

# DiFX2.0Beta Installation and usage notes

HEB (with Adam) 6 Oct 2009.

## Installation notes

SVN checkout

SVN checkout setup.bash (new version)

Edit ROOT PATHS in setup.bash:

- DIFXROOT/DIFX\_PREFIX
- PGPLOTDIR
- IPPROOT

Check/edit libraries, perl version etc.

On cuppa: source /nfs/apps/corr/DiFX-2.0beta/setup/setup.bash (add to .bashrc - but comment out line 'echo " DiFX version \$DIFX\_VERSION is selected" ' for interactive login)

In each each area see README for commands to run

(Generally:

```
./configure  
make  
make install)
```

Compile:

in \$DIFXROOT/libraries

- difxio
- difxmessage
- mark5access

in \$DIFXROOT/applications

- mk5daemon (determines what module is loaded - needs streamstor libraries)
- vex2difx
- difx2fits

in \$DIFXROOT/utilities

- calcif2 (writes .im file - CALC\_SERVER needs 32-bit machine)

Compile mpifxcorr

Binaries go to \$DIFXROOT/bin/

# Usage

1. vex2difx - produces .input and .calc files
2. calcif2 - produces .im file
3. mpifxcorr - writes output files to .difx directory
4. difx2fits - converts output to FITS (and ascii tables)

## 1. vex2difx

See [vex2difx documentation](#) for .v2d file setup instructions.

ANTENNA blocks - 2 letter station codes

include ATCA X,Y,Z

EOP + clocks can be inserted in .v2d file (our method for v252k) or appended to vex file

### About EOPs:

Experiment on MJD 54885 - get EOPs for 5488[3..7] from usno\_finals.erp

Watch units!

Polar motion: .erp uses 0.1 arcsec; .v2d requires arcsec

UT1-UTC: .erp uses microsec; .v2d requires offset seconds

\* Adam fixed bug in vex2difx where S2 mode calculation was wrong (ch2tracks): #tracks=#channels (not #bits)

In .v2d can override default parameters e.g. for maximum output file size [2 GB], maximum length of job [7200s] by specifying maxSize and maxLength.

in SETUP block, new parameters for efficiency: xmacLength (=32 for 32 channels, needed for v252k) and strideLength (=8)

RULE block (we use setup = default)

v252k specific:

- split in two halves (mjdStart and mjdStop), change Tid name and positions in each

- in resulting .input file, insert `FREQ OFFSET` for O'Higgins (-80000.0 Hz)

## 2. calcif2

calcif2 <file\_prefix>.calc - also needs <file\_prefix>.input

Run in Socorro for v252k 1st half, use CR's machine as CALC\_SERVER here for second half (start on unctious with /home/creynolds/data2/difx/bin/startCalcServer). Comparison done for 1st half: identical .im 😊

### 3. mpifxcorr

We use mpirun as usual (make sure pointing to correct version of mpifxcorr)

(machines, threads file same as for earlier versions)

New features:

1. errormon2 - run to monitor mpifxcorr. Opens log file (and seems to move old log to log.1, log.1 to log.2, etc.)
2. stopmpifxcorr - to stop everything! (Seems to often complain though, about too many processes running etc.?)

Makes directory <file\_prefix>.difx - need to remove or rename before restarting.

### 4. difx2fits

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