

The web page that we now commonly use for monitoring the entire LBA is at:

https://www.narrabri.atnf.csiro.au/vlbi/lba_monitor.html

The monitoring the page uses requires access to a number of MoniCA servers, and some pre-computed JSON files generated by scripts. This wiki describes how to start all the connections and scripts required to make the LBA monitor page work.

MoniCA connections

Positional and weather information comes from MoniCA for ATCA, Parkes, Mopra, Hobart, Ceduna, ASKAP and Warkworth. To have this work requires that the webserver (namoi) have access to the MoniCA ASCII port 8051 on each of the MoniCA machines. For ATCA, Parkes, Mopra, ASKAP and Warkworth, namoi can access the MoniCA servers directly.

For the other observatories (Hobart and Ceduna) we need to set up some SSH tunnelling to allow namoi to get access. For this we make the ATNF machine mentok link to the Hobart MoniCA machine newsmerd, and the ATNF machine kaputar link to the Ceduna MoniCA machines ops1cd.

Setting up/troubleshooting Hobart

To setup the Hobart connection, login to mentok as vlbi and give the command:

```
screen -S hobart ssh -L mentok:8051:newsmerd:8051 -L
mentok:8052:newsmerd:8052 -L mentok:8053:pcfshb:8051 -L
mentok:8054:pcfске:8051 -L mentok:8055:pcfсыg:8051 \
observer@newsmerd.phys.utas.edu.au
```

You will need to know the observer password for newsmerd for this to work. If this command is successful you will end with an observer prompt on newsmerd. To exit screen without affecting the tunnel, press Ctrl-a d. You will get dropped back to a mentok prompt, but the tunnel will continue working in the background.

Of course, since we are running with screen, this SSH tunnel will survive even if VLBI logs out of mentok (as long as you haven't quit the screen session). So before you try starting a new screen session as above, try connecting to an existing one with:

```
screen -x hobart
```

If no screen is available called hobart, you will get a message saying as much. In that case, restart it with the "screen -S" command.

If the screen is present, but the monitoring is clearly not working on the web page, first check that the connection to newsmerd has not been dropped. If after connecting to the hobart screen you don't get a prompt on newsmerd then you will need to exit the screen, and restart it. In theory, the way we started the screen means this should never happen: if the connection to newsmerd dies, the screen session should disappear.

If the newsmerd connection is there, but the monitoring is not working, you will probably need to

restart the MoniCA process on newsmerd. To do this:

- Login to newsmerd as observer in another terminal (do not use the connection in the screen session for this).
- Look for the processes 'socket' and 'monica_monitor' with the command:

```
ps -u observer | grep 'socket\|monica_monitor'
```

- Take a note of the two PIDs that come back from that command, or if they are there at all (sometimes these processes fail).
- Stop the MoniCA server with:

```
~/usr/bin/open-monica-server.sh stop
```

- Kill the 'socket' and 'monica_monitor' processes, and make sure they are dead by checking with 'ps'.
- Restart the MoniCA server with:

```
~/usr/bin/open-monica-server.sh start
```

At this point the monitoring on the web page should return. If it doesn't, please reload the web page. If this still doesn't work, call Jamie Stevens.

Setting up/troubleshooting Ceduna

To setup the Ceduna connection, login to kaputar as vlbi and give the command:

```
screen -S ceduna ssh -L kaputar:8051:ops1cd:8051 -L  
kaputar:8052:ops1cd:8052 \  
observer@newsmerd.phys.utas.edu.au
```

You will need to know the observer password for newsmerd for this to work. If this command is successful you will end with an observer prompt on newsmerd. To exit screen without affecting the tunnel, press Ctrl-a d. You will get dropped back to a kaputar prompt, but the tunnel will continue working in the background.

Of course, since we are running with screen, this SSH tunnel will survive even if VLBI logs out of kaputar (as long as you haven't quit the screen session). So before you try starting a new screen session as above, try connecting to an existing one with:

```
screen -x ceduna
```

If no screen is available called ceduna, you will get a message saying as much. In that case, restart it with the "screen -S" command.

If the screen is present, but the monitoring is clearly not working on the web page, first check that the connection to newsmerd has not been dropped. If after connecting to the ceduna screen you don't get a prompt on newsmerd then you will need to exit the screen, and restart it. In theory, the way we started the screen means this should never happen: if the connection to newsmerd dies, the screen session should disappear.

If the newsmerd connection is there, but the monitoring is not working, you will probably need to restart the MoniCA process on newsmerd. To do this:

- Login to ops1cd as observer in another terminal (do not use the connection in the screen session for this). If you're within the ATNF firewall, you'll need to do this via newsmerd first.
- Look for the processes 'socket' and 'monica_monitor' with the command:

```
ps -u observer | grep 'socket\|monica_monitor'
```

- Take a note of the two PIDs that come back from that command, or if they are there at all (sometimes these processes fail).
- Stop the MoniCA server with:

```
~/usr/bin/open-monica-server.sh stop
```

- Kill the 'socket' and 'monica_monitor' processes, and make sure they are dead by checking with 'ps'.
- Restart the MoniCA server with:

```
~/usr/bin/open-monica-server.sh start
```

At this point the monitoring on the web page should return. If it doesn't, please reload the web page. If this still doesn't work, call Jamie Stevens.

Monitoring other observatories

Two other observatories are monitored without MoniCA: Tid and Hart.

Tidbinbilla monitoring

The monitoring from Tid comes from the file `/home/vlbi/antenna_monitor/cdsc_monitor` on the tidvsi machine. This is a JSON file, but it needs to get into the ATNF network for the LBA monitor to use it.

To make this happen, we need to set up some more screen sessions. Login to mentok as the vlbi user, and give the command:

```
screen -S tidtunnel ssh -L 2230:203.5.58.205:22 vlbi@pam0
```

This sets up an SSH tunnel through pam0 (the only machine able to directly SSH into tidvsi) to tidvsi. We now have to run a script that gets the `cdsc_monitor` file every 5 seconds and puts it in the right place. To do this, as vlbi on mentok, give the command:

```
screen -S tidget -d -m /n/vlbi/monitoring/gettidmon.pl
```

There should be no feedback from this command except the monitoring working on the web page.

If the Tid monitoring isn't working, contact Tid staff, as there is nothing we can do to fix it.

Hart monitoring

For Hart we need to use a script to grab the monitoring information they make available from http://spyda.hartrao.ac.za/cgi-bin/hartrao_26_lba.txt and turn it into a JSON file so it can be manipulated properly by the monitoring page. The script that does this is located at `/n/vlbi/monitoring/hart2json.pl`. We run this in a screen session as well and it will fetch new information every second and turn it into the file `/n/vlbi/monitoring/hart.json`, which the web page knows how to get.

To do this, login to mentok as the vlbi user, and give the command:

```
screen -S hart -d -m /n/vlbi/monitoring/hart2json.pl
```

There should be no feedback from this command except the monitoring working on the web page.

If the Hart 15m is being used instead of the 26m, start the monitoring script with:

```
screen -S hart -d -m /n/vlbi/monitoring/hart2json.pl 15
```

Monitoring the recorders

The VSIB recorders are monitored using a script that queries the recorder's server process and turns the result into JSON output. The script that does this is `/n/vlbi/monitoring/recorder2json_tunneled.pl`.

One instance of this script has to be run for each observatory, and for all observatories except ATCA an SSH tunnel must be setup to get access to the `recorder_server` query port 50080.

Setting up ATCA recorder monitoring

For the ATCA, all you need to do is use the script. Start the script on mentok with the command:

```
screen -S cavsijson -d -m /n/vlbi/monitoring/recorder2json_tunneled.pl \  
--prefix ca --host cavsil:cavsil:50080 --host cavsi2:cavsi2:50080
```

This will create a file `/n/vlbi/monitoring/carec.json` that will refresh every 20 seconds or so.

Setting up Parkes recorder monitoring

First, you will need to start an SSH tunnel on mentok with the command:

```
screen -S pkvsitunnel ssh -L 50082:pkvsi1:50080 -L 50083:pkvsi2:50080  
vlbi@pkvsi2-ext
```

Once this is done (you may be prompted for the vlbi password), exit the screen session (Ctrl-a d) and then run the command:

```
screen -S pkvsijson -d -m /n/vlbi/monitoring/recorder2json_tunneled.pl \  
--prefix pk --host pkvsil:localhost:50082 --host pkvsi2:localhost:50083
```

This will create a file `/n/vlbi/monitoring/pkrec.json` that will refresh every 20 seconds or so.

Setting up Mopra recorder monitoring

First, you will need to start an SSH tunnel on mentok with the command:

```
screen -S mpvsitunnel ssh -L 50080:mpvsil:50080 -L 50081:mpvsi2:50080  
vlbi@mpvsil-ext
```

Once this is done (you may be prompted for the vlbi password), exit the screen session (Ctrl-a d) and then run the command:

```
screen -S mpvsijson -d -m /n/vlbi/monitoring/recorder2json_tunneled.pl \  
--prefix mp --host mpvsil:localhost:50080 --host mpvsi2:localhost:50081
```

This will create a file `/n/vlbi/monitoring/mprec.json` that will refresh every 20 seconds or so.

Setting up Hobart and Ceduna recorder monitoring

First, you will need to start an SSH tunnel on mentok with the command:

```
screen -S utastunnel ssh -L 50084:hovsi:50080 -L 50085:cdvsi:50080  
vlbi@hovsi.phys.utas.edu.au
```

This sets up the SSH tunnels for both the Hobart and Ceduna recorders. Once this is done (you may be prompted for the vlbi password), exit the screen session (Ctrl-a d) and then run the commands:

```
screen -S hovsijson -d -m /n/vlbi/monitoring/recorder2json_tunneled.pl \  
--prefix ho --host hovsi:localhost:50084
```

```
screen -S cdvsijson -d -m /n/vlbi/monitoring/recorder2json_tunneled.pl \  
--prefix cd --host cdvsi:localhost:50085
```

This will create the files `/n/vlbi/monitoring/horec.json` and `/n/vlbi/monitoring/cdrec.json` that will refresh every 20 seconds or so.

VEX checking

The LBA monitor page can use the VEX file for the experiment to check that what is being observed is what the schedule specifies. To make this work however we need to convert the VEX file into JSON format and put it in the place that the web page expects it to be.

Creating the JSON file is easy. Grab the VEX file and put it into the directory `/n/vlbi/monitoring`.

Log in to mentok as the VLBI user and change to that same directory. Now use the `vex2json.pl` script in that directory to do the conversion. For example, if you have the VEX file `v486d.vex`, you would give the command:

```
/n/vlbi/monitoring/vex2json.pl v486d.vex > v486d.json
```

This would make the file `v486d.json` in the same directory.

To put this JSON file where the web page can grab it, copy it to `/n/vlbi/monitoring/currentvex.json` (overwriting that file).

The web page is designed so that it will look at that file when the page is loaded, or when the last scan in the VEX file that it currently has is in the past. So all you need to do is make sure the new JSON file is in place a few minutes before the end of the current experiment and the web page should pick up the new JSON automatically.

Sometimes the browser will stop looking for the new JSON file if it sees that it hasn't varied for a long time. In this case you will need to clear the browser's cache before it will pick up the new schedule.

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