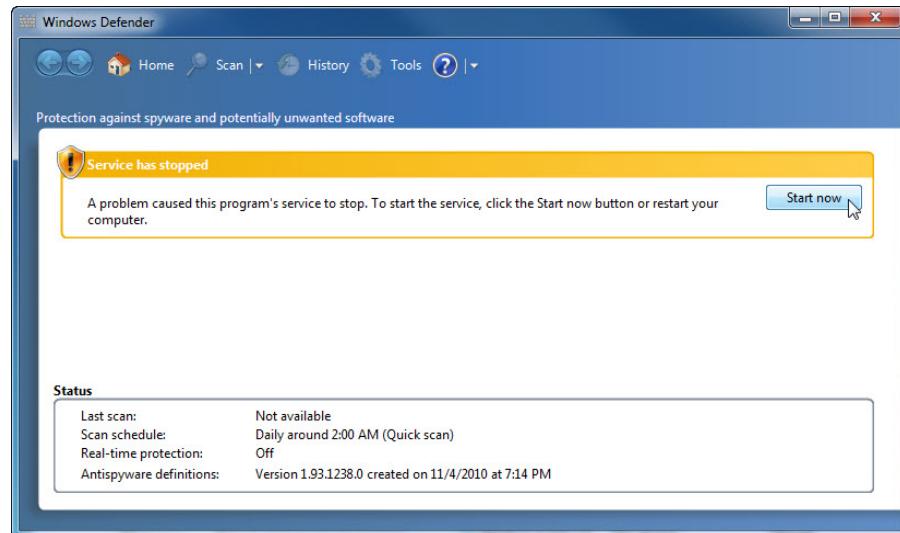
What is the status of the service?

- g. Right-click the **Windows Defender** service, and select **Stop**.



Note: The reason this service will be stopped is so that you can easily see the results. When stopping a service, to free up system resources the service uses, it is important to understand how the overall system operation will be affected.

- h. The **Service Control** window opens and closes. Select the Windows Defender window to make it active.

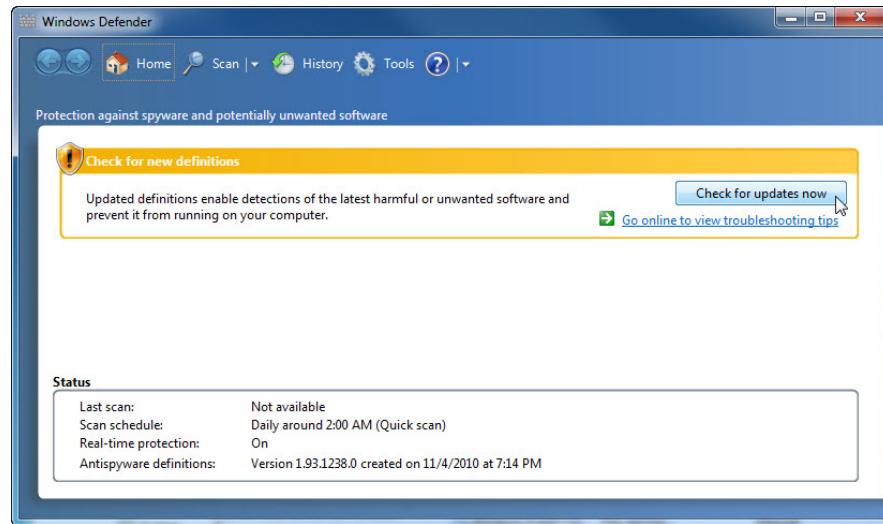


What is the status of the Windows Defender service?

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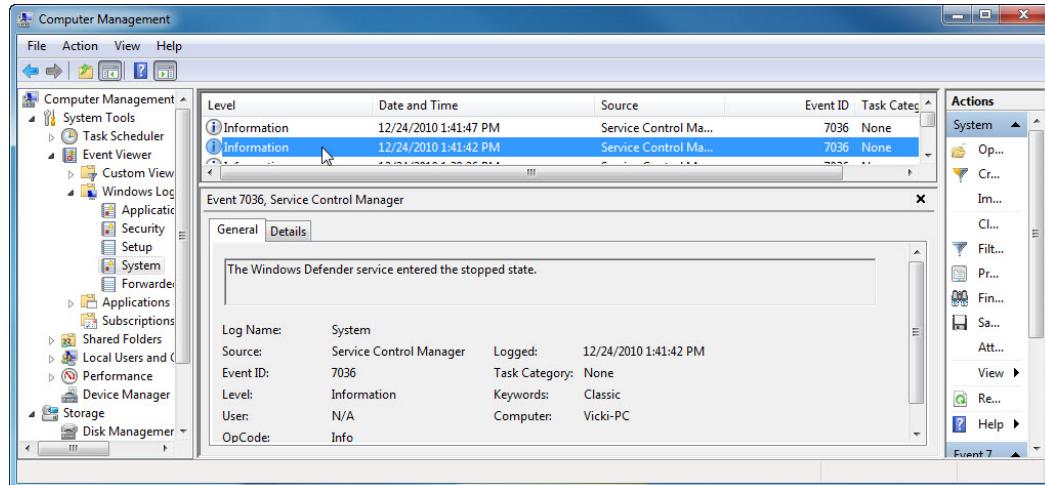
- i. Start the Windows Defender service by clicking **Start now**.

Note: Windows Vista requires that you start Windows Defender from the **Computer Management** window. Right-click the **Windows Defender** service, and click **Start**.



Can Windows Defender check for updates?

- j. Close the **Windows Defender** window but keep the **Computer Management** window open.
- k. Expand **Event Viewer > Windows Logs**, then select **System**.

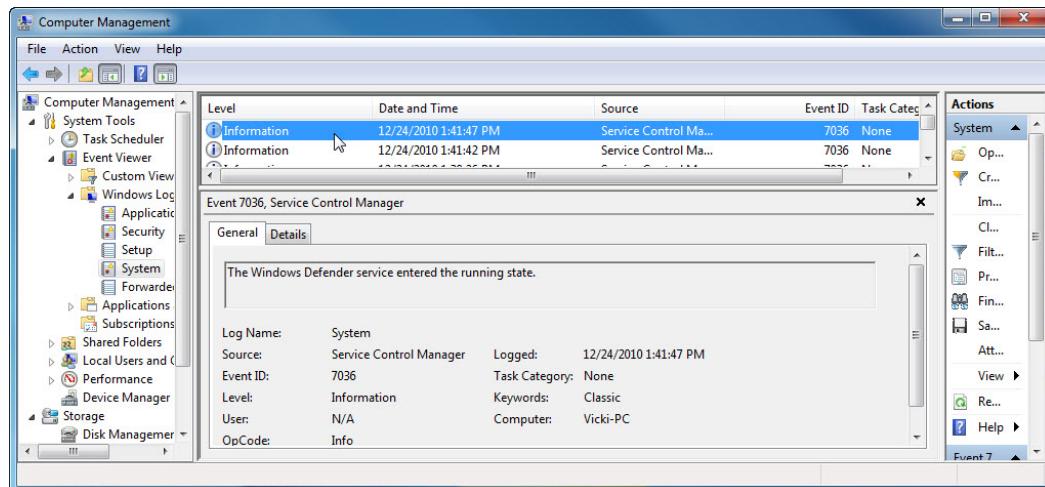


- l. Select the second event in the list.

Look below the General tab. Explain what has happened to the Windows Defender service.

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- m. Click the up arrow button on the keyboard or select the event above the one you just viewed.

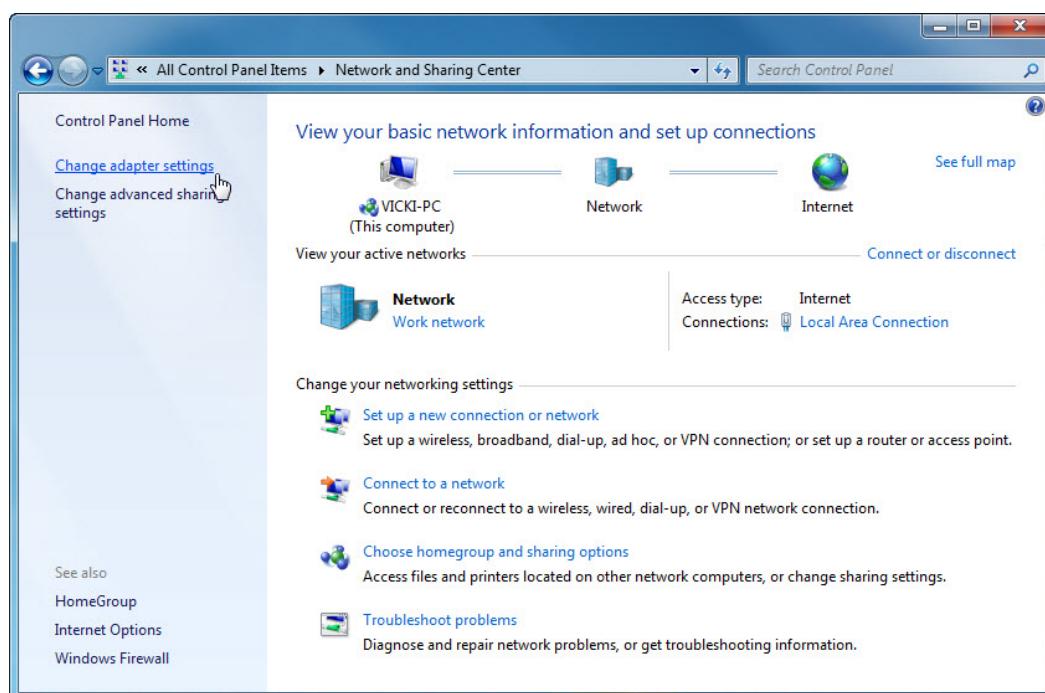


- n. Close all open windows.

Step 2: Starting and stopping the Routing and Remote Access service.

You will explore what happens when a service is stopped then started.

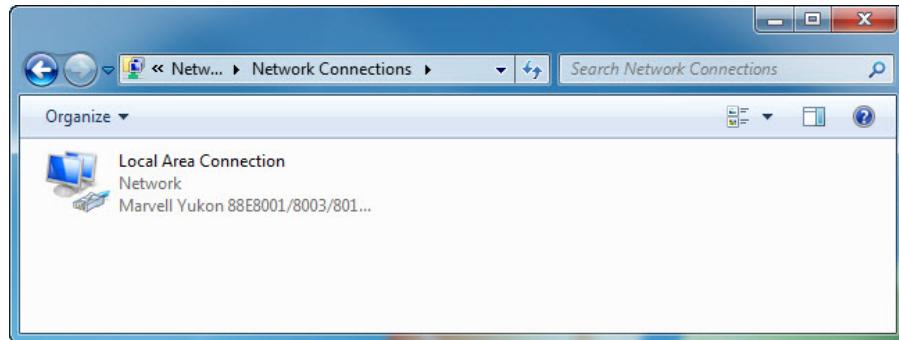
- a. Navigate to the **Network and Sharing Center** window by clicking **Network > Network and Sharing Center**.



Note: If Network is not shown in the Start menu, complete the following: Right-click **Start > Properties > Start Menu** tab. Click **Customize**, and then scroll down the list to **Network**. Place a check mark next to Network, and then click **OK > OK**.

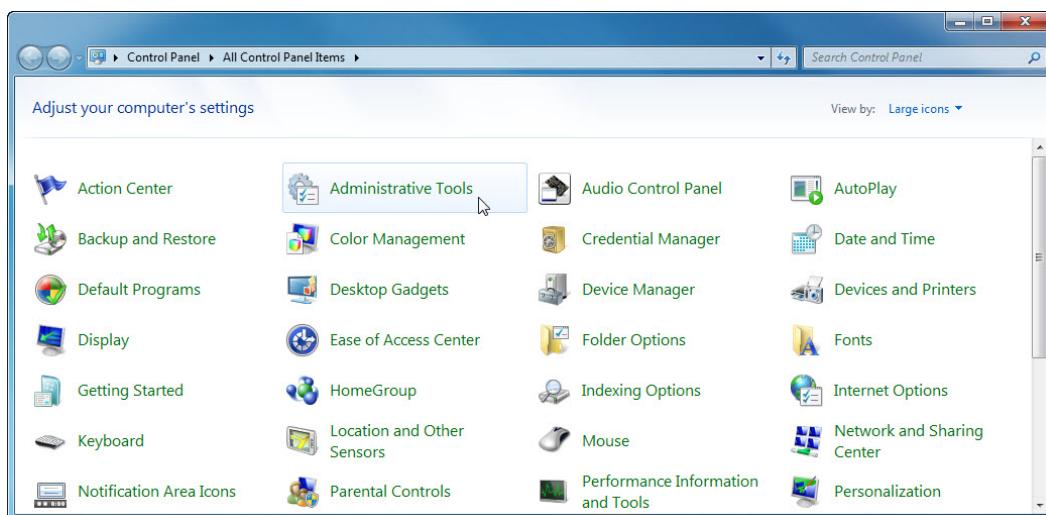
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- b. Click **Change adapter settings** in the left pane. Reduce the size of the **Network Connections** window and leave it open.

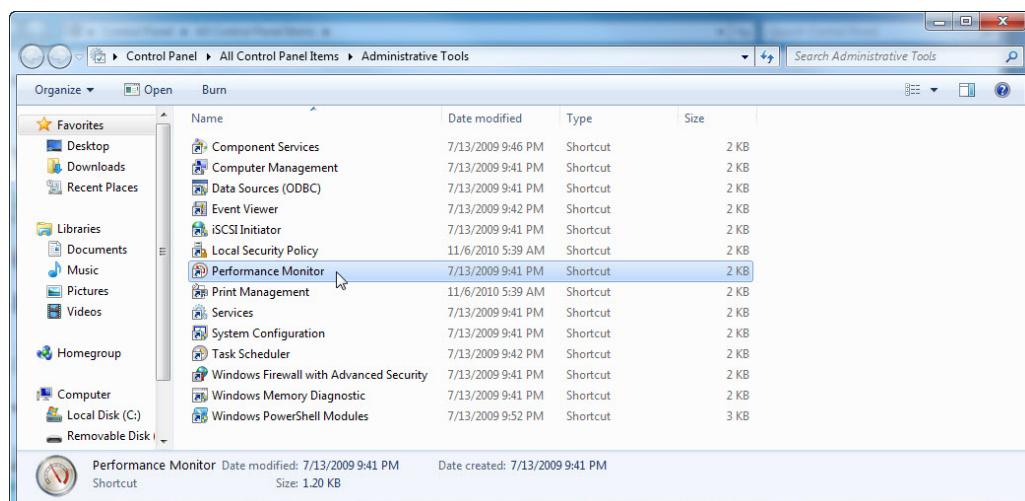


Note: For Windows Vista, click **Manage network connections**.

- c. Open the **Control Panel**.

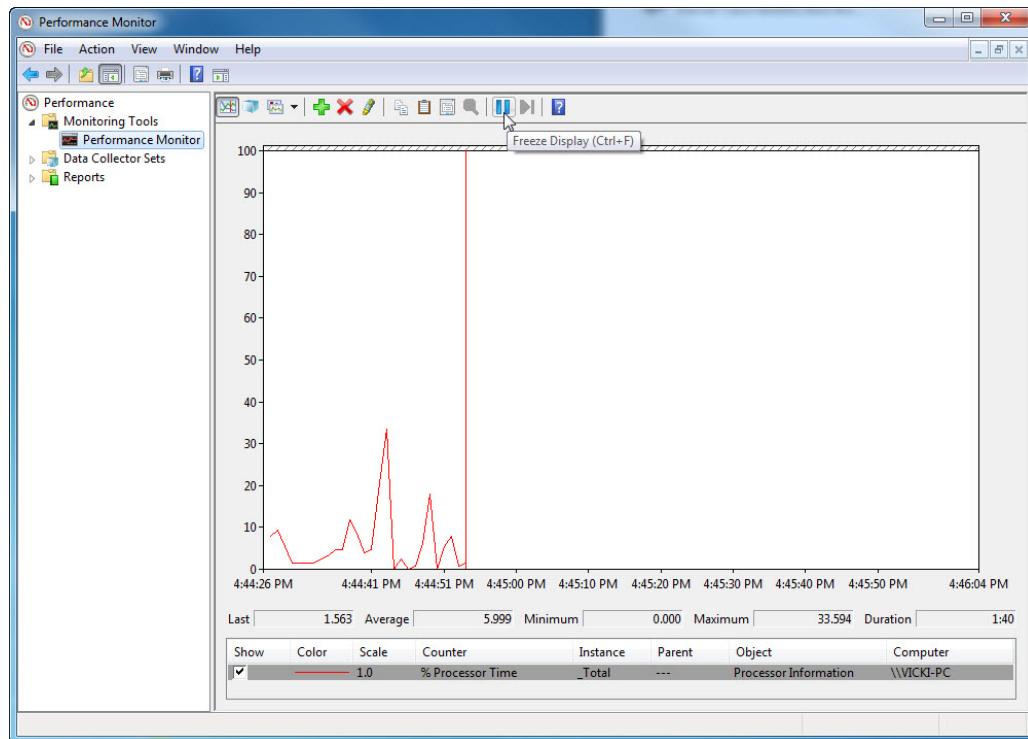


- d. Click the **Administrative Tools** icon.



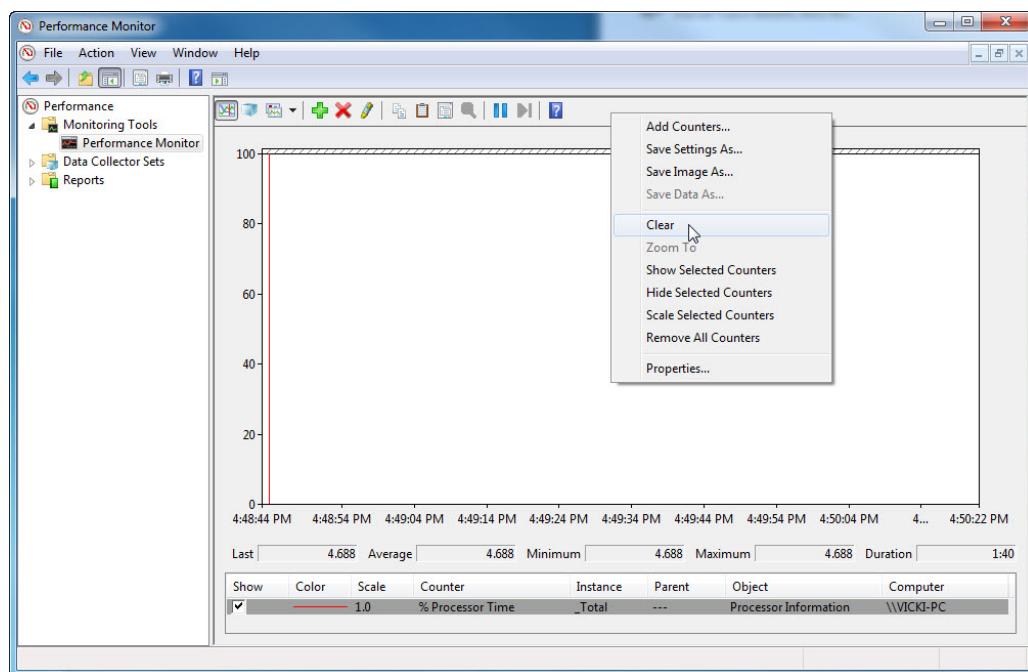
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- e. The **Administrative Tools** window opens. Double-click the **Performance Monitor** icon. The **Performance Monitor** window opens. Make sure **Performance Monitor** in the left pane is highlighted. Click the **Freeze Display** icon to stop the recording.



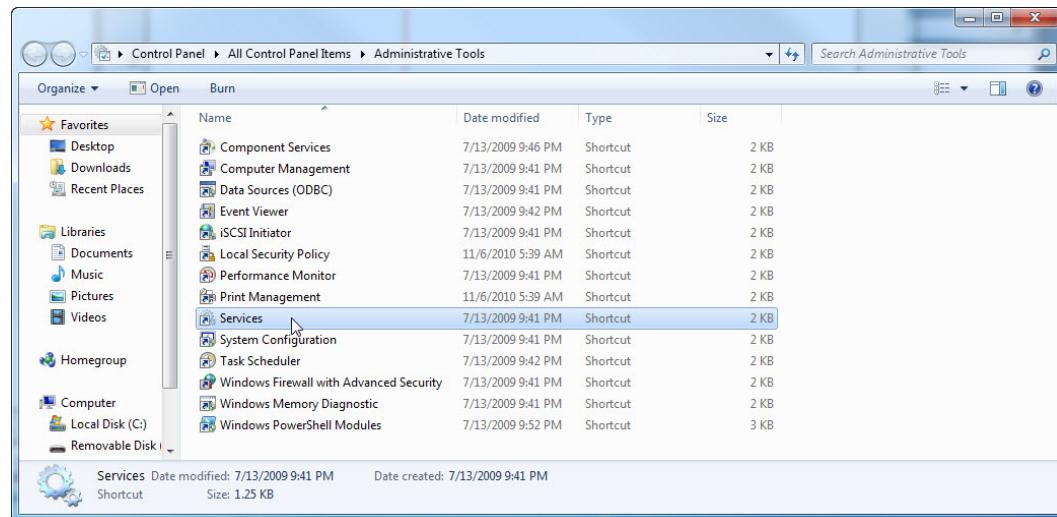
Note: In Windows Vista the tool is called **Reliability and Performance Monitor**.

- f. Right-click the **Performance Monitor** menu bar and select **Clear** to clear the graph. Leave this window open.



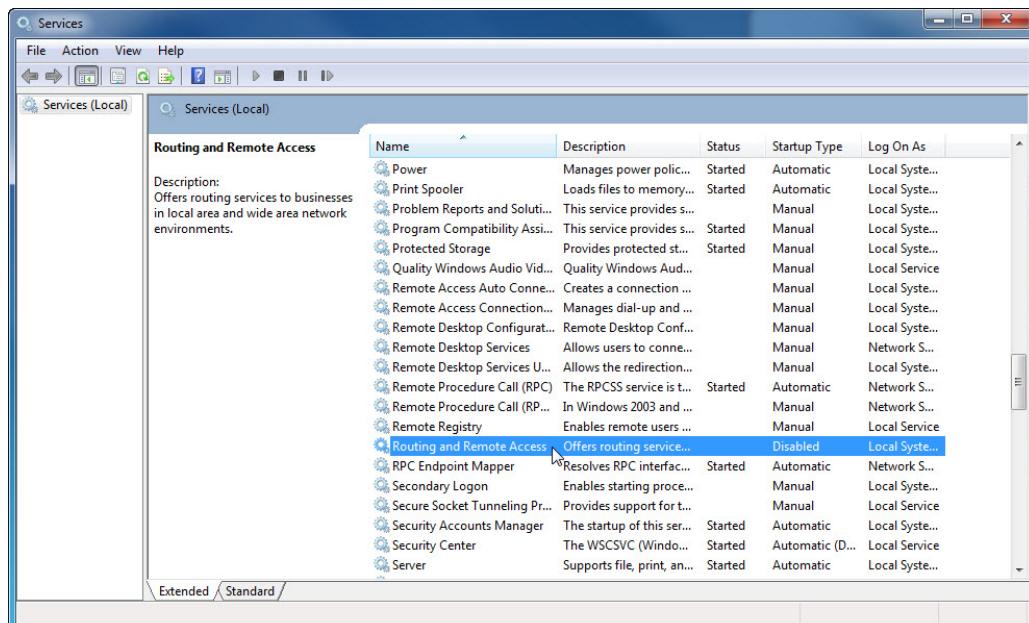
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- g. Navigate to the **Administrative Tools** window by clicking **Control Panel > Administrative Tools**.



- h. Double-click the **Services** icon.

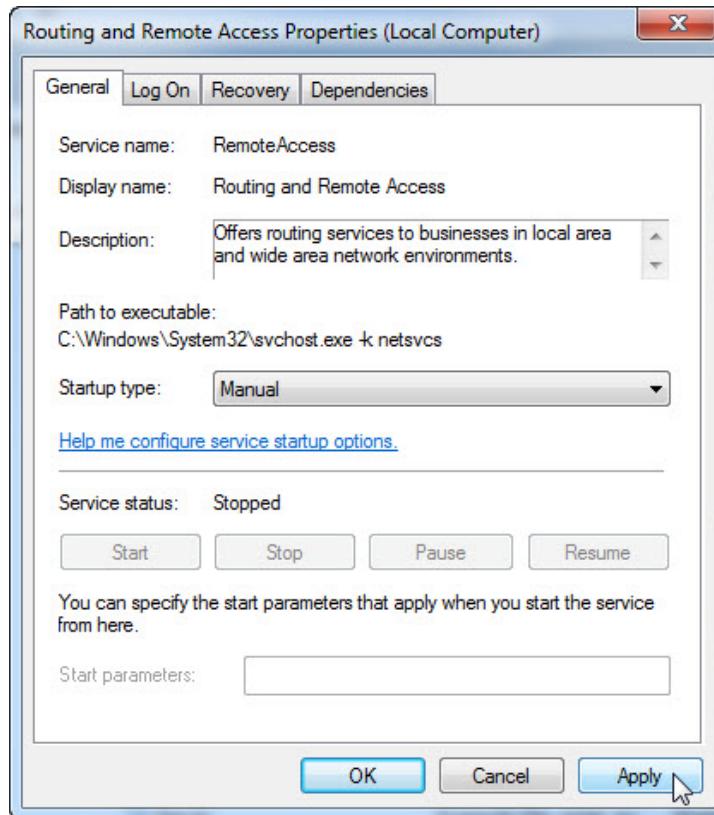
- i. Expand the width of the **Services** window so you have a clear view of the content. Scroll down in the right pane until you see the service Routing and Remote Access. Double-click **Routing and Remote Access**.



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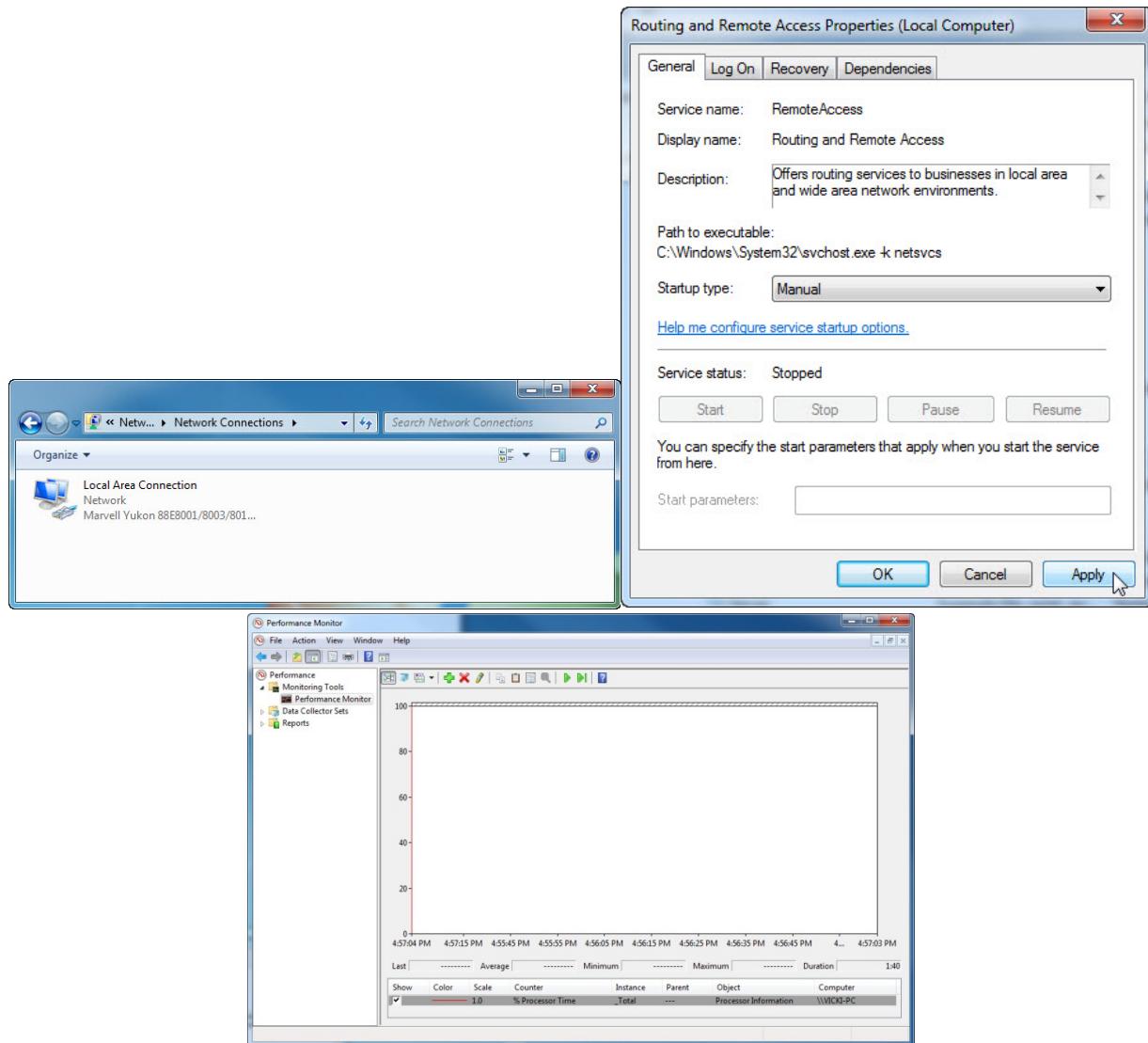
- j. The **Routing and Remote Access Properties (Local Computer)** window opens. In the **Startup type** dropdown field, select **Manual** and then click **Apply**.

Note: The Start button is now active; do not click the button yet. Leave this window open.



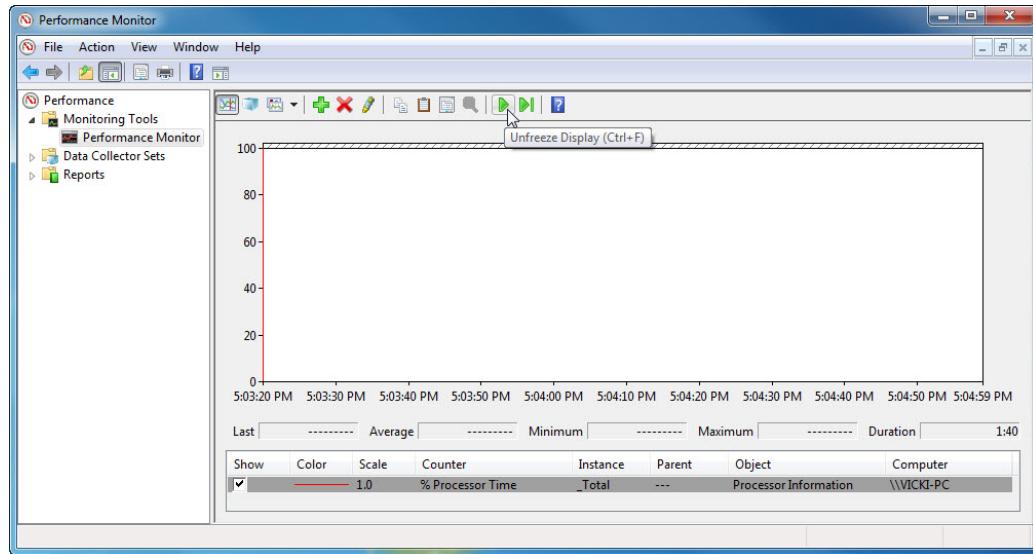
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- k. Position the **Network Connections**, **Routing and Remote Access Properties (Local Computer)**, and **Performance Monitor** windows so you can clearly see them at the same time.

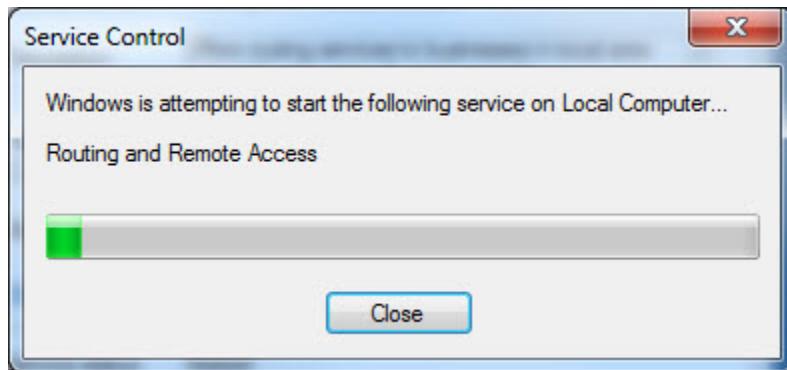


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- I. Click the **Performance Monitor** window to make it active. Click the **Unfreeze Display** icon to start the recording.

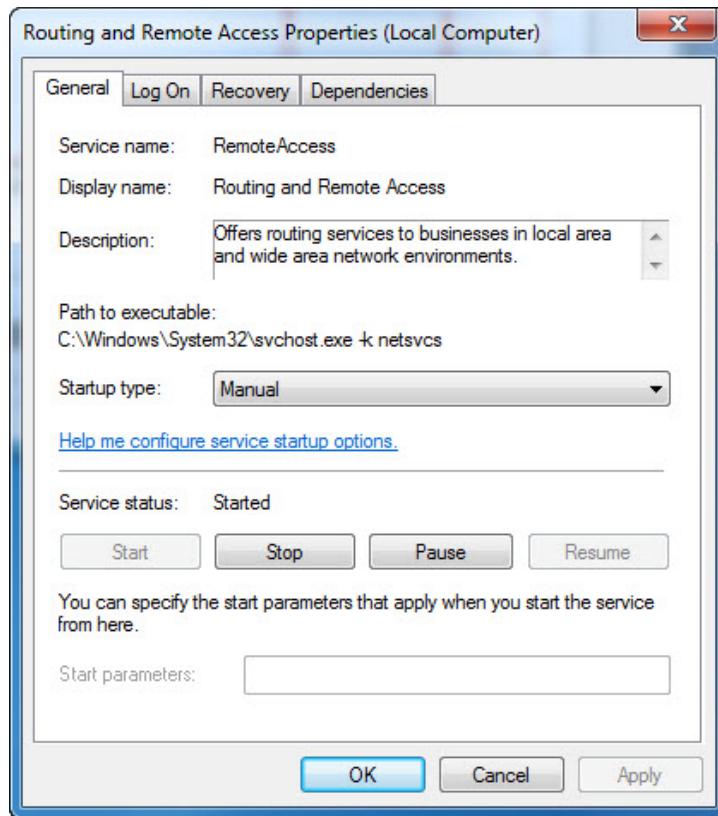


- m. Click the **Routing and Remote Access Properties (Local Computer)** window to make it active. To start the service click **Start**. A window with a progress bar opens.

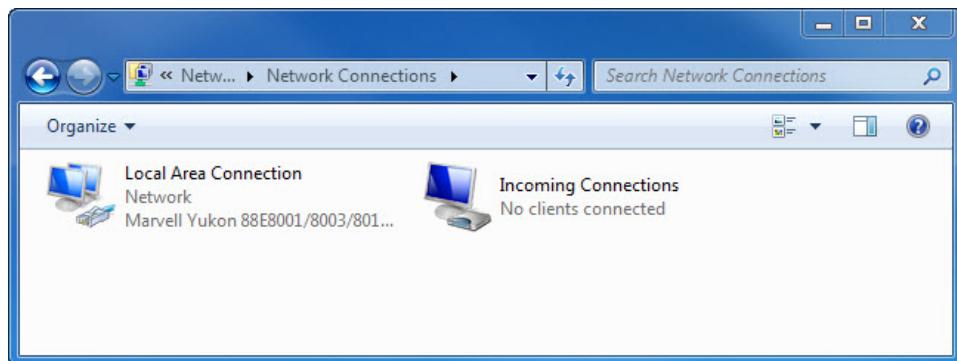


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- n. The **Routing and Remote Access Properties (Local Computer)** window now shows the Stop and Pause button active. Leave this window open



- o. Click the **Network Connections** window to make it active.

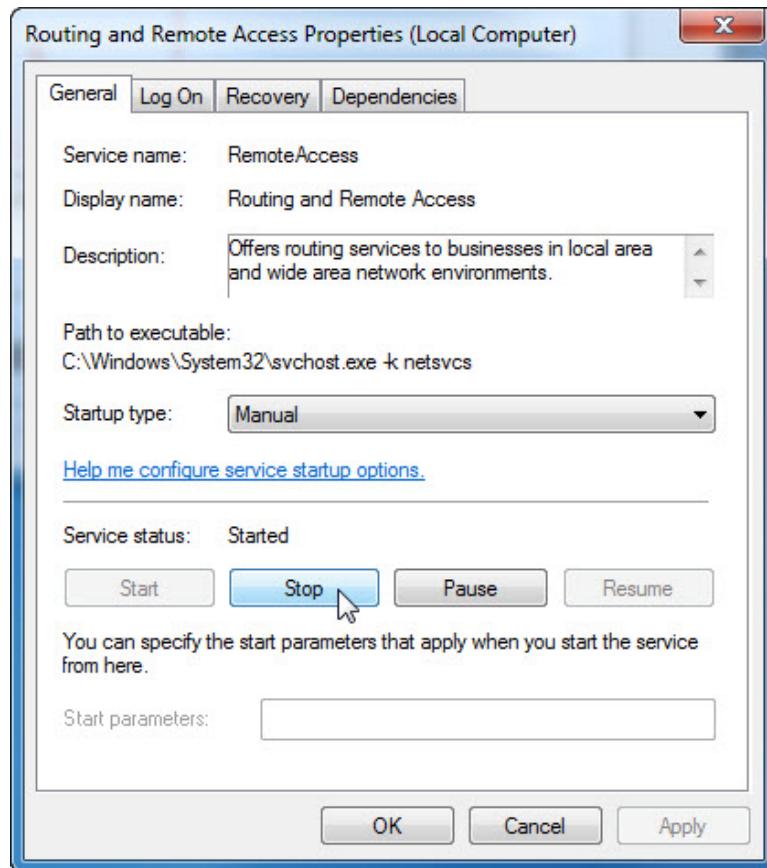


- p. Press the function key **F5** to refresh the content.

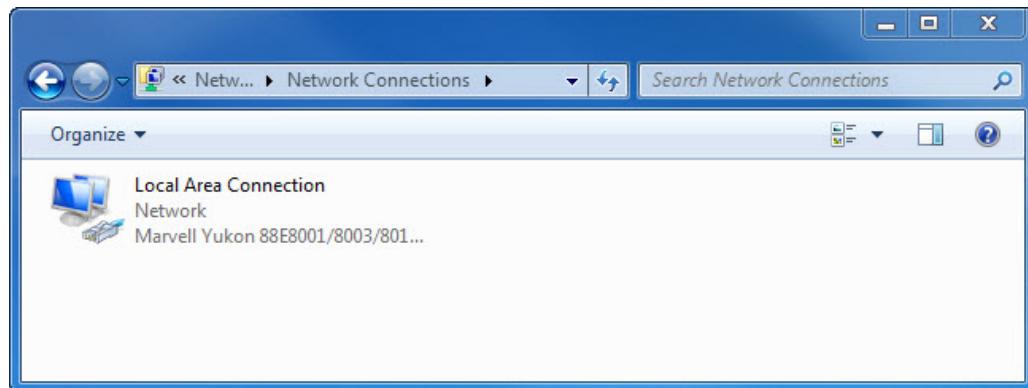
What changes appear in the right pane after starting the **Routing and Remote Access** service?

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- q. Click the **Routing and Remote Access Properties (Local Computer)** window to make it active and click **Stop**.



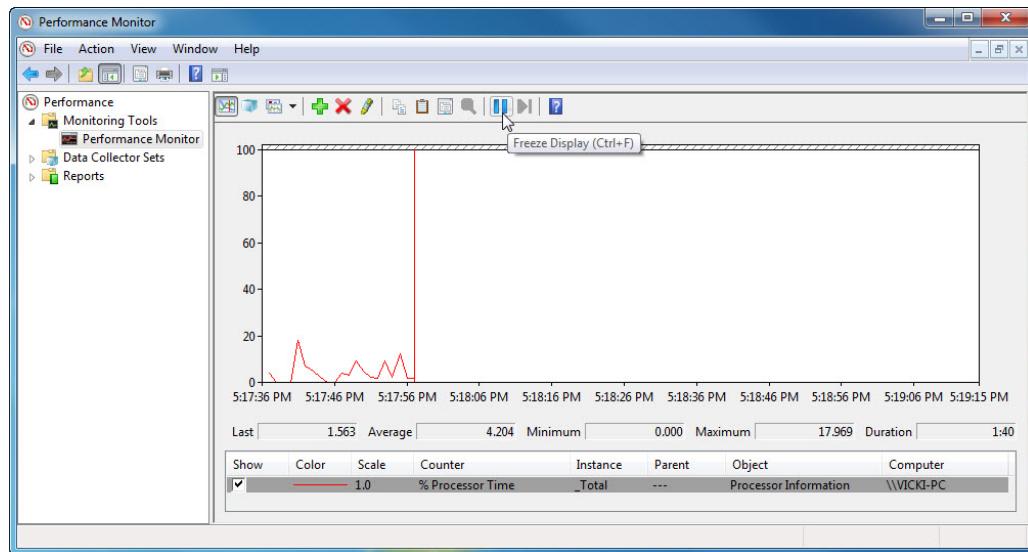
- r. Click the **Network Connections** window to make it active.



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

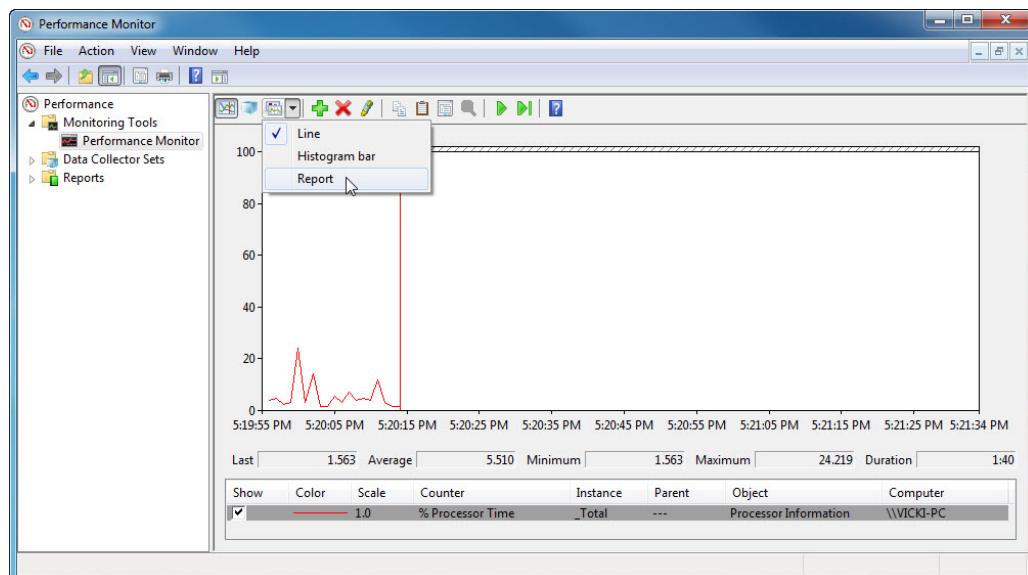
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- s. Click the **Performance Monitor** window to make it active and click the **Freeze Display** icon to stop the recording.



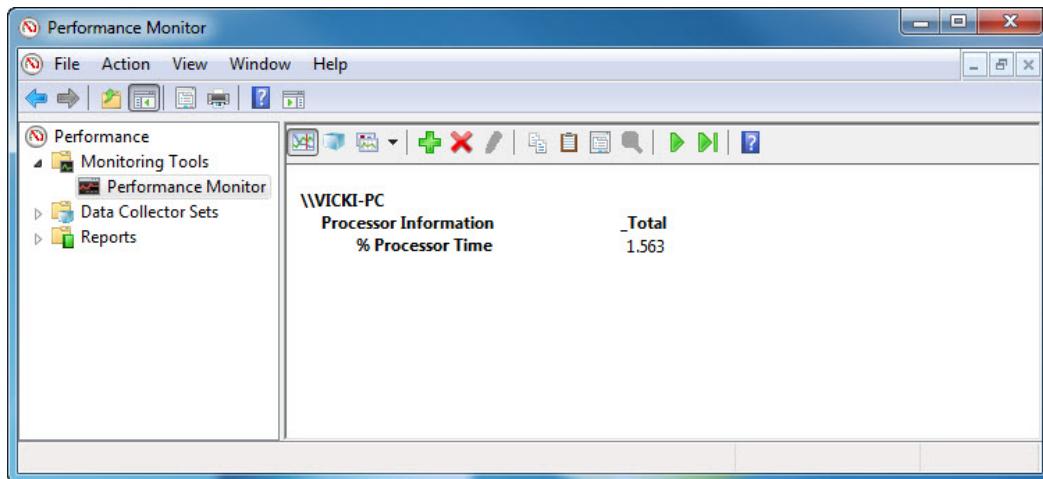
Which Counter is being recorded the most in the graph (hint: look at the graph color and Counter color)?

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



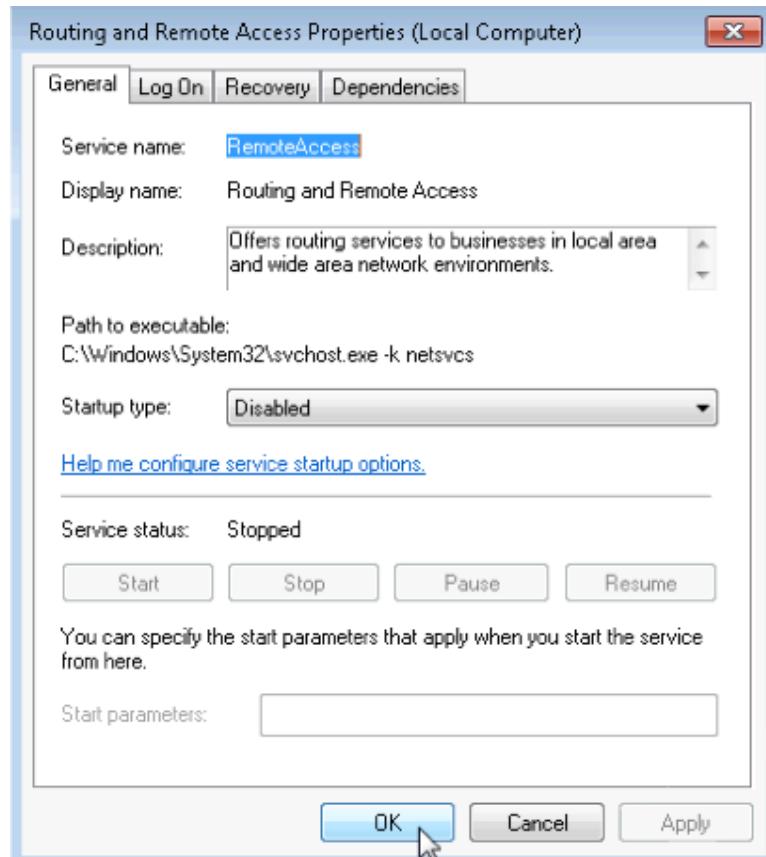
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- u. The display changes to report view.



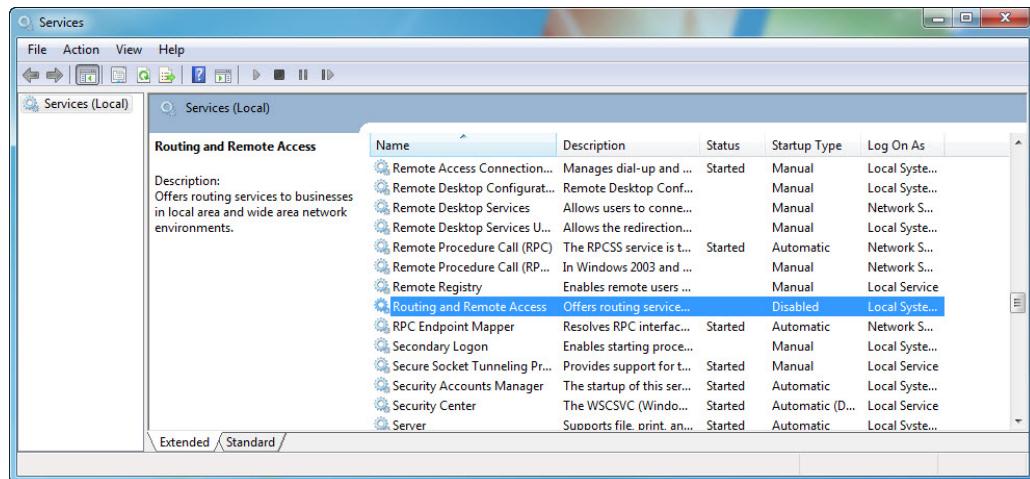
What values are displayed by the counter?

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



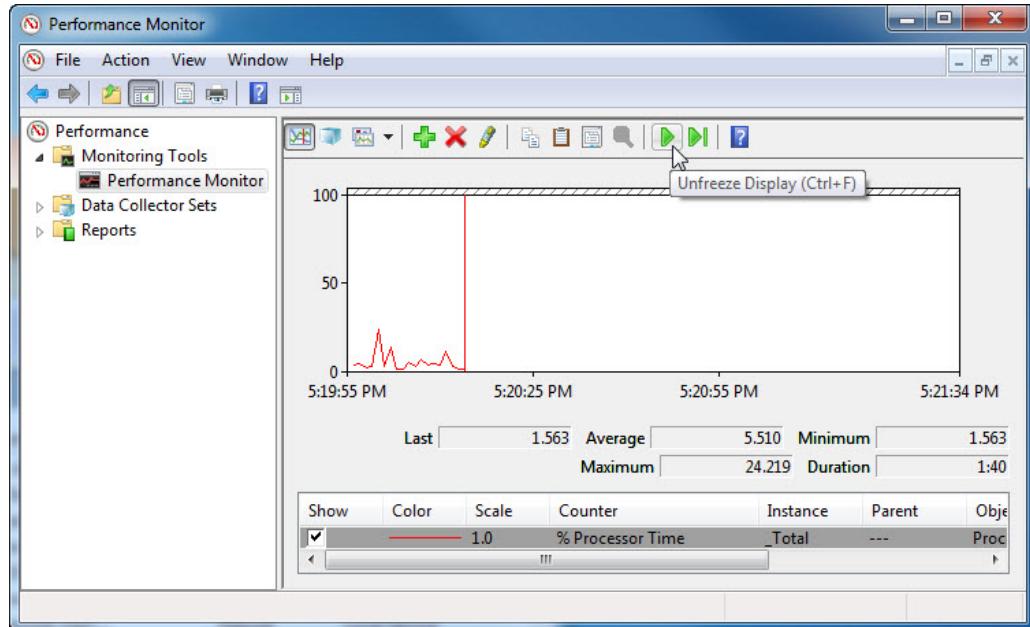
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- w. Click the **Services** window to make it active.



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

- x. Click the **Performance Monitor** window to make it active. Click the **Unfreeze Display** icon to start the recording.



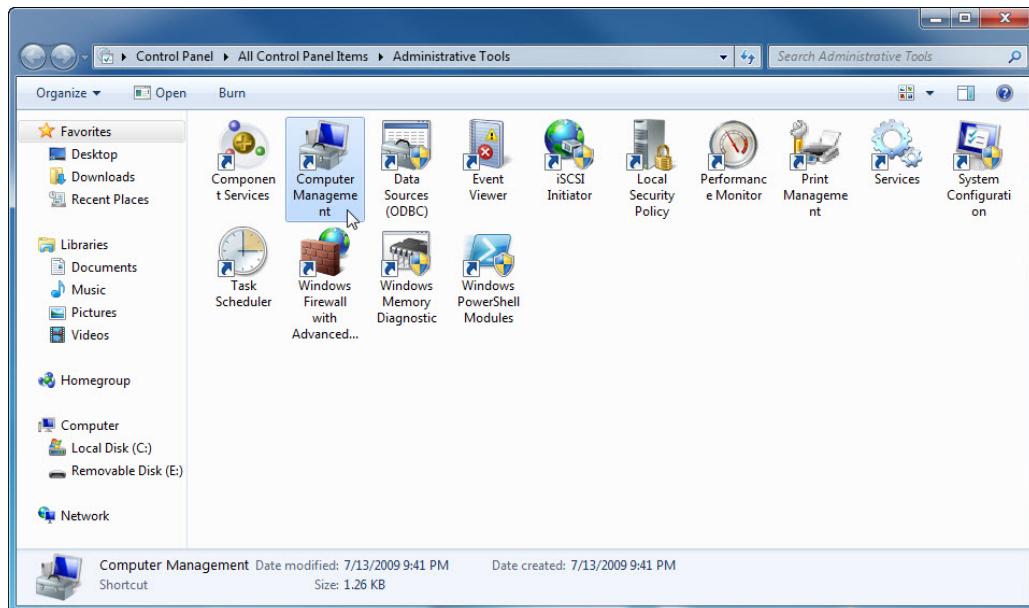
- y. Close all open windows.

Step 3: Work in the Computer Manager utility.

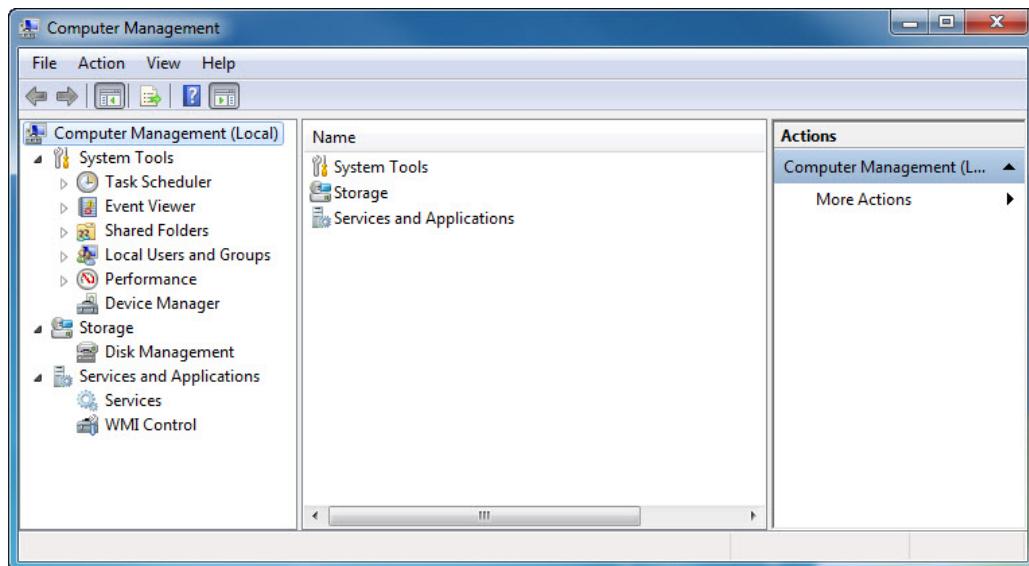
- a. Click **Control Panel > Administrative Tools**.

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- b. Double-click the **Computer Management** icon.

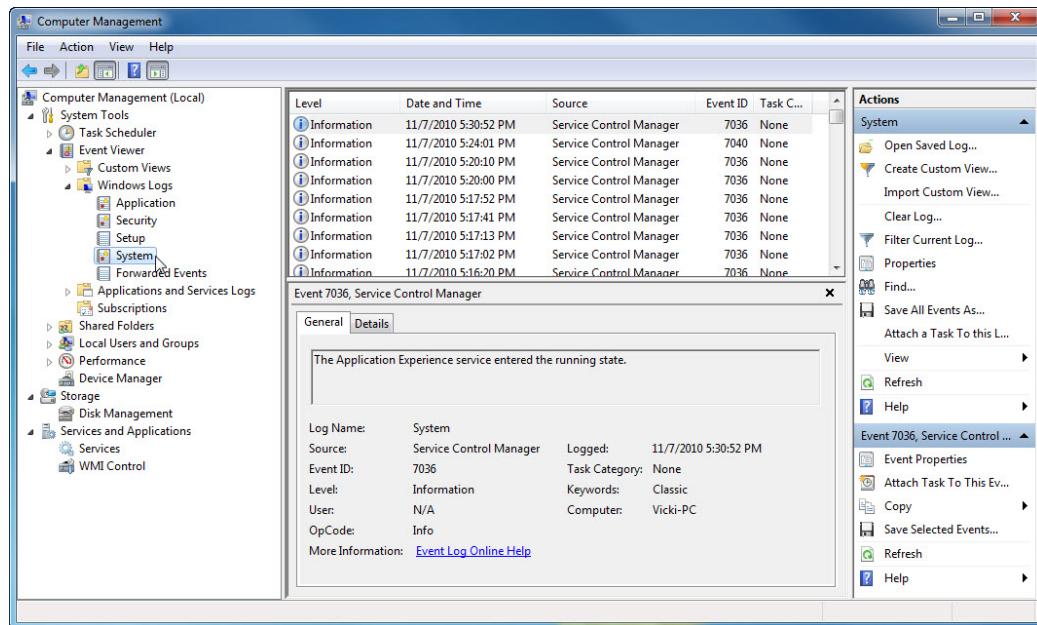


- c. The **Computer Management** window opens. Expand the three categories by clicking on the **arrow** next to: **System Tools**, **Storage**, and **Services and Applications**.

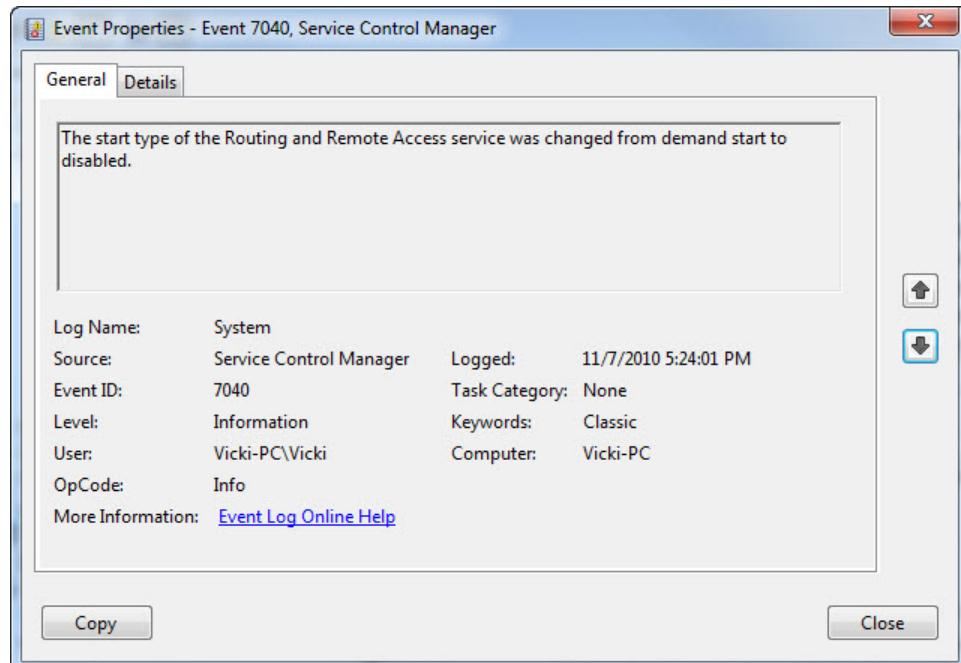


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- d. Click the arrow next to **Event Viewer** then click the arrow next to **Windows Logs**. Select **System** and double-click the first event in the window.



- e. The **Event Properties** window opens 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?

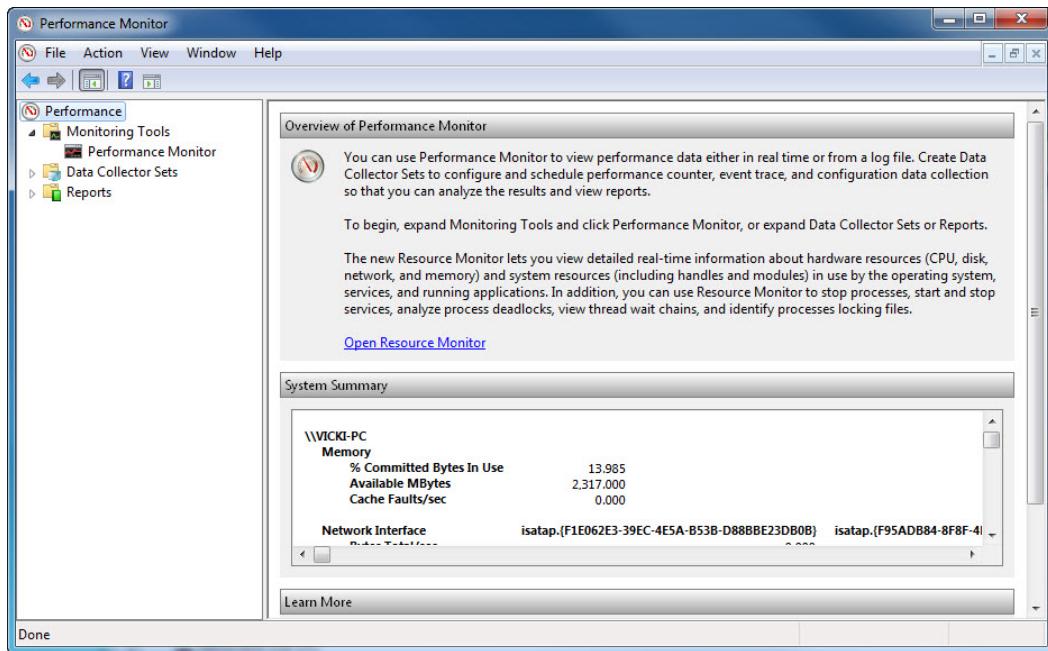
- f. Close all open windows.

Step 4: Configuring Administrative Tools

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

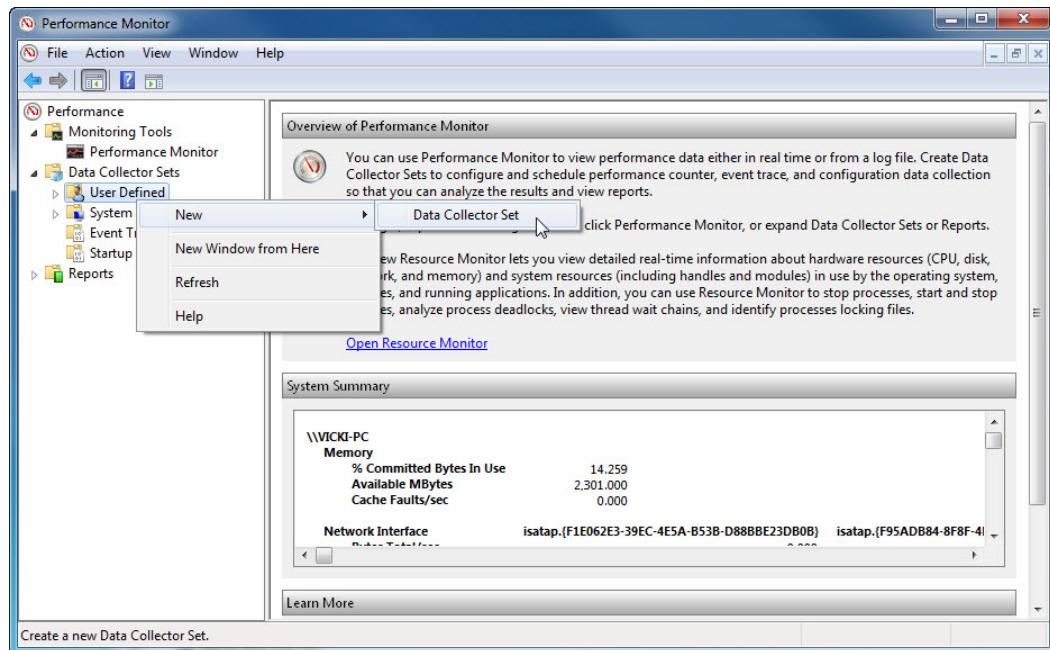
- a. Click **Control Panel > Administrative Tools > Performance Monitor**. The Performance Monitor window opens.

Note: In Windows Vista, the utility is called **Reliability and Performance Monitor**.

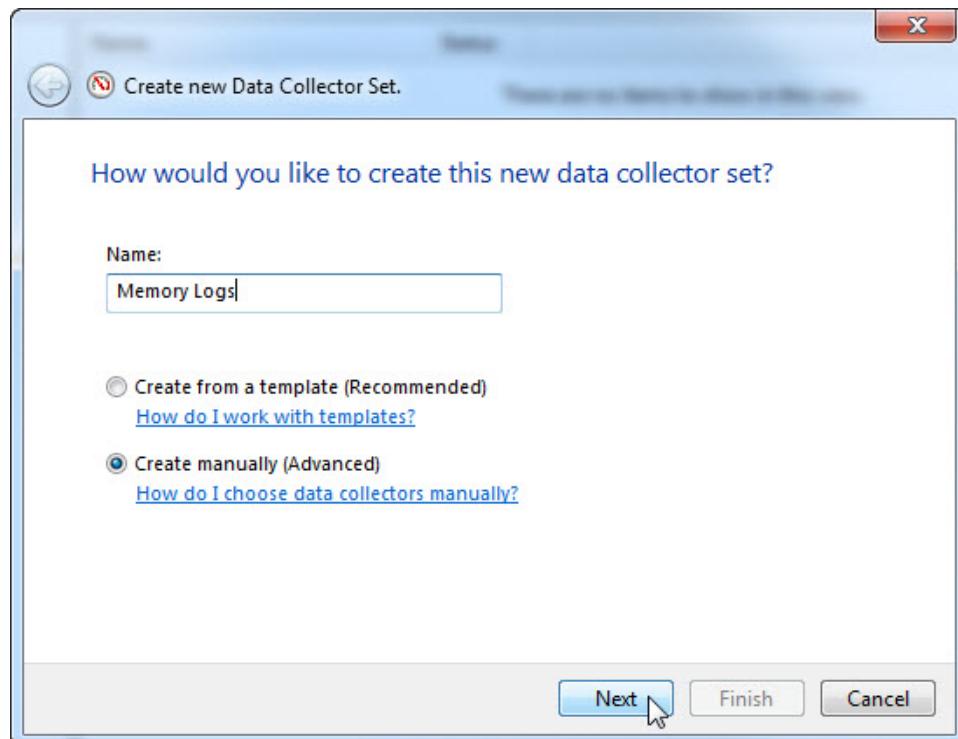


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- b. Expand Data Collector Sets. Right-click User Defined, and select New > Data Collector Set.

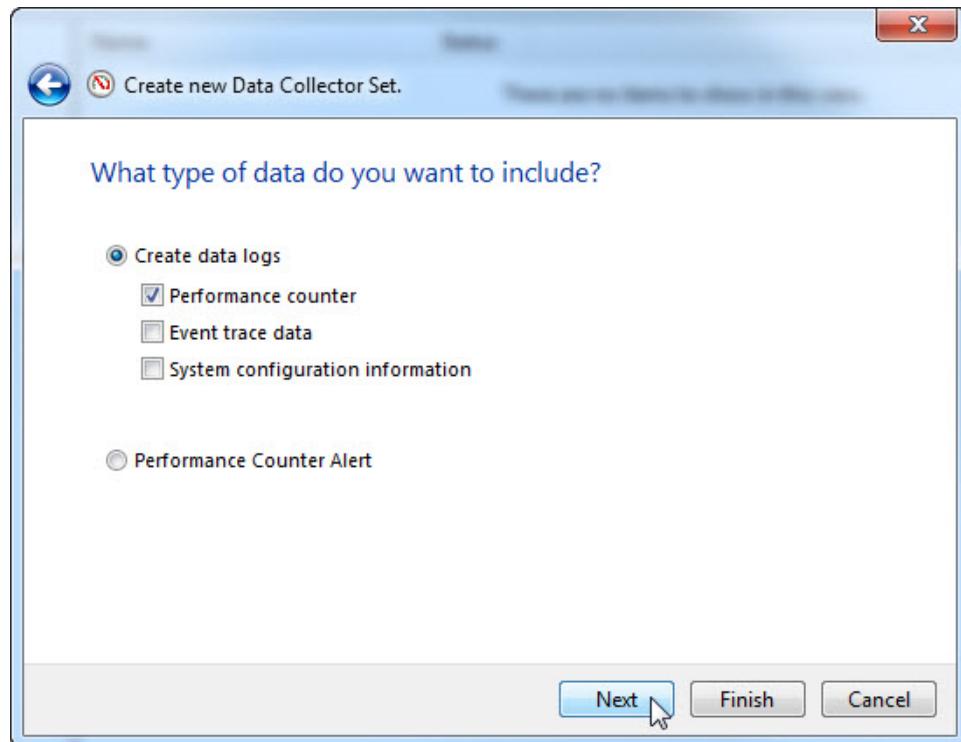


- c. The Create new Data Collector Set window opens. In the Name field, type **Memory Logs**. Select the **Create manually (Advanced)** radio button, and click **Next**.

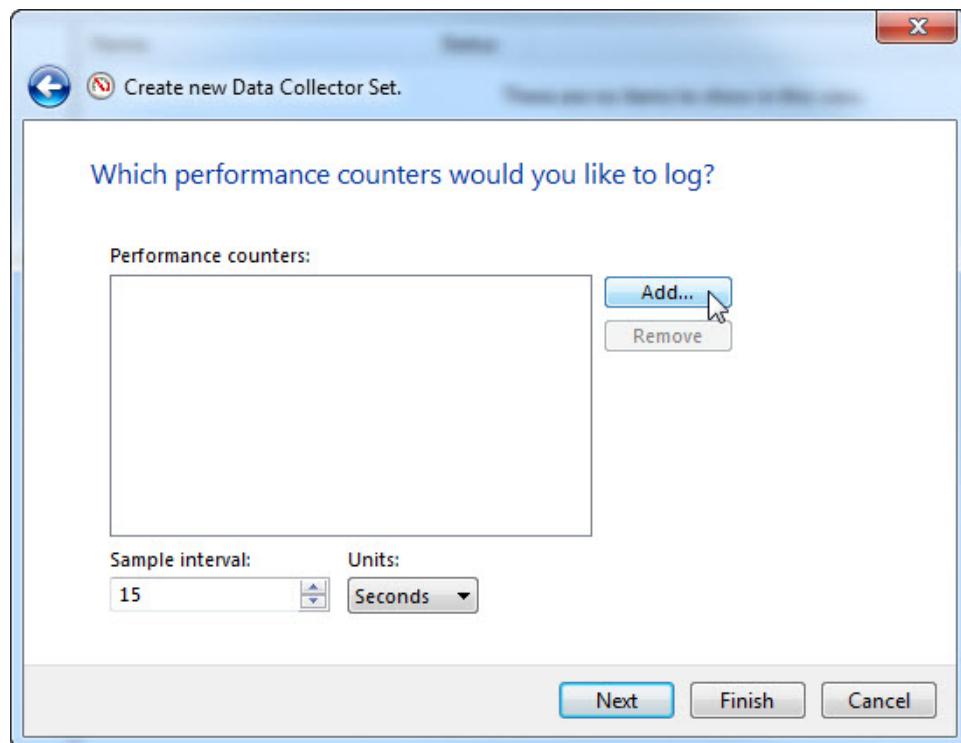


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- d. The **What type of data do you want to include?** screen opens. Check the **Performance counter** box then click **Next**.

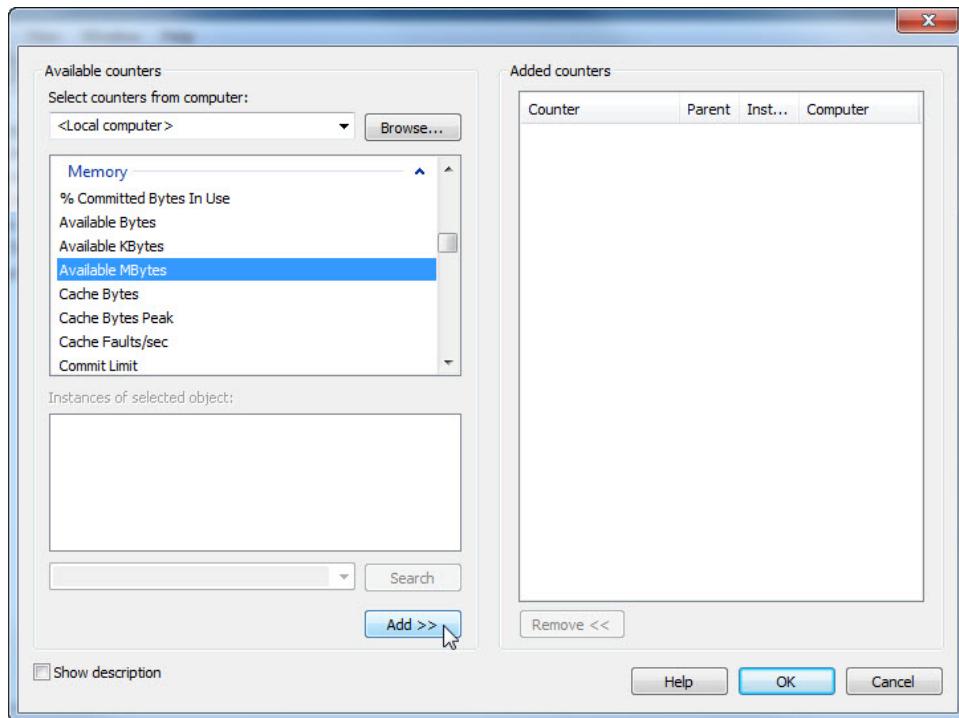


- e. The **Which performance counters would you like to log?** screen opens. Click **Add**.

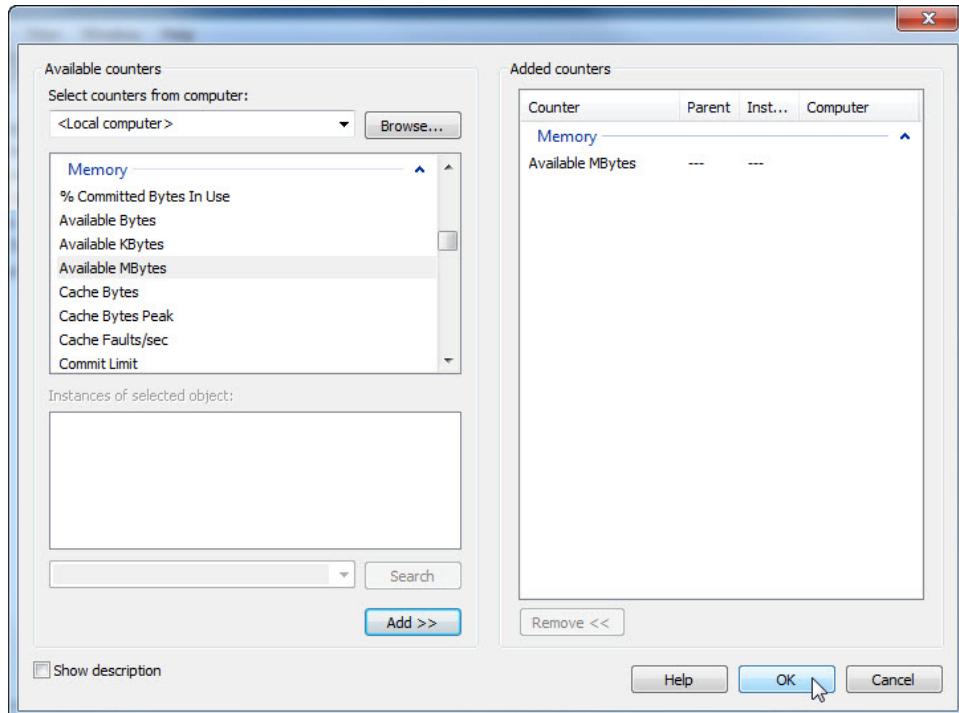


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- f. From the list of available counters, locate and expand **Memory**. Select **Available MBytes** and click **Add>>**.

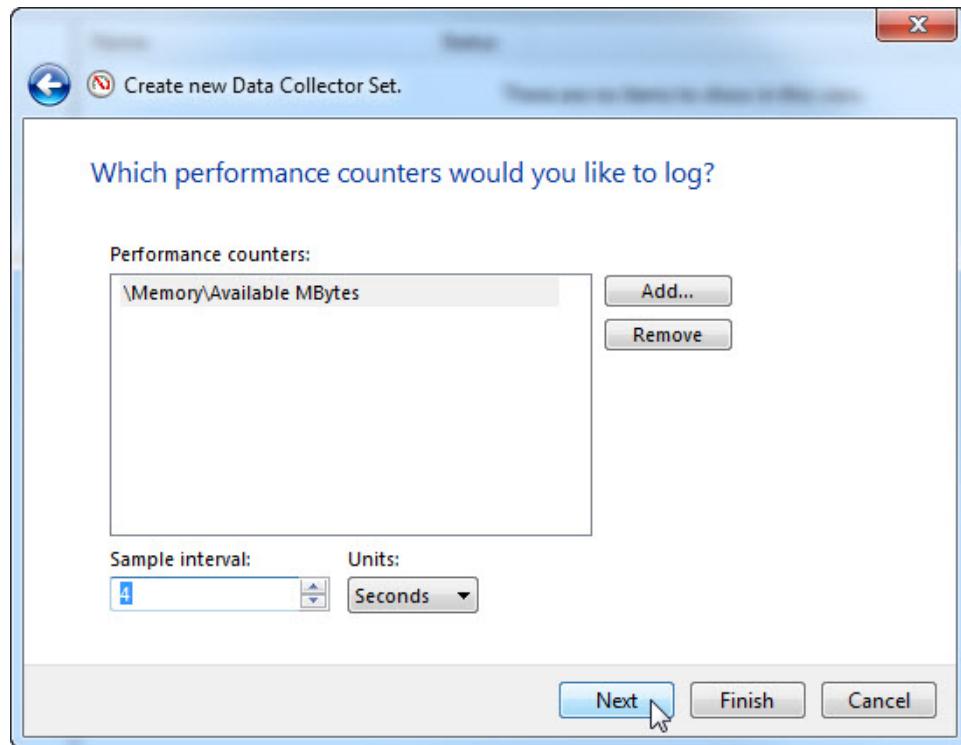


- g. You should see the **Available MBytes** counter added in the right pane. Click **OK**.

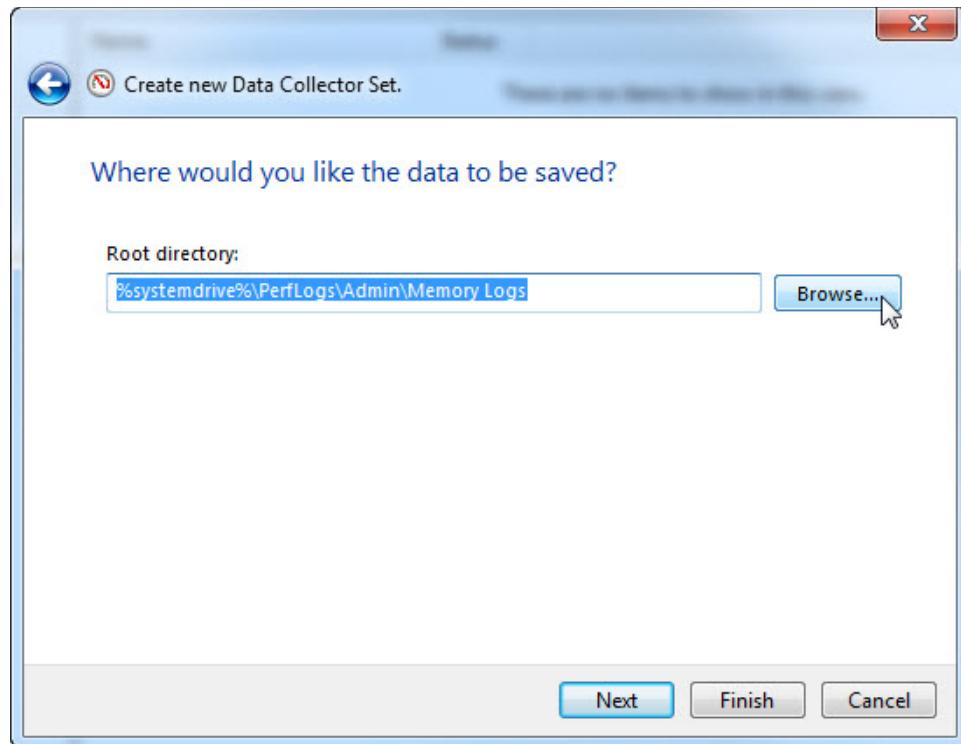


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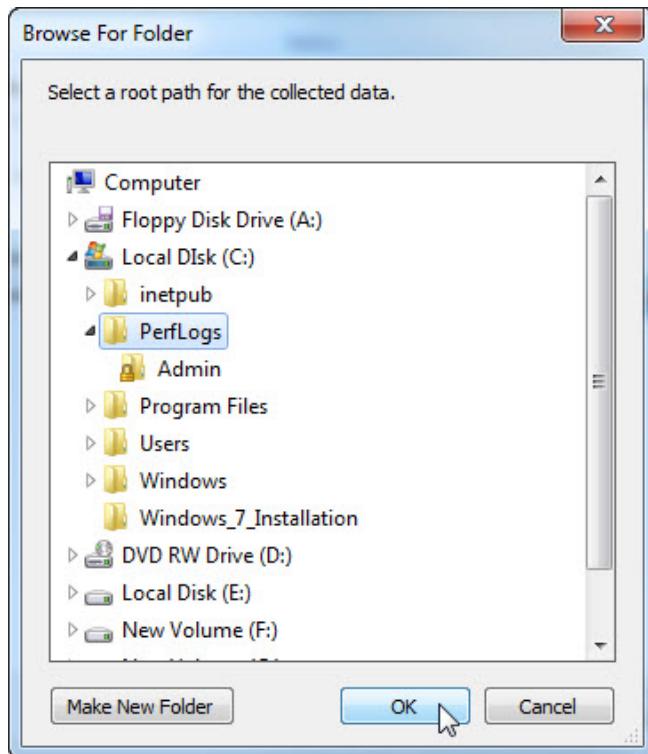
- h. Set the Sample interval field to 4 seconds. Click **Next**.



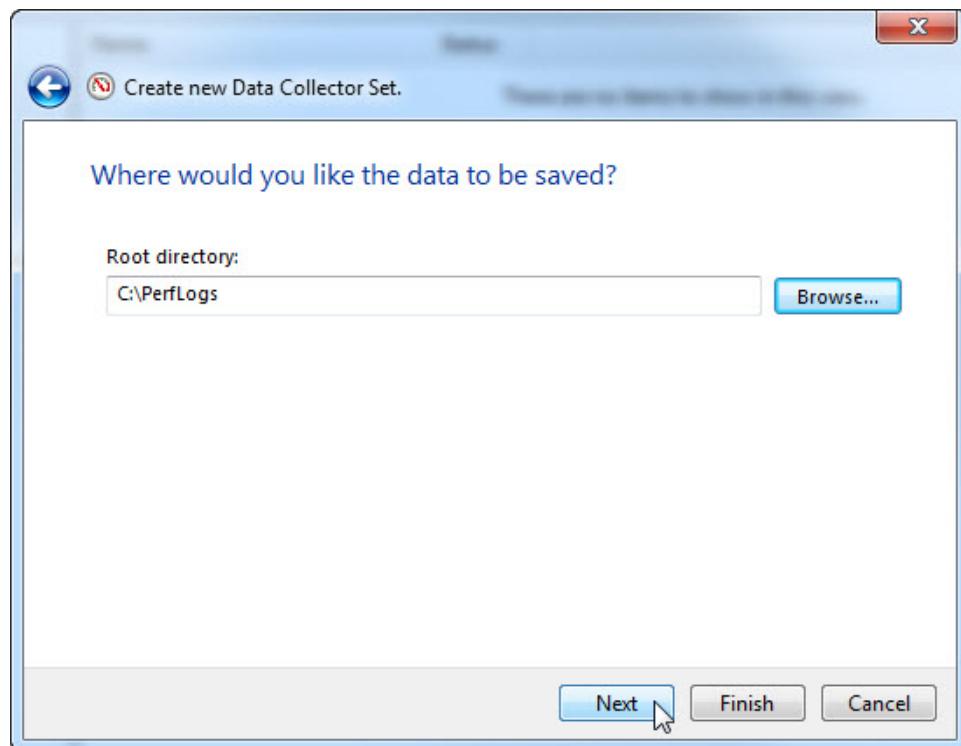
- i. In the **Where would you like the data to be saved?** screen, click **Browse**.



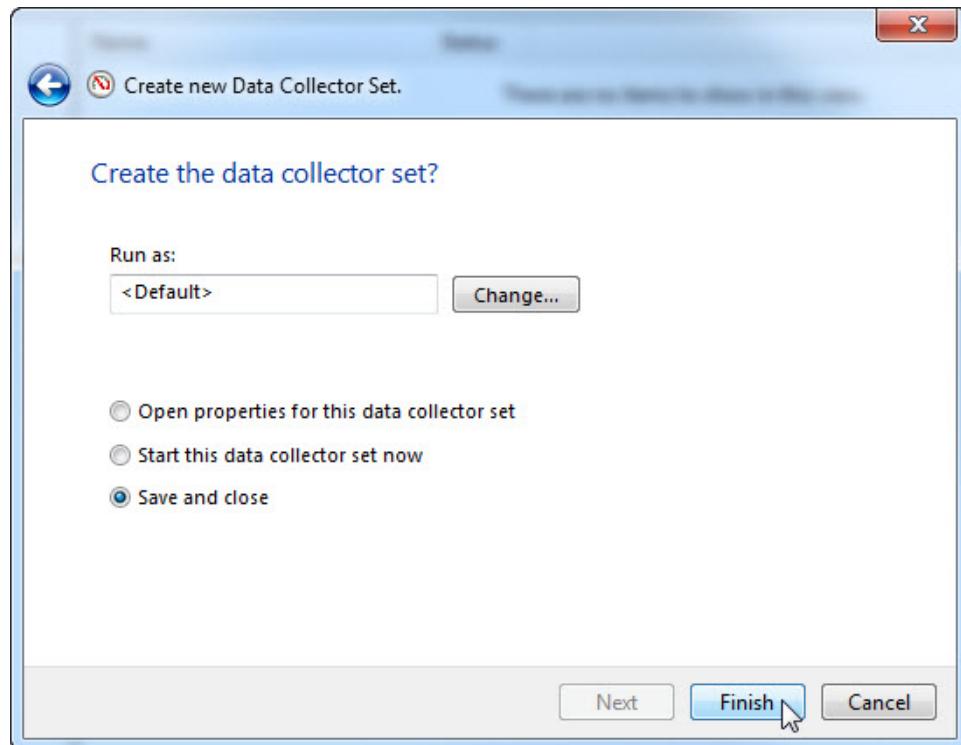
- j. The **Browse For Folder** window opens. Select **drive (C:) > PerfLogs > OK**



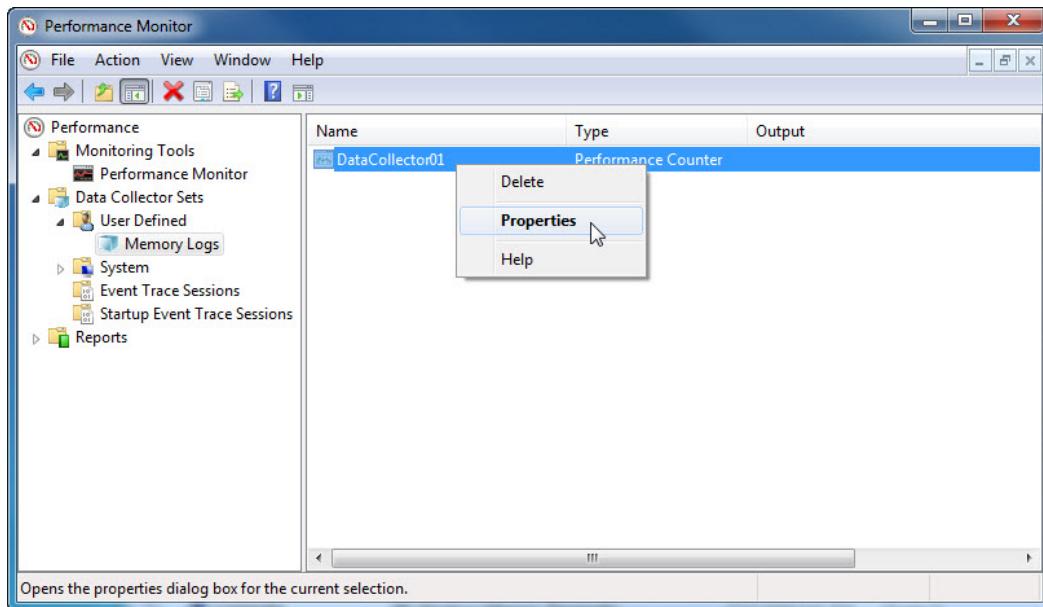
- k. The **Where would you like the data to be saved?** window opens with the directory information that you selected in the previous step. Click **Next**.



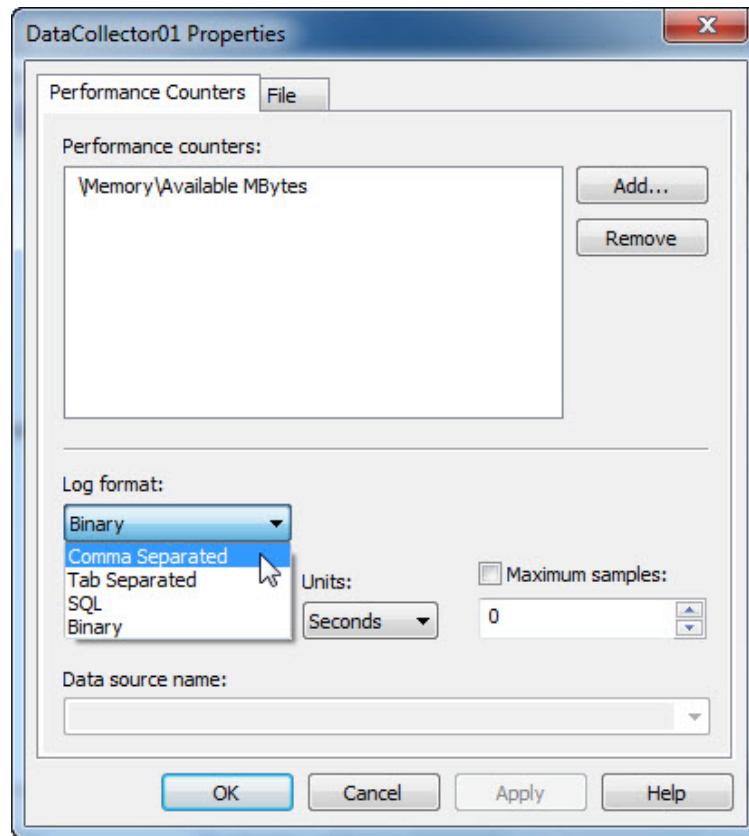
- I. The **Create the data collector set?** screen opens. Click **Finish**.



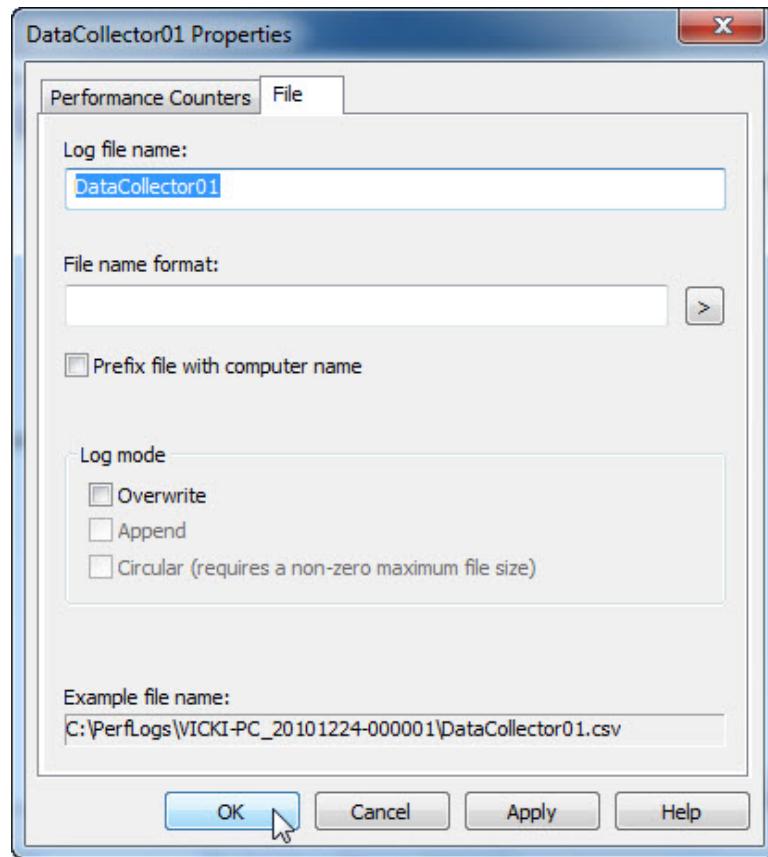
- m. Expand **User Defined**, and select **Memory Logs**. Right-click **Data Collector01** and select **Properties**.



- n. The **DataCollector01 Properties** window opens. Change the **Log format:** field to **Comma Separated**.



- o. Click the **File** tab.

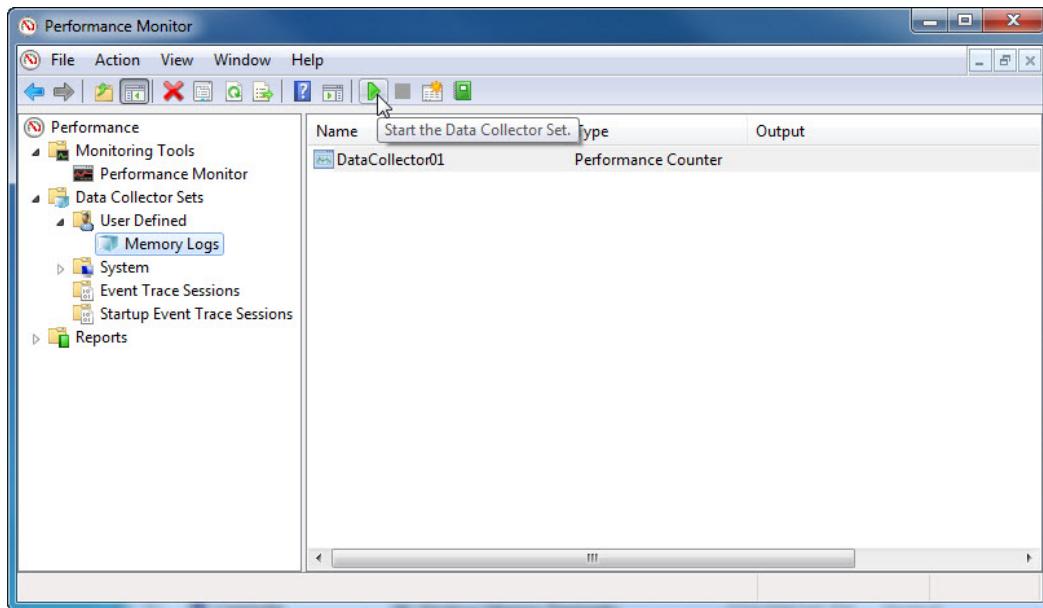


What is the full path name to the example file?

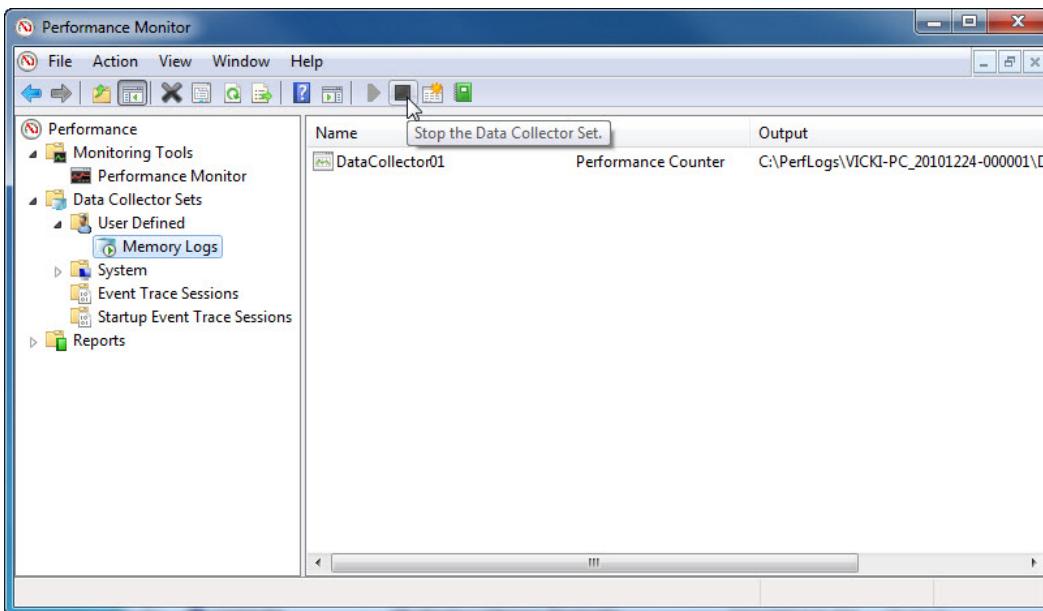
- p. Click **OK**.

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- q. 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.

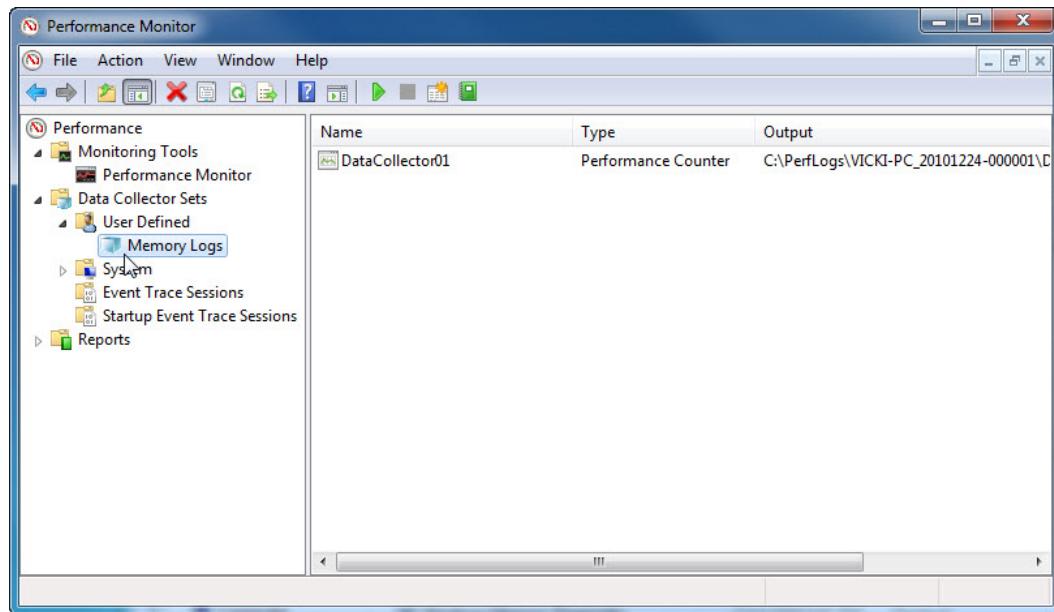


- r. To force the computer to use some of the available memory, open and close a browser.



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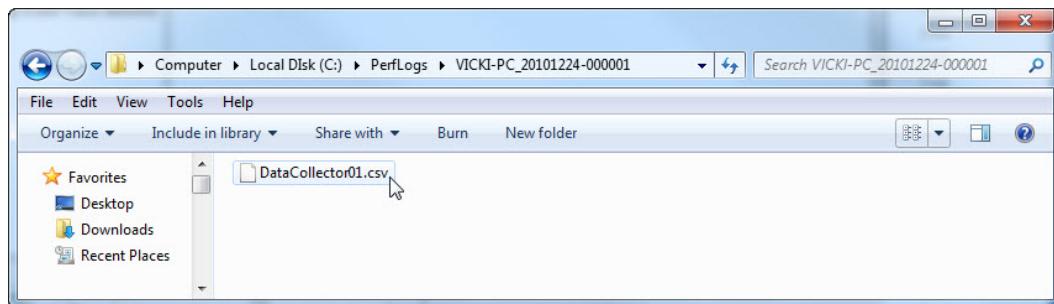
- s. Click the **black square** icon to stop the data collection set.



What change do you notice for the Memory Logs icon?

- t. Click **Start > Computer**, and click **drive C: > PerfLogs**. Locate the folder that starts with your PC's name followed by a timestamp, **VICKI-PC_20101224-000001** in the example. Double-click the folder to open it, and then double-click the **DataCollector01.csv** file.

Note: In Vista, the folder will be named with a number, for example **000001**.

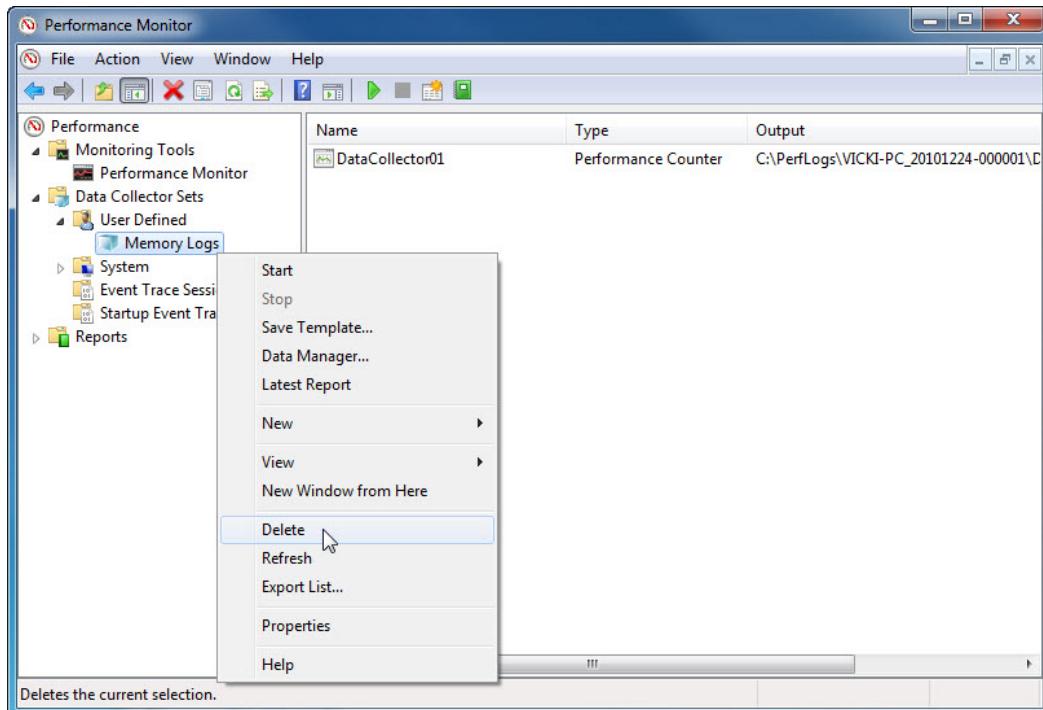


Note: If the **Windows cannot open the file**: message is displayed, select the radio button **Select a program from a list of installed programs > OK > Notepad > OK**.

```
"(PDH-CSV 4.0) (Pacific Standard Time)  
(480)", "\\VICKI-PC\Memory\Available MBbytes"  
"12/24/2010 14:20:56.043", "2272"  
"12/24/2010 14:21:00.059", "2271"  
"12/24/2010 14:21:04.012", "2271"  
"12/24/2010 14:21:08.012", "2272"  
"12/24/2010 14:21:12.012", "2247"  
"12/24/2010 14:21:16.012", "2270"  
"12/24/2010 14:21:20.012", "2261"  
"12/24/2010 14:21:24.012", "2277"  
"12/24/2010 14:21:28.012", "2277"  
"12/24/2010 14:21:32.013", "2260"  
"12/24/2010 14:21:36.013", "2231"  
"12/24/2010 14:21:40.013", "2231"  
"12/24/2010 14:21:44.013", "2223"  
"12/24/2010 14:21:48.013", "2223"  
"12/24/2010 14:21:52.013", "2269"  
"12/24/2010 14:21:56.013", "2225"  
"12/24/2010 14:22:00.013", "2261"  
"12/24/2010 14:22:04.013", "2261"  
"12/24/2010 14:22:08.013", "2260"
```

What does the column farthest to the right show?

- u. Close the **DataCollector01.csv** file and the window with the PerfLogs folder.
- v. Select the **Performance Monitor** window. Right-click **Memory Logs** > **Delete**.



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- w. The **Performance Monitor > Confirm Delete** window opens. Click **Yes**.
- x. Open drive **C:** > **PerfLogs** folder. Right-click on the folder that was created to hold the Memory log file, then click **Delete**.
- y. The Delete Folder window opens. Click **Yes**.
- z. Close all open windows.