WORK-FLOW

*Specialized Flow Cytometry Solutions*

# FACSymphony Connectivity Issues

## 1. Preface

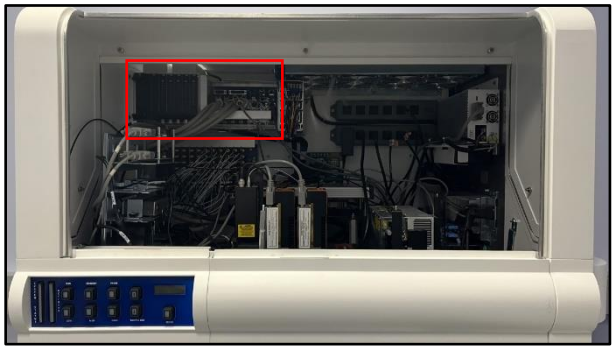
If a connection between the cytometer and the computer cannot be established despite restarting both and verifying all their shared connections, the cytometer's internal computer may need its CMOS battery replaced.

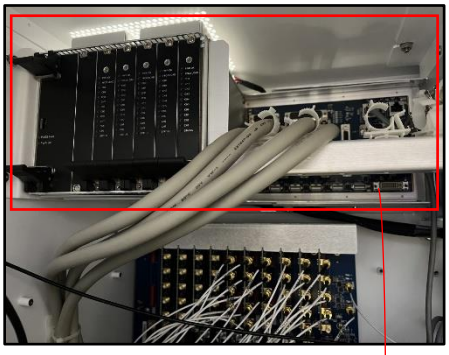
CMOS, short for Complementary metal-oxide-semiconductor, is a small amount of memory on a computer motherboard used to store the Basic Input/Output System (BIOS) settings. Among the settings is the system clock. A discharged battery will prevent the CMOS from retaining this crucial information and will cause connectivity issues.

The following guide will help you determine and adjust the instrument's internal computer system clock and assist you in replacing the CMOS battery.

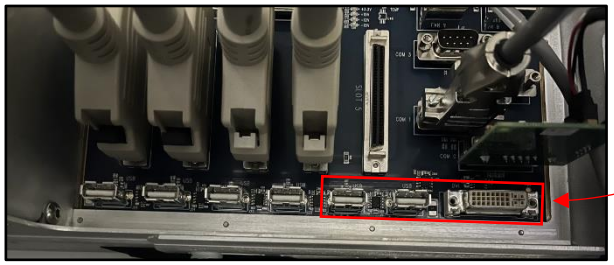
## 2. Accessing the internal computer

- Open the cytometer front chassis and locate the internal computer in the upper left back corner.



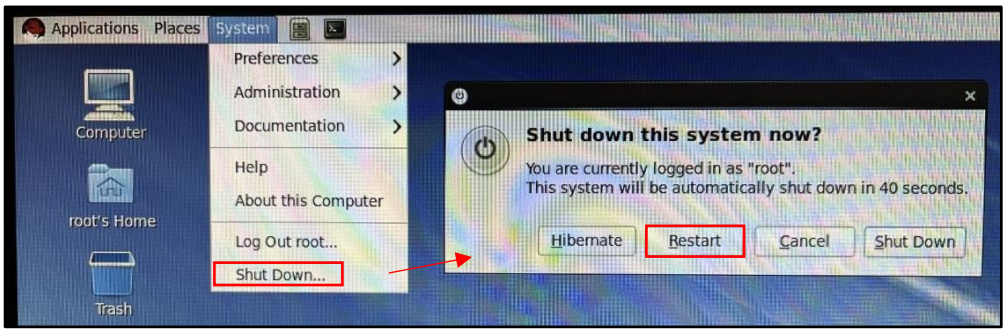


- Connect a mouse, keyboard, and monitor to the circuit board.

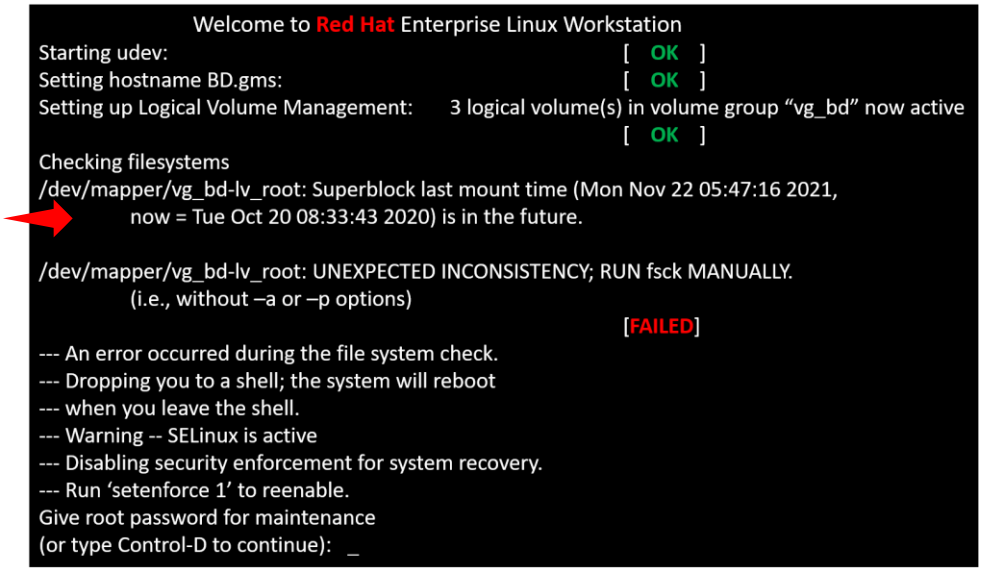


*Note*: if no additional monitor is available, the monitor of the external computer can be used to display the output of the internal computer.

- If necessary, move the mouse to wake up the computer from sleep.
- If the Red Hat® Enterprise Linux desktop is visible, navigate to the System top menu, click Shut Down… then Restart. This should reestablish the connection between the cytometer and the computer with the advantage of avoiding power cycling the lasers.

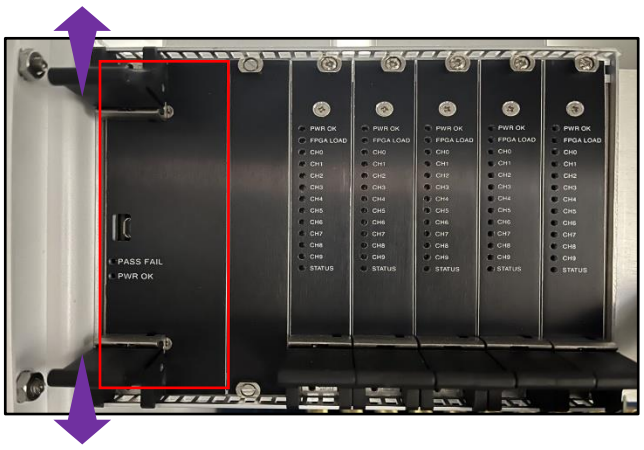



- If, however, the following “command prompt” screen appears, this indicates the CMOS battery is depleted and no longer holds the system date and time (aka “now”).

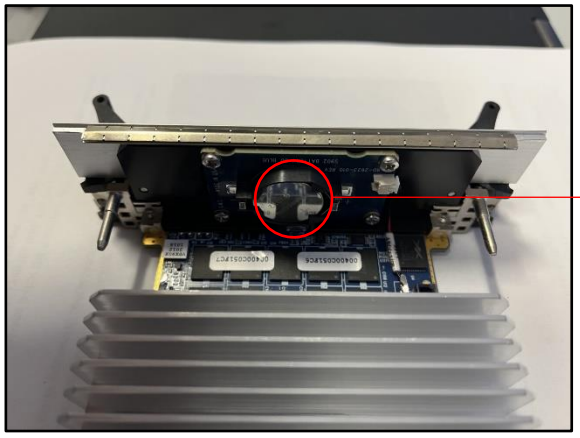


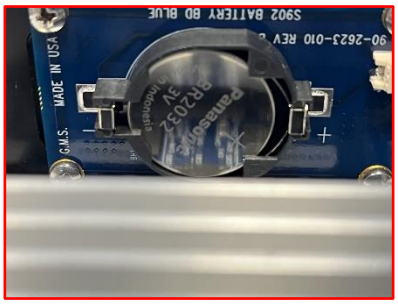

## 3. Replacing the CMOS battery

- Locate the leftmost board (thickest) of the internal computer and push its release tabs in the directions shown by the purple arrows.



- Slide the board out of its slot and, using a small flat head screwdriver, release the battery (CR2032).





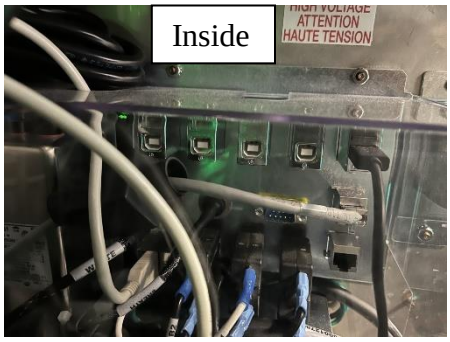

- Once the battery has been replaced, gently slide the board back on its rails and lock it by pushing the release tabs back to their original location.

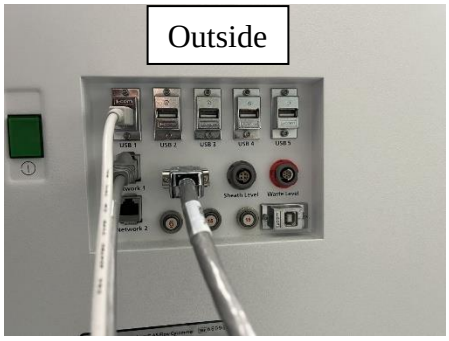
## 4. Adjusting the internal clock

- Turn on the instrument.
- At the command prompt previously shown, type the root password: *abc123* or any other password provided by the instrument vendor, then press Enter.
- Update the date by typing, after the *~]#* prompt, the following:
  *Date +%D -s YYYY-MM-DD*
  Press Enter
- Type reboot then press Enter.

*Note*: if upon replacing the battery the computer boots directly to the desktop, bypassing the command prompt, use the top menu to adjust, if necessary, the system clock.

*Note*: to check the internal computer as needed without having to open the instrument, the peripherals (mouse and keyboard) cables can be set to pass through the side panel of the cytometer (plug inside and outside). By removing one of the USB ports, a HDMI or DisplayPort monitor cable with its appropriate adapter can also be run through the side panel and connect to the DVI cable.

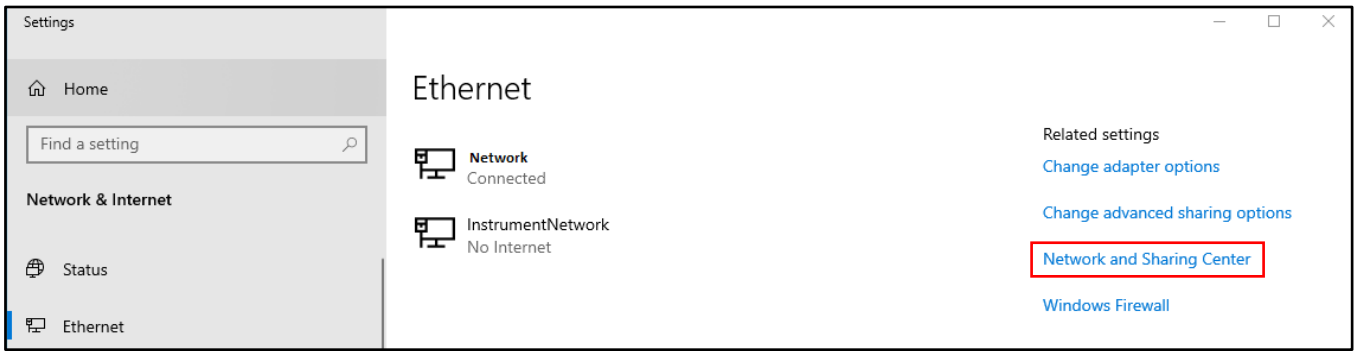


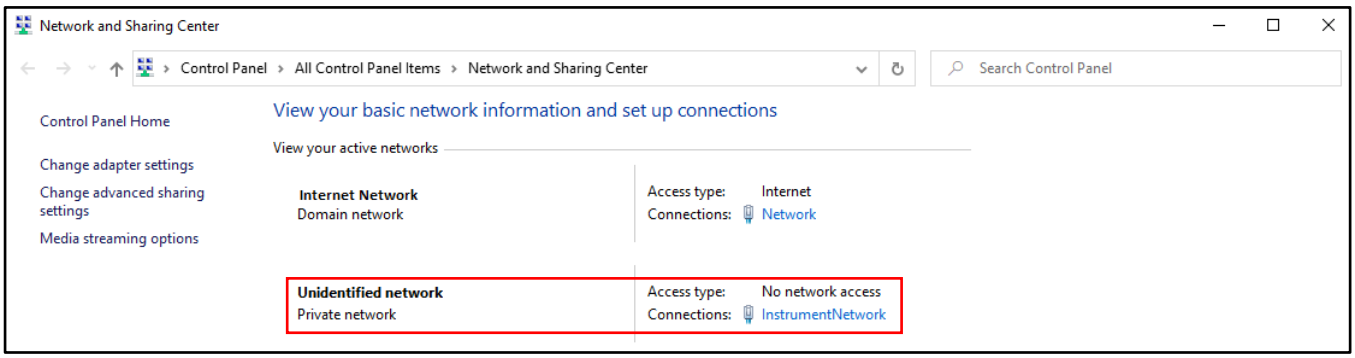
## 5. Connectivity Check

To ensure the cytometer and computer are communicating:

- In the taskbar search field, type “ethernet” and select Ethernet Settings.
- Click on Network and Sharing Center on the right-hand side.




- Click on the instrument network hyperlink, here “InstrumentNetwork”.




- Visualize the network activity in the Status window after launching FACSDiva and logging in. The data transfer via the Ethernet cable connecting the cytometer and computer can be monitor and is shown as bytes sent and received. These values will increase when a connection is imminent and will maintain for the duration of the connection.