PR2 Server CMOS Battery Replacement Instructions

July 1, 2015
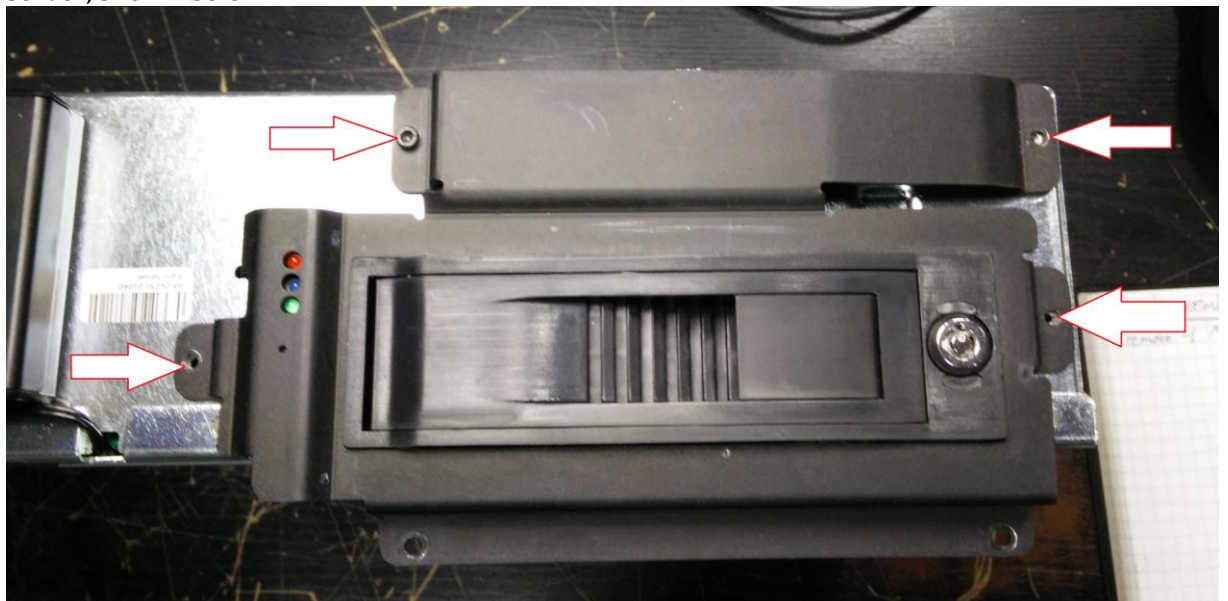
This is a walkthrough of how to dismantle the PR2 servers to access and replace the CMOS battery on the motherboard. These pictures were only taken of the C1 server as the same screw location and instructions apply to the C2 server. For those interested in purchasing their own pair of batteries it can be found online as "Panasonic 3V CR2032", or on Digikey as part number P189-ND.

!Warning! Take care to use the absolute correct size of tool for each fastener as screw head stripping can happen easily.
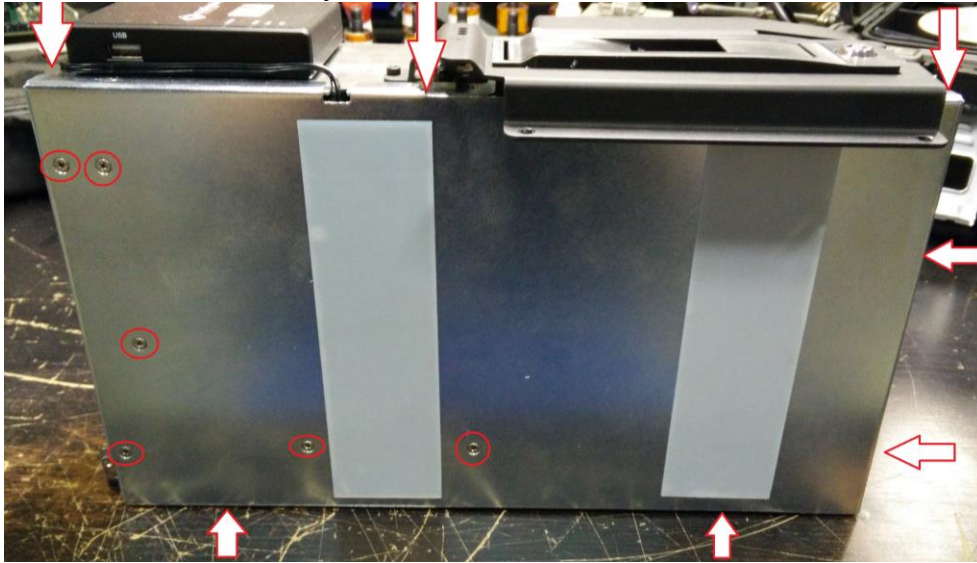
1. Remove the two servers from the chassis of the robot following the other attached set of instructions
2. Begin by removing the 4 M2.5 screws fastening down the black plate on the top of the server, shown below.

3. Next carefully remove all 14 small Philip screws that fasten the outer shell. Some of these may require a fair bit of pressure to avoid stripping the head. Be sure to use a Philips screw driver that correctly fits. Shown below are the screw locations.
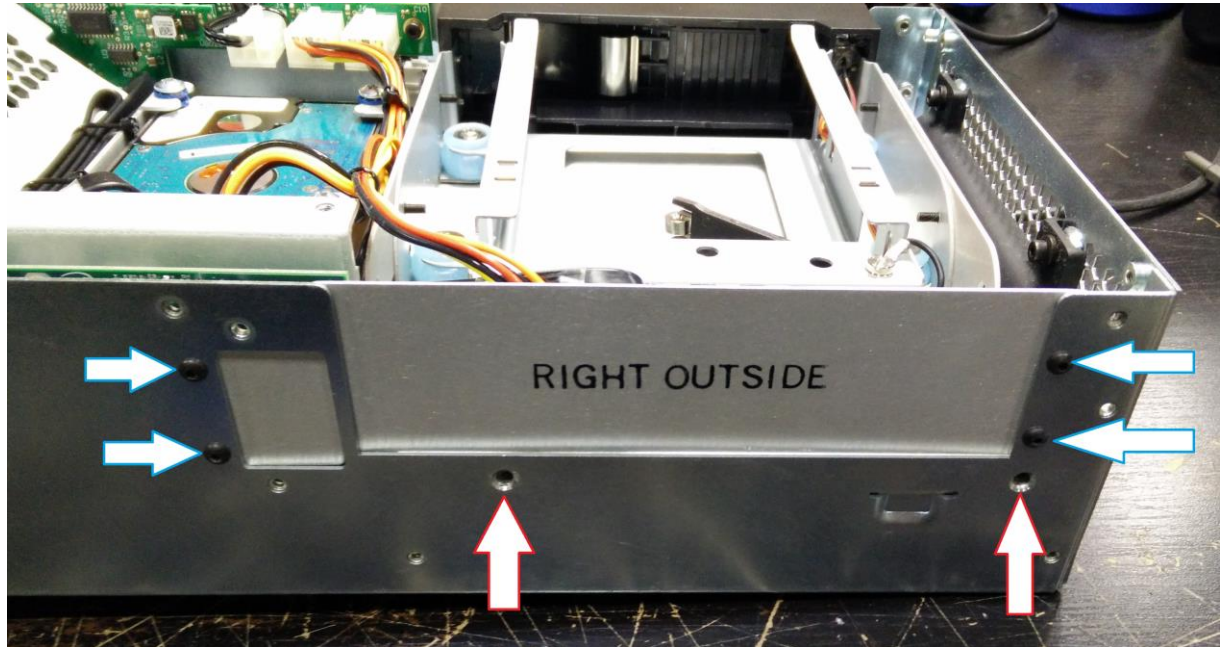

4. Next removing the 2 Phillips screw from the top of the server that fasten the middle tray. Locations shown below.
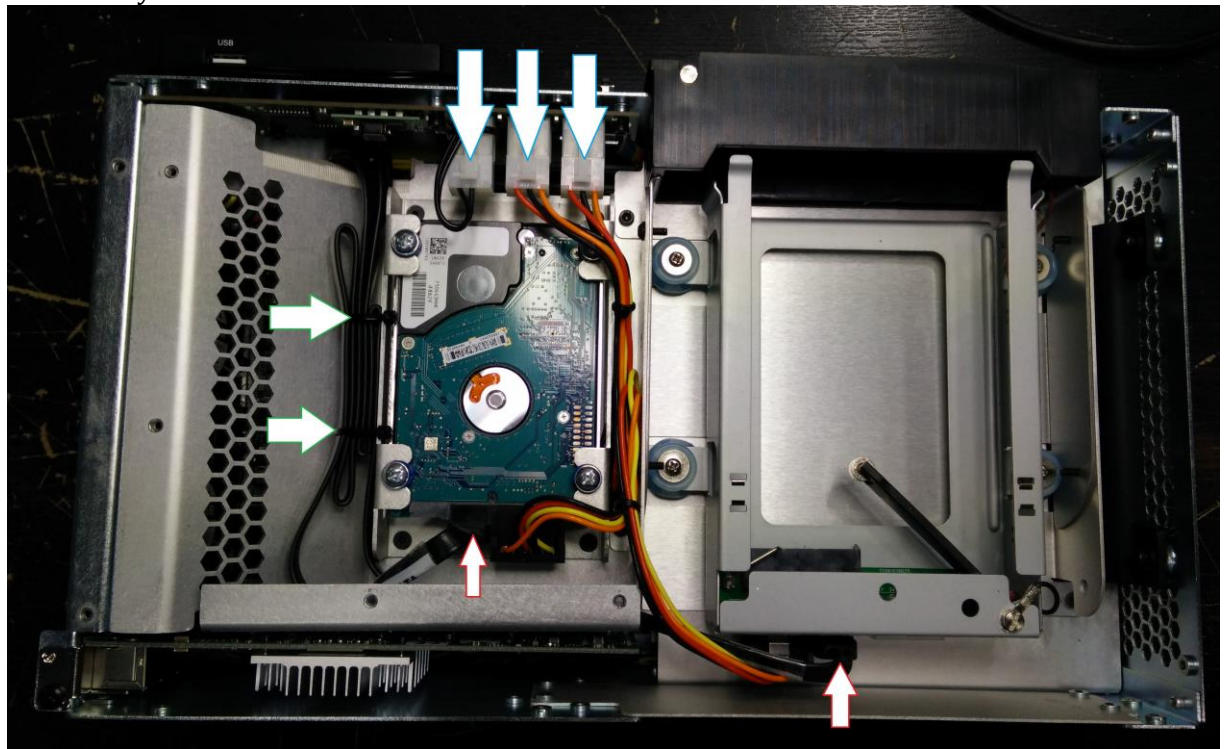
5. Next on the bottom of the server remove the 2 Phillips screws also fastening the middle tray (red arrows) and the 4 M2 screws fastening the small plate (blue arrows). Locations shown below.

6. Next unplug both SATA cables from the hard drives (red arrow) and both the hard drive power cables from the breakout board (blue arrow). Removing the WAP power cable from the breakout board is only necessary on C1. Lastly snip the two zip ties holding down the SATA cables (green arrow) then folding them up and out of the way of the middle tray.
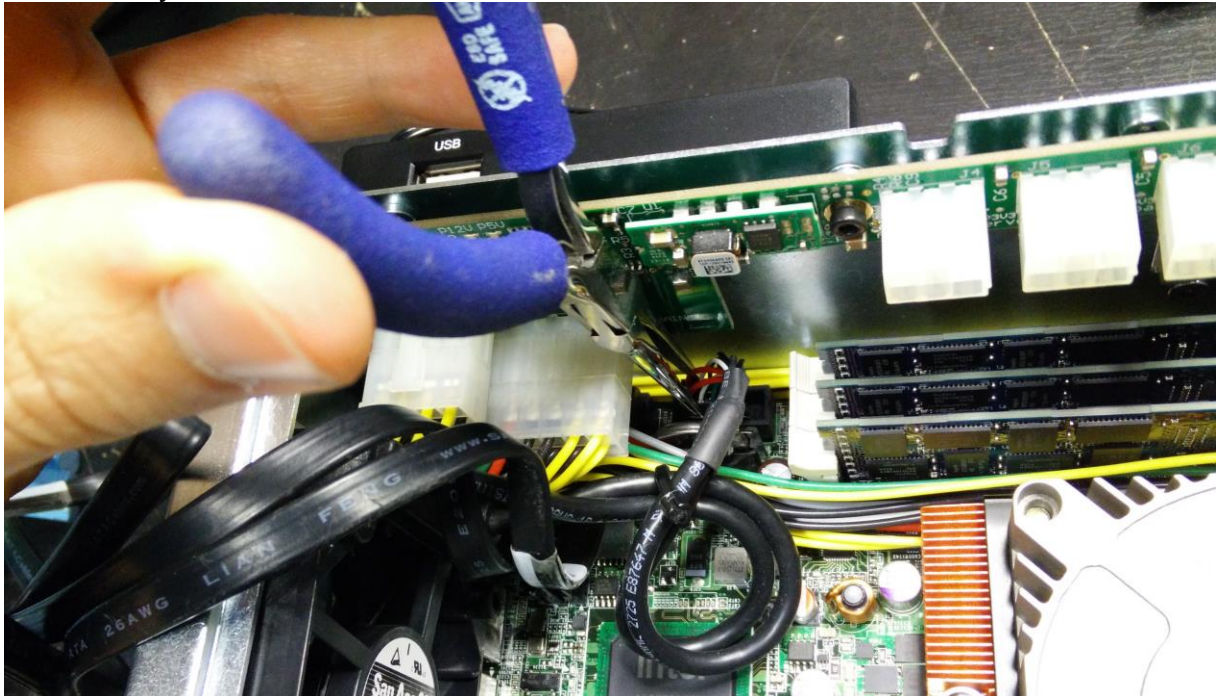
7. Remove the middle tray gentle by lifting first from the back then sliding forward and out.
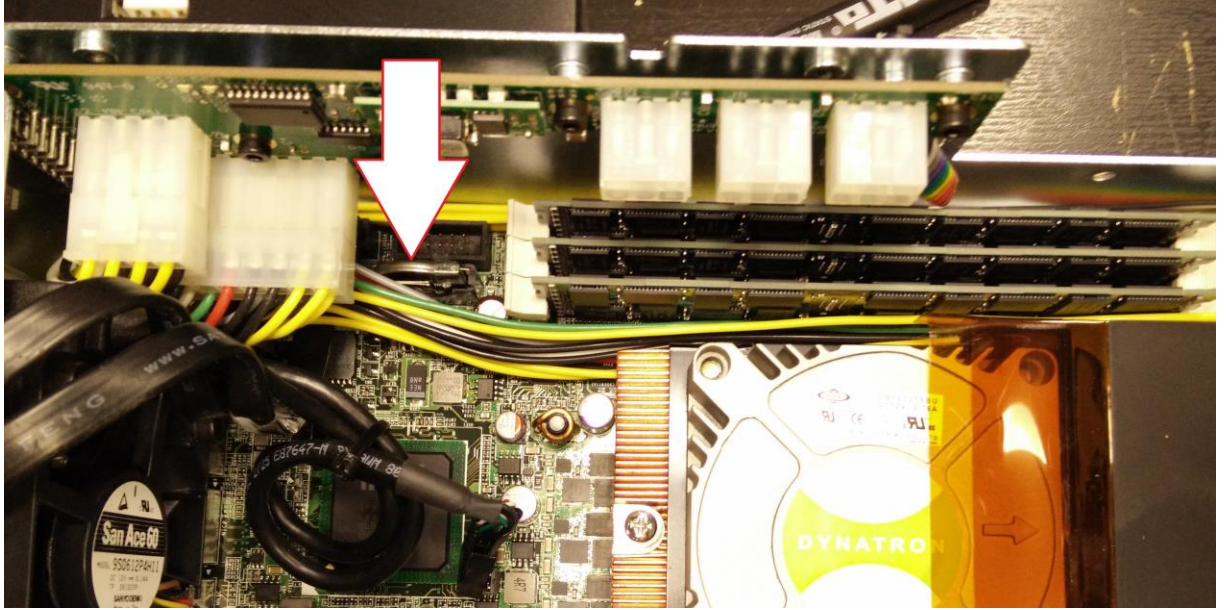

8. Once the middle tray is free the motherboard will be visible. The small coin sized CMOS battery is hiding in the upper left side under cables. Lift the SATA cables out of the way and, if needed, with a pair of small pliers unplug the extra USB cables to gain easy access to the battery

9. Locate the battery and with one finger flip back the retaining hook and remove the battery. When replacing be certain that the battery goes back in the same orientation.

10. Once the battery has been replaced, reverse all steps above, following the guide below for torque and Loctite values of each step. !Warning! Be conservative with your Loctite.

   Step 5 - Red arrow (1.00 N.M, Loctite 222), Blue arrow (.68 N.M, Loctite 222)
   Step 4 – Red arrow (1.00 N.M, Loctite 222)
   Step 3 – Red arrow (1.00 N.M, Loctite 222)
   Step 2 – Red arrow (1.36 N.M, Loctite 222)

11. Final step before completely reinstalling the servers back into the chassis of the robot. Partially reconnect both servers to the PR2 plus a laptop and DVI monitor, you will still have to set the time and date now. Press F2 when prompted, select the date, and press F10 to save and exit. Once this is complete for both servers, finish inserting both servers into the chassis and boot the robot as normal.