Hewlett Packard Enterprise

HPE Cray EX Series System Administration with HPE Performance Cluster Manager

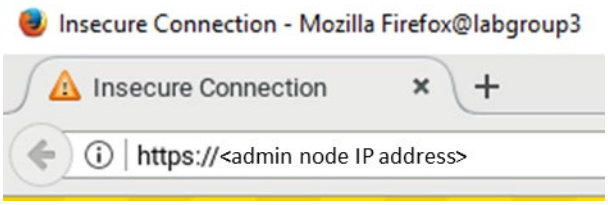
Lab exercise cluster manager graphical user interface

Explore the HPE Performance Cluster Manager GUI

1. Double click the Mozilla Firefox web browser icon.
2. In the URL field, enter the IP address of the admin node. Use the IP address in the list below that corresponds with your labgroup. Do not include < and > brackets shown in graphic below.

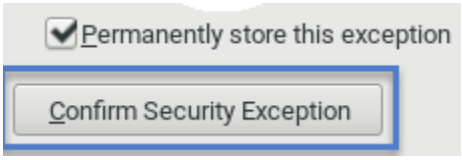
   spottedcow admin node IP: 192.168.235.98

   styx admin node IP: 192.168.235.50

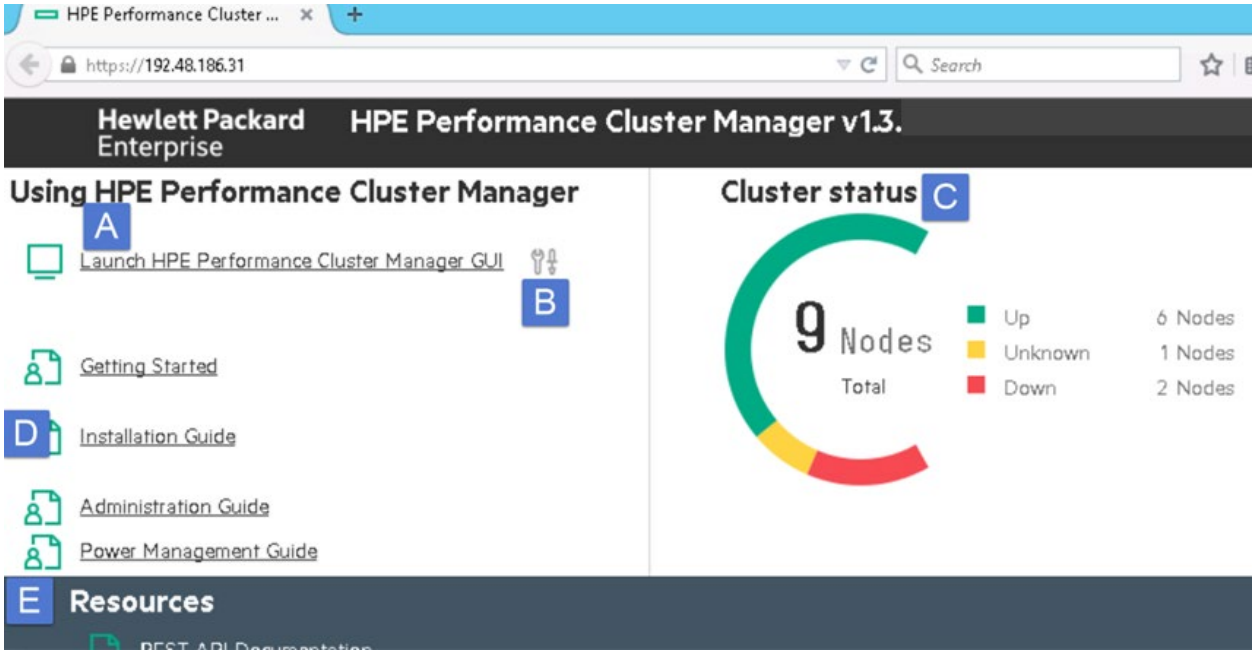
   

   The This Connection is Untrusted dialog appears.

3. Click I Understand the Risks.
4. Click Add Exception.
5. In the Add Security Exception popup, click Confirm Security Exception.

6. Review the summary screen that appears for these elements:
   - The Launch HPE Performance Cluster Manager GUI link. (A)
   - The tool icon immediately right of the launch link, which provides online help for launching the GUI. (B)
   - The cluster status that appears on the right. Your cluster will show 9 nodes. (C)
   - HPE PCM guide links that appear on the left. (D)
   - Resource links that appear on the bottom left. (E)



7. Click the launch link.
8. If the launch link fails to bring the GUI up, open a new terminal session on the lab desktop.
9. Establish an ssh -X session to enable port forwarding:

   ```
   ssh -X root@192.168.235.98
   ```

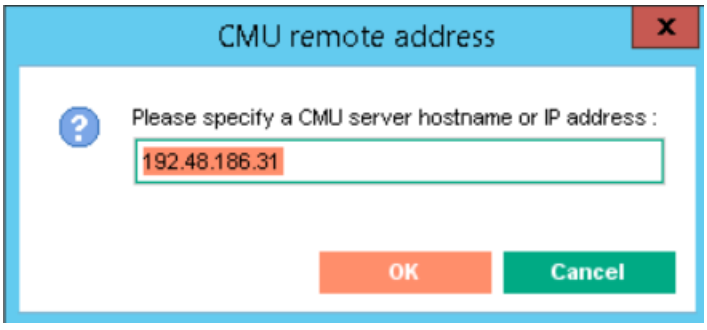
10. Start the cluster manager graphical user interface:

    ```
    java -jar -Xmx1024M /root/Downloads/cmugui_standalone.jar
    ```

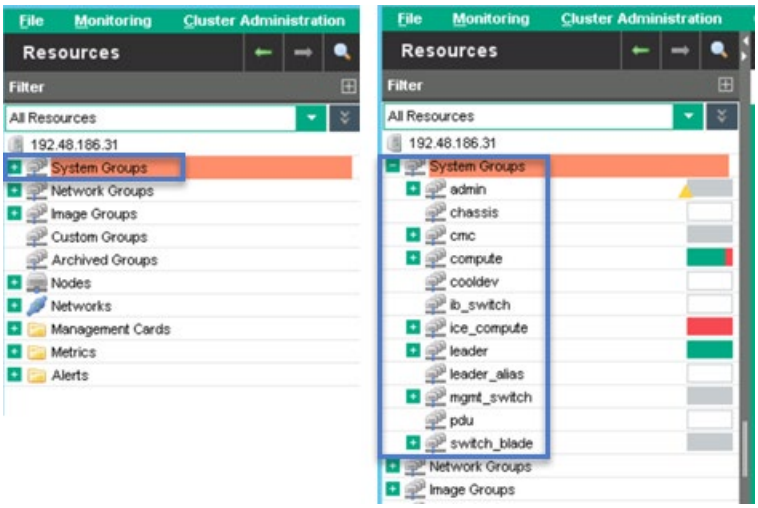
11. If a small popup box appears with "Please specify a CMU server hostname or IP address:", enter the admin node IP address and then click **OK**.

    Use the IP address in the list below that corresponds with your labgroup.

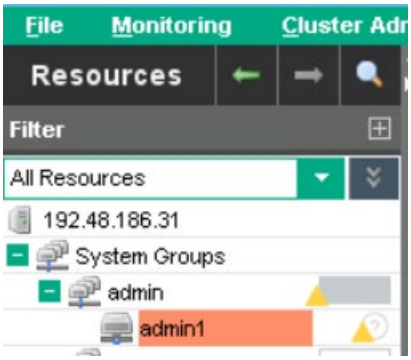
    admin 192.168.235.98

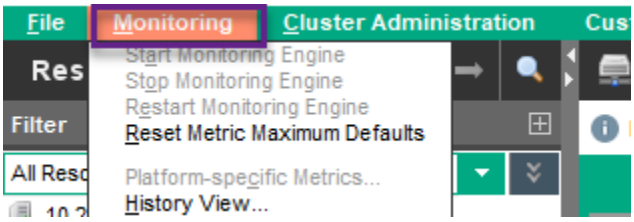
12. In the left panel, click the **+** left of System Groups to expand; system groups group nodes of the same cluster role together.



13. In System Groups, click + left of the admin group to expand.
14. Click the name of your admin node.

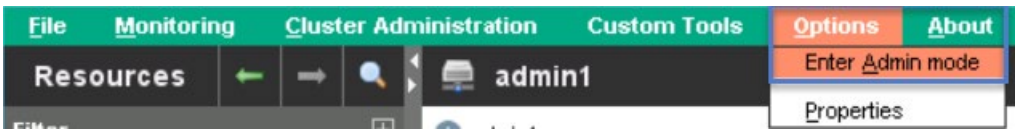


15. In the top menu bar, click **Monitoring**.



Most of the options appear grayed out and you cannot select them.

16. In the top menu bar, click **Options**.



17. Select **Enter Admin mode**.

A popup box appears.

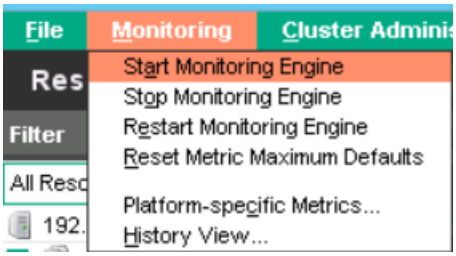
18. In the popup Login box, type:

    `root`

19. In the popup Password, box, type:

    `cmdefault`

20. In the popup, click **OK**.
21. On the top menu bar, click **Monitoring**.
22. Select **Start Monitoring Engine**.



23. Wait approximately one minute for the metrics to populate.
24. In the right pane, with the **Monitoring** tab selected, review node metrics.

TIP: If you see "Inactive action" listed for all, ensure that the monitoring engine is running. Starting the monitoring engine from the GUI requires that you are in Admin mode.

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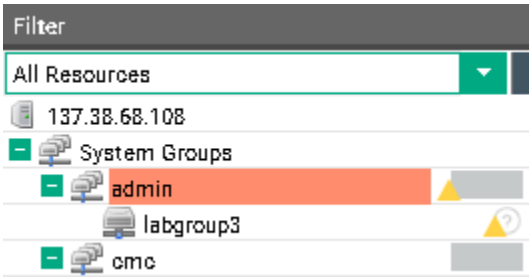
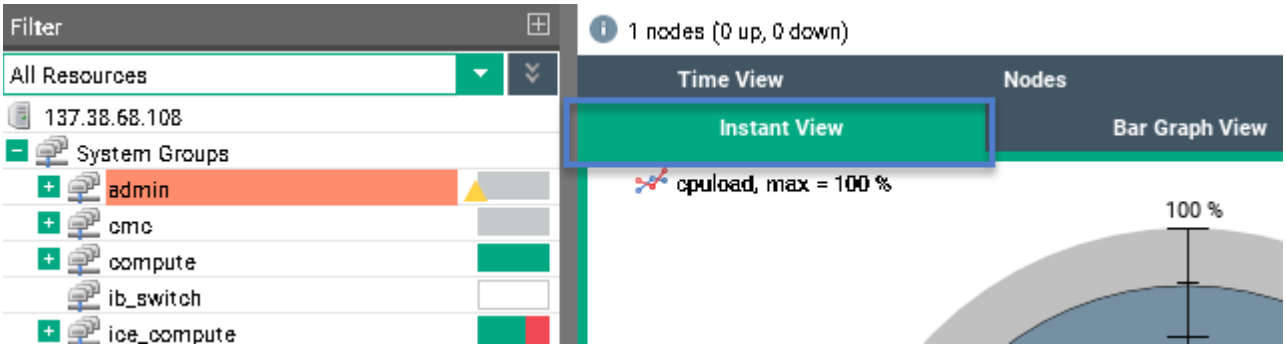
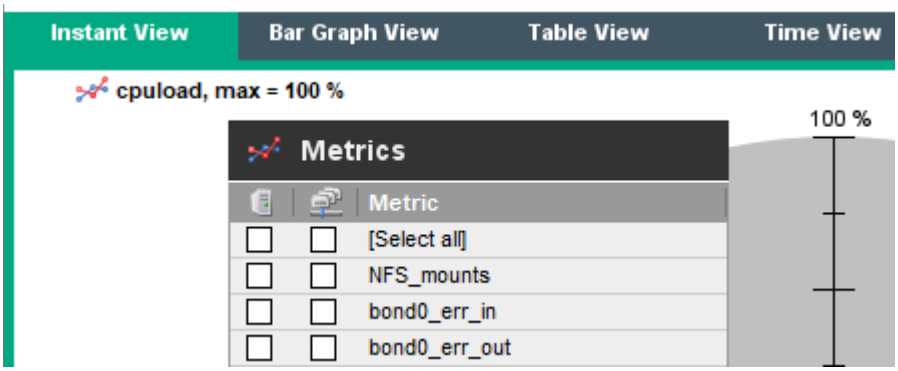
25. Click the **Details** tab to view information about the node.
26. Click the **Nics** tab to view network interface details such as IP address, MAC address, and the name of the cluster manager network that the device connects to.
27. In the left pane, click the system group **admin**.



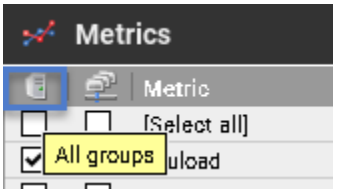
28. In the right pane, click **Instant View** to show pie graphs that represent the monitored value or values.



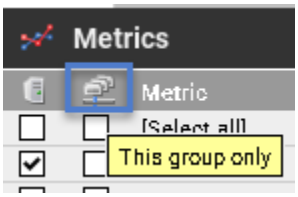
29. In the right pane, right-click outside of the pie chart (outside the large circle). This action brings up the Metrics selection dialog.



30. Hover over the left icon to display the column label All groups.



31. Hover over the middle icon to display the Column label This group only.

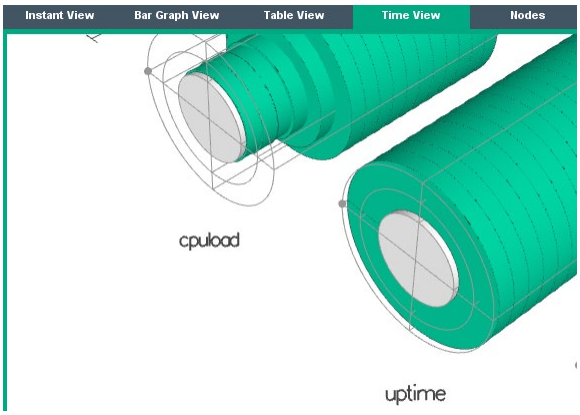


32. Click (enable) the This group only uptime metric.
33. Click (enable) the All groups logins metric.
34. At the bottom of the Metrics popup, click OK.
35. In the right pane, click the Bar Graph View tab.

36. In the right pane, click the **Table View** tab to view resource values in table format.

Note: In this lab environment, Time View causes the application to stop.

~~37. In the right pane, click the **Time View** tab to graphically represent cluster activity.~~



~~In the Time View snapshot, the cpuload metric value decreases over time.~~

~~In this lab cluster environment, the desktop does not have hardware that support the graphics for this view. Proceed to the next step.~~

38. In the right pane, click the **Nodes** tab.
39. In the right pane, click the **Details** tab.
40. In the right pane, click the **Alerts** tab; alerts notify you of events that occur and when predefined metric thresholds are exceeded.
41. In the left pane, select and review the **compute**, **leader**, and **mgmt_switch** system groups.
42. Review the compute nodes.
43. In the left pane, click the - sign left of the **System Groups** label.
44. In the left pane, click the + sign left of the **Network Groups** label.
45. In the right pane, click the **Groups List** tab.
46. Click the **Bar Graph View** tab.
47. Click the **Global Attributes** tab.
48. Click the **Manage** tab.
49. In the left pane, click the - sign left of the **Network Groups** label.
50. In the left pane, click the + sign left of the **Image Groups** label.

    An image is the set of files on a node that forms the operating system, its configuration, and the applications distributed with the operating system. When you provision a node, you install an image on the node. Master images reside on the admin node.

51. In the left pane, click the + sign left of the **Unassigned nodes** group.

    Nodes appear in the Unassigned nodes group if the cluster manager cannot determine which image a node is running. Admin nodes, managed network switches (mgmtsw0), CMMs, and integrated data network switches run appliance-style operating systems.

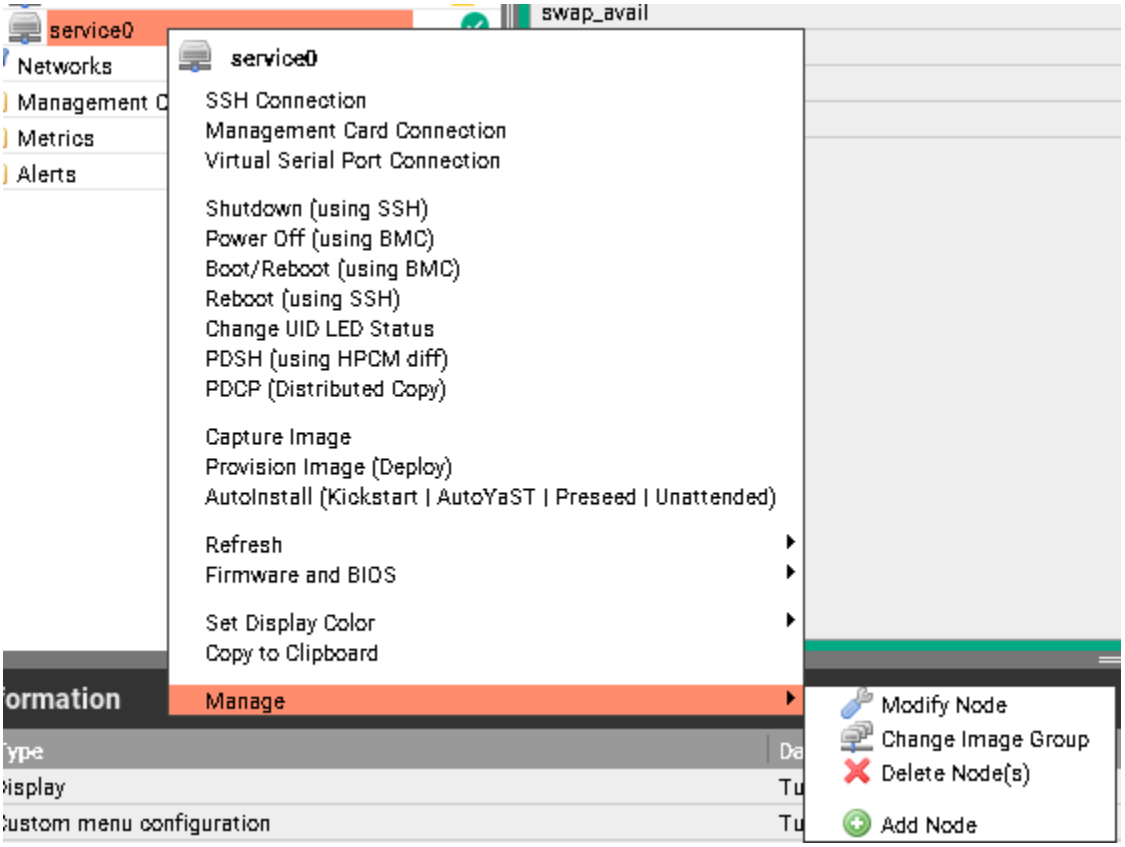
52. In the left pane, click the - sign left of the **Unassigned nodes** group to collapse the entries.
53. In the left pane, click the + sign left of the **sles15sp3** label or adjust to an image with nodes.

    When you expand an image group, the list of nodes that use the image appear along with a health-of-node indicator icon.

54. In the left pane, click the + sign left of the su-sles15sp3 label.
55. In the left pane, click the - sign left of the Image Groups label to collapse the entries.

Manage Nodes

1. In the left pane, click the + sign left of the Nodes resource label to display cluster nodes alphabetically.
2. With the Nodes resource expanded, right click your labgroup node.
3. Select the Manage option.



4. Click Modify Node.
5. Review the node attributes such as IP address, MAC address, management card IP and MAC addresses, and serial port.
6. At the bottom of the Modify Node Dialog, click Cancel.
7. In the left pane, under the expanded Nodes resource, right click your labgroup node.
8. Click SSH Connection.

   A terminal window pops up; the privileged user account is logged in.

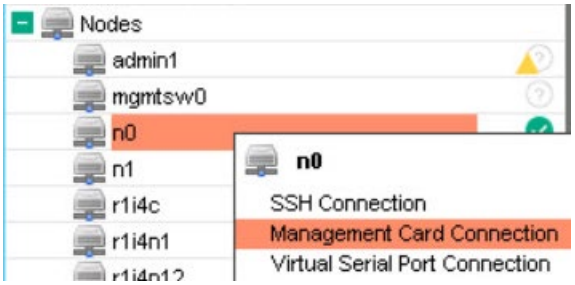
9. In the terminal window, determine the BOOT_IMAGE value if present:

   ```
   cat /proc/cmdline
   ```

10. Exit the terminal window; enter:

    ```
    exit
    ```

11. In the left pane, under the expanded Nodes resource, right click your labgroup node.
12. Click Management Card Connection.



13. Enter the credentials for the node's management card if required.
    a. If you are requested to enter credentials, in the Login box, type:

       root

    b. In the Password box, type:

       initial0

    c. Click OK.
14. In the Management Card Connection window, enter commands appropriate to the device. Example commands for an iLO 5 management command shown in the table below (blank lines removed from output). For additional commands, refer to the HPE iLO 5 Scripting and Command Line Guide.

COMMAND	EXAMPLE OUTPUT	DESCRIPTION
power	</>hpiLO-> power status=0 status_tag=COMMAND COMPLETED Sun May 3 15:17:50 2020 power: server power is currently: On	Displays the system power status.
show /system1 name	</>hpiLO-> show /system1 name status=0 status_tag=COMMAND COMPLETED Sun May 3 15:17:59 2020 /system1 Properties name=ProLiant DL380 Gen10 Verbs cd version exit show set	Displays the system product name.
show /system1 number	</>hpiLO-> show /system1 number status=0 status_tag=COMMAND COMPLETED Sun May 3 15:18:11 2020	Displays the system serial number.

	/system1 Properties number=2M285000T1 Verbs cd version exit show set	
uid	</>hpiLO-> uid status=0 status_tag=COMMAND COMPLETED Sun May 3 15:18:18 2020 The UID light is currently: Off	Displays the current UID state on the server.
stop /system1/oemhp_vsp1		Terminates a virtual serial port connection if one is running in another session.

15. In the upper right corner of the Management Card Connection window, click the X to close the connection.
16. In the left pane, under the expanded Nodes resource, right click your labgroup node.
17. Click Virtual Serial Port Connection.
18. In the Virtual Serial Port Connection session, press Enter to obtain the login prompt or a command line prompt.
19. If the login prompt appears, enter an account to log in to the session:

    root

20. Enter the account password.

    cmdefault

21. Enter a few commands to check out the node.

    lsscsi

    lscpu

    lspci

    lspci | grep -iv intel

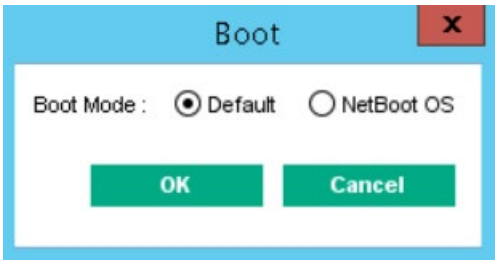
    grep -i memt /proc/meminfo

22. In the upper right corner of the Virtual Serial Port Connection window, click the X to close the connection.
23. In the left pane of the cluster manager GUI, under the expanded Nodes resource, right click your labgroup node.
24. Click Shutdown (using SSH).
25. In the shutdown message dialog, click OK.
26. In the left pane of the HPE PCM GUI, under the expanded Nodes resource, right click your labgroup node.
27. Click Virtual Serial Port Connection.

    A system console window opens.

28. Move the system console window to the side of the cluster manager GUI.
29. In the left pane of the cluster manager GUI, under the expanded Nodes resource, right click your labgroup node.
30. Click Boot/Reboot (using BMC).

31. In the Boot dialog window, with Default selected, click **OK**.



32. In the Virtual Serial Port window, monitor the boot of the operating system.

    During firmware initialization, no output displays to the console; wait a few minutes.

33. When the operating system boots up, a login prompt will appear; the bootup process continues and additional messages display.
34. Enter the login account **root**.
35. Enter the password **cmdefault**.

    A command line prompt appears.

36. At the prompt, list the disks present:

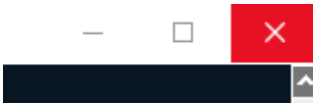
    ```
    lsscsi
    ```

37. Exit the login session.

    ```
    exit
    ```

    The login prompt displays.

38. In the upper right corner of the Virtual Serial Port Connection, close the session.



39. In the left pane of the HPE PCM GUI, under the expanded Nodes resource, right click your labgroup node.
40. Click **Change UID LED Status**.
41. In the Changing Local LED dialog box, with On enabled, click **OK**.

42. Review the output that indicates that the UID has been turned on (enabling UID on your node).
43. In the left pane, right click **your labgroup node**.
44. Select **Management Card connection**.
45. Execute the command "uid" on the iLO prompt to verify that UID LED is on.
46. In the left pane of the HPE PCM GUI, under the expanded Nodes resource, right click your labgroup node.
47. Click **Change UID LED Status**.
48. Click **OFF**.
49. Click **OK**.

50. Review the output that indicates that the UID has been turned off (disabled).
51. Close the cluster manager GUI.

This completes lab exercise for HPE Performance Cluster Manager graphical user interface.