Troubleshooting Dirty Fiber Problem on SpeX

May 8, 2025

Problem: On May 8, 2025, IARC crashed upon doing a ‘Go Init’.

Here are the two failure messages that we got:

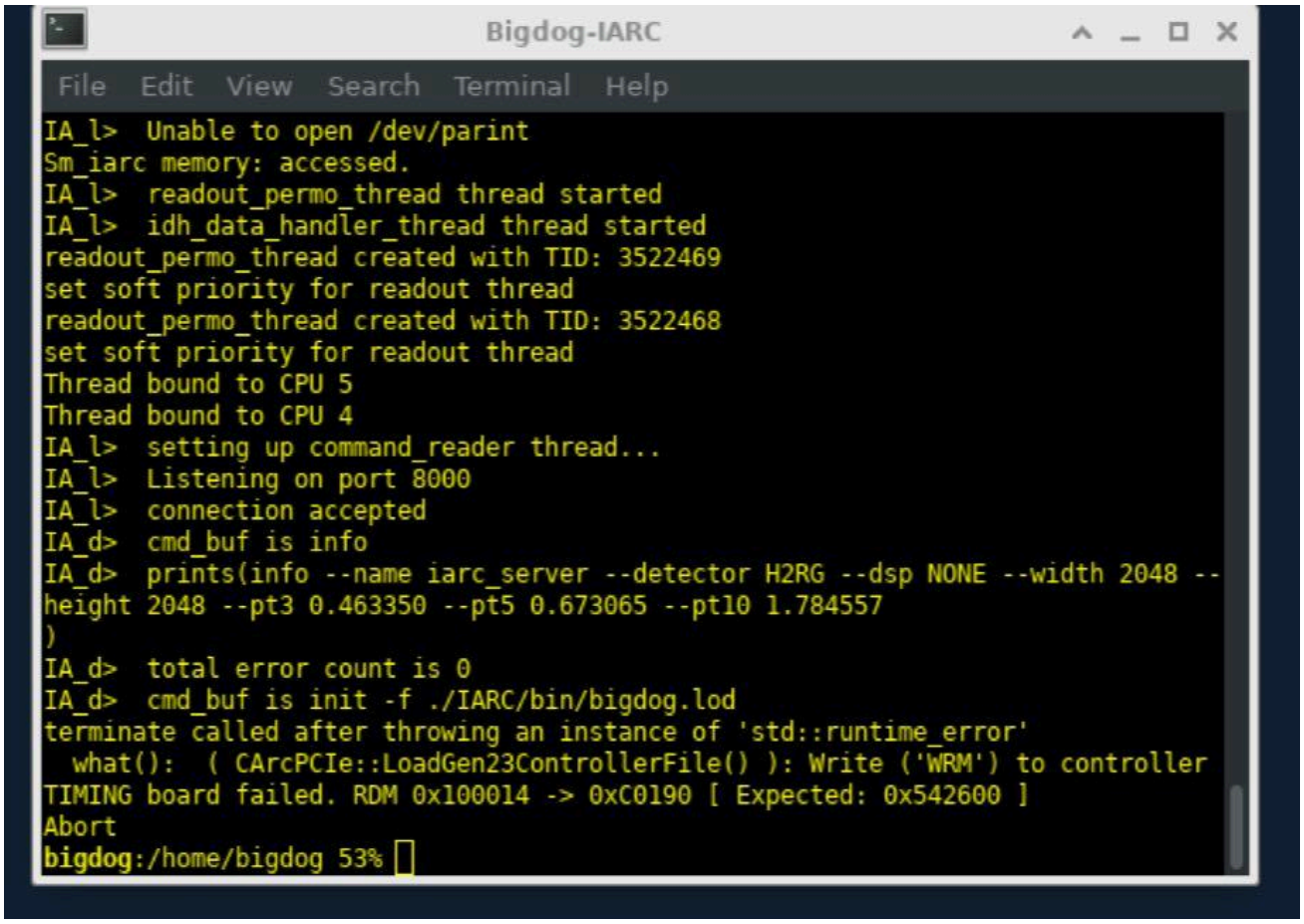

Figure 1: One of the error messages that we got in the IARC window

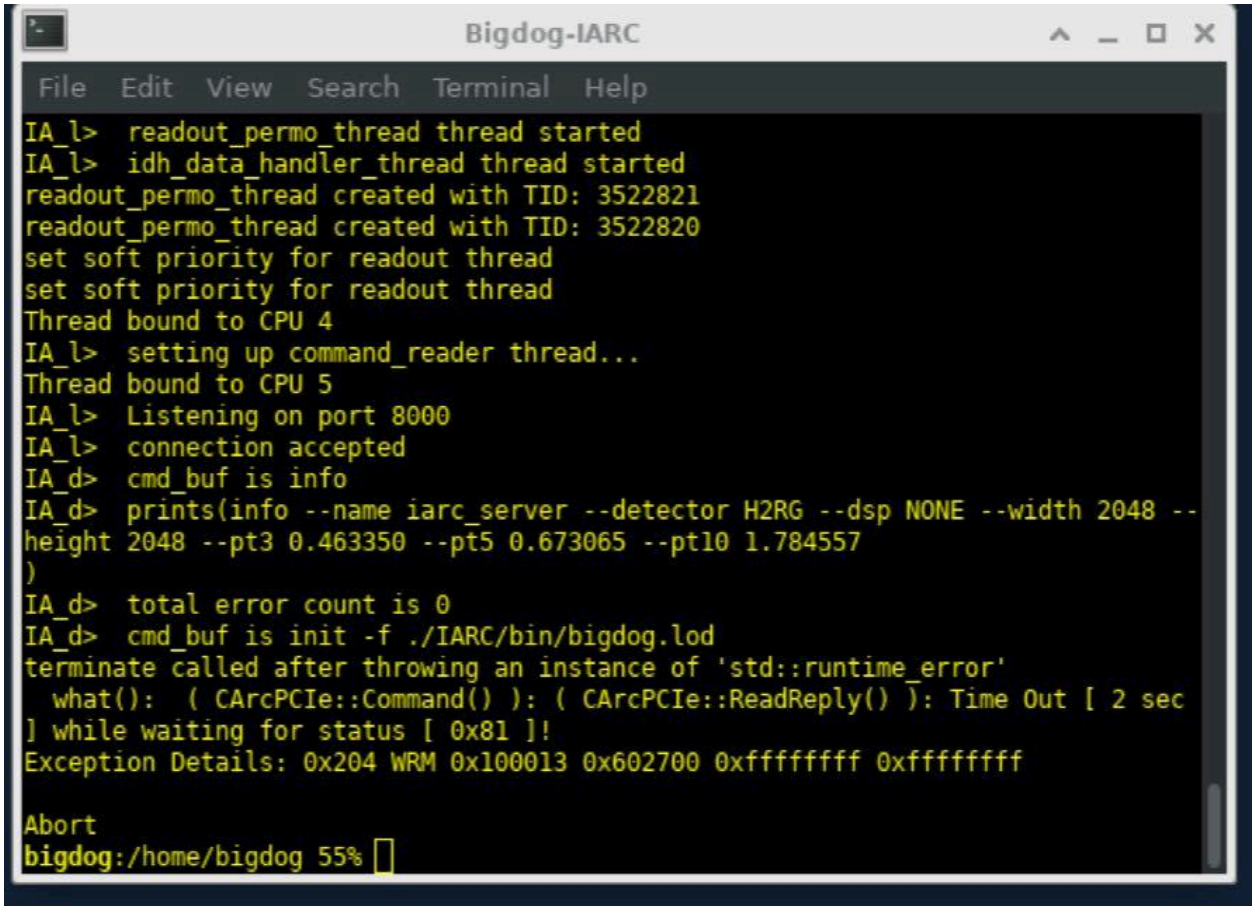

Figure 2: The other error message that we got in the IARC window

Things we tried

- Do a ‘die’, then restart the IC, XUI, and IARC server
- control-C in the IARC server window, and restarting the IARC server
- Check that array power is applied in the RPCM (remote power control module)
- Check array temperatures
- Power is on for the Coolracks
- Checked for duplicate processes.

Things Charles said to check

- Bigdog PC fiber card, on the PC where the fiber comes into the PC. Check if there is a red light on the fiber card. Confirm that we’re getting signal on the back of the Bigdog PC, by looking at the fiber card on the back of the Bigodog PC. Normally no lights should be on. If the array controller is on, then the fiber transmitter laser is on also. In that case, the PCI card in the PC will receive signal. When we turned off power to the array controller, then we got a red light on the fiber card.

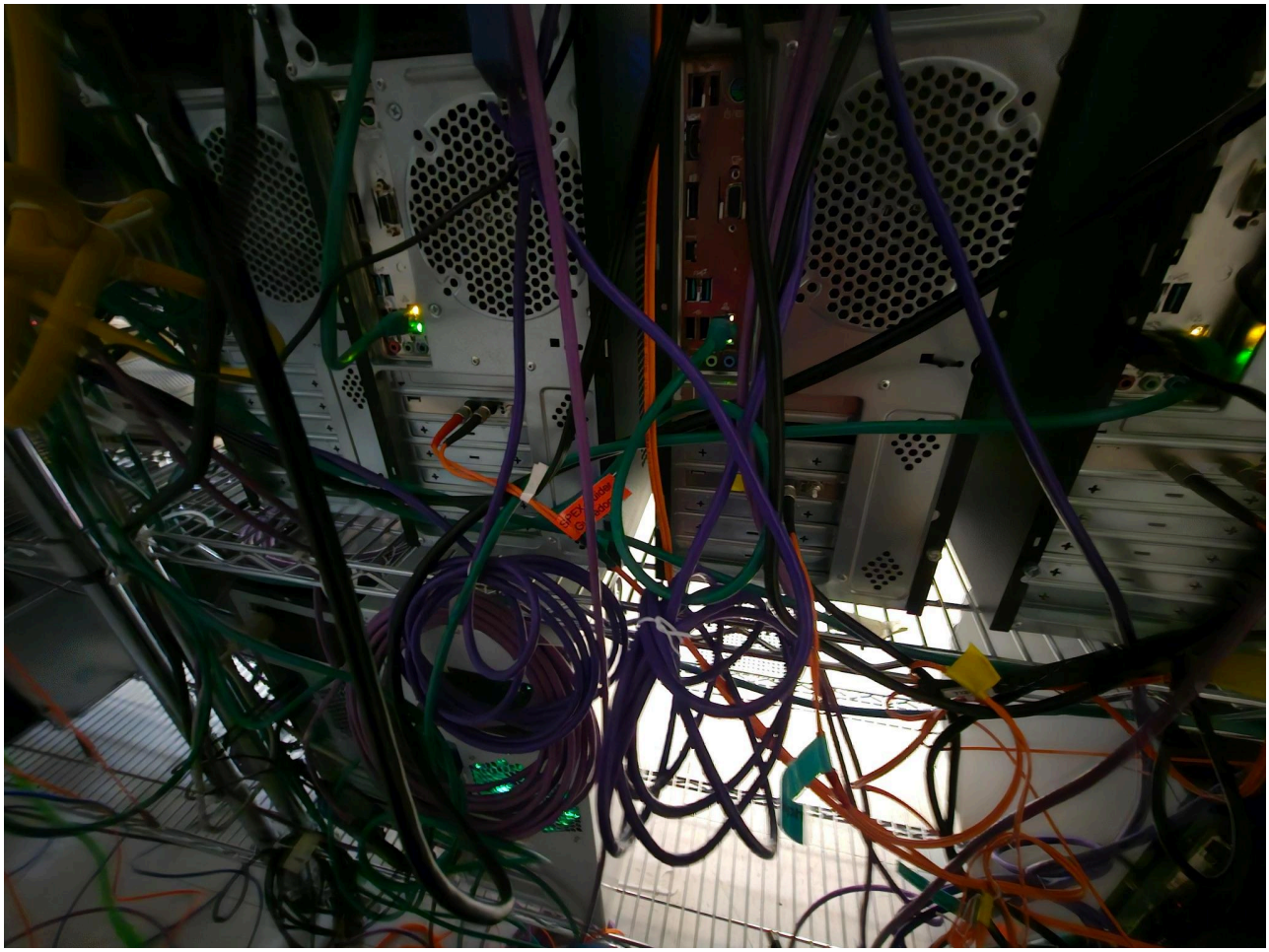

Figure 3: Back of the SpeX PCs where the fibers go in.

- Check the LEDs on the top of the array controller. A full set of green LEDs means that it's working. A partial set means that it's failing to load the firmware.

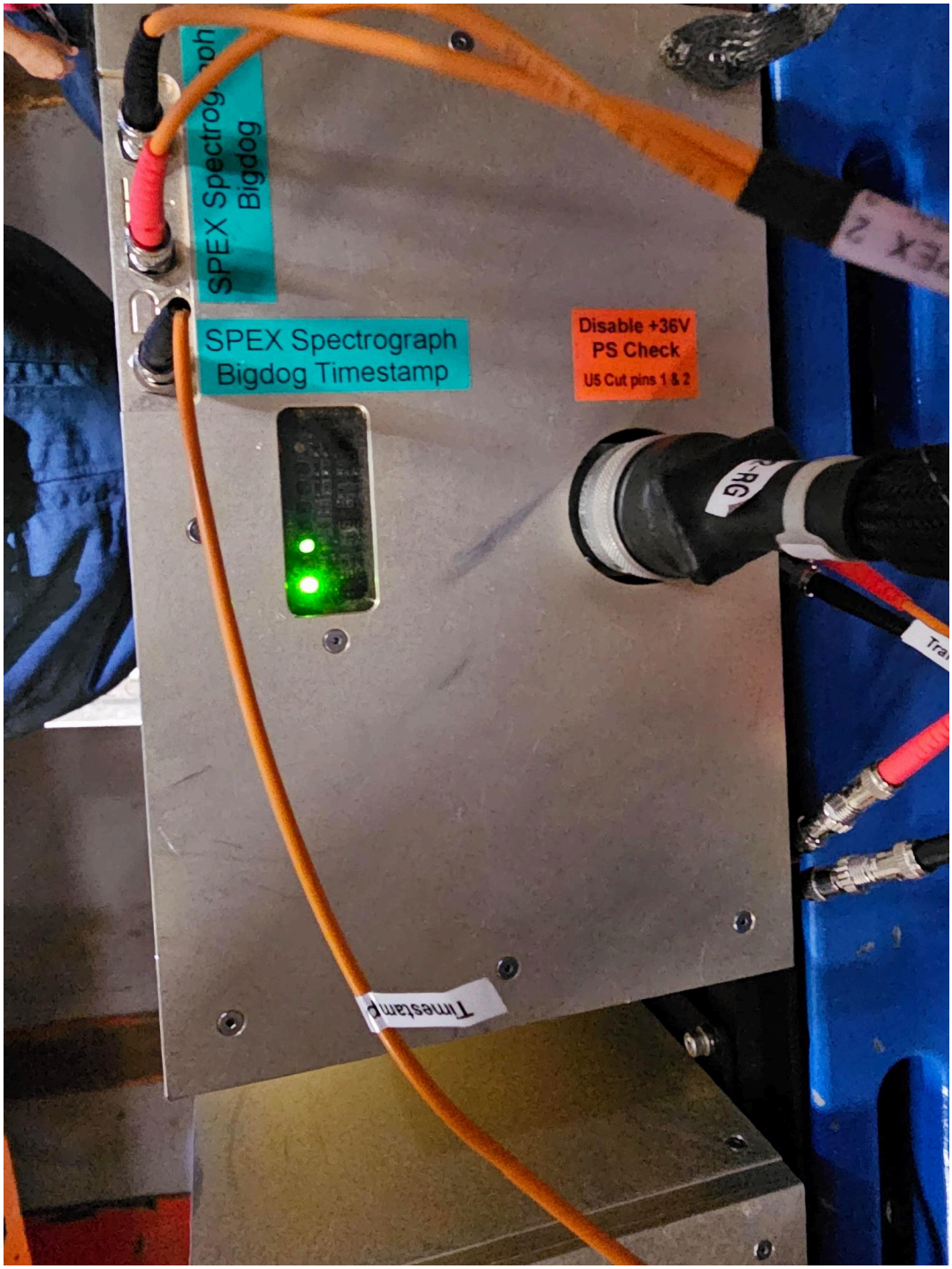

Figure 4: The top of the Spex/Bigdog array controller. Only some of the green LEDs are on, which means that it's not loading the firmware.

This troubleshooting showed:

- It’s not a software problem.
- The PCs are getting signal from the controllers, and the controllers are transmitting.
- The controllers aren’t getting the firmware commands

This led us to think that the fibers were dirty, specifically the fiber that transmits the firmware to the controller. Once the fibers were cleaned, Bigdog worked normally.