

IMa2p on HPC

What is IMA2p?

Ma2p is a parallel implementation of IMA2, using OpenMPI-C++ - a Bayesian MCMC based method for inferring population demography under the IM (Isolation with Migration) model. Please refer to Sethuraman and Hey (2015) for details of implementation.

Links:

[GitHub](#)

[Documentation](#)

Versions Available:

The following versions are available on the cluster:

- IMA2p

How to load IMA2p?

To load HYPRE, use the following commands:

```
#Load the HYPRE module  
module show bio/ima2p
```

To verify if the module and dependencies are loaded correctly, use the following command.

```
#Show all the modules loaded  
module list
```

This should list all the HYPRE and dependencies that are loaded- openMPI and ima2p.

How to use IMA2p?

Here is the general outline of how to use IMA2p,

- Prepare your data in a format that is compatible with IMA2p. This may involve formatting DNA sequences, genotype calls, or pedigree data as a text file.
- Create a model file that specifies the options and parameters for your analysis.
- Run IMA2p using the input data and model file. You can do this by running the ima2p command from the command line, followed by the input, output, and model file names.
- Interpret the results of the analysis. The output file generated by IMA2 will contain the results of the analysis, which you can view and analyze using a text editor or other tool.

See the IMA2 documentation for more information.

To see the command line arguments for the program,

```
# CMD Args
IMa2p -h
```

Use the following slurm script for reference,

```
#!/bin/bash
#SBATCH --job-name=ima2_analysis
#SBATCH --output=ima2_analysis.out
#SBATCH --error=ima2_analysis.err
#SBATCH -p main
#SBATCH --qos main
#SBATCH --ntasks=4
#SBATCH --mem=16GB
#SBATCH --cpus-per-task=1

# Set up the environment
module load bio/ima2p

# Run the IMA2p analysis with MPI
mpirun -np $SLURM_NTASKS ima2 \
  --input input_file.txt \
  --output output_file.txt \
  --model model_file.txt \
```

Where to find help?

If you are stuck on some part or need help at any point, please contact OIT at the following address.

<https://ua-app01.ua.edu/researchComputingPortal/public/oitHelp>

