

# Buildbot builder matrix

## The reference builder

The current reference [slave](#) is “alps”, with reference builder “alps\_gnu\_9.3\_openmpi (LPR)”. In order to understand the rationale behind the set of the different builders let's first detail this reference builder LPR.

LPR “alps\_gnu\_9.3\_openmpi” is characterized by the following elements :

- The compiler is gcc 9.3 with “-O2 -g -Wall -Wno-maybe-uninitialized -ffpe-trap=invalid,zero,overflow -fbacktrace -pedantic -fcheck=all” flags.
- The MPI is Open MPI version 4.0.4.
- The compilation is done with “make -j 8”, with the external libraries : NetCDF-C(-Fortran), HDF5, LibXC, OpenBLAS, Wannier90 and PSML, build with MPI and with MPI\_IO .
- GW is compiled with double precision
- The tests are executed with “./runtests.py” (and the list of tests is coherent with the fallbacks and flags)

This reference builder is not doing everything :

- The buildsys, abirules, robodoc-parent-abiauty, seq, tparal, gpu tests are not executed by LPR
- OpenMP, and memory profiling is not activated for LPR
- Several procedures are not tested by LPR, like distchck.
- GW is not tested in single precision
- BigDFT tests are not executed (for the time being)

## The other builders

Each one of the other builders departs from the reference, in order to test the portability of the build system and automatic tests. The characteristics of this departure are indicated in the last column of the table.

Thus some reference files cannot be generated on abiref. For this purpose, auxiliary reference builders are provided :

- alps\_gnu\_9.3\_serial (for the seq tests)
- buda2\_gnu\_8.3\_cuda (for the gpu tests)
- scope\_gnu\_10.2\_paral (for the tparal tests, that need more than 10 procs)

Also, some bots provide unique services :

- bob\_gnu\_7.5\_openmp and ubu\_intel\_16.0\_openmp (OpenMP)
- max2\_gnu\_6.5\_mpich (enable\_memory\_profiling=yes, detect memory leak)
- abiref\_gnu\_9.2\_debug (for buildsys, abirules, parent, robodoc, distchk [checking the production of the .tar.gz package], html link checker, and robodoc-html tar.gz package)...
- higgs\_gnu\_7.5\_cov and ubu\_intel\_16.0\_mpich test the BiDFT library.

## Matrix of builders

slave	#nightly builds	builder	nightly?	compilo	MPI	linalg	Libs Tested	departure from ref
abiref	2	abiref_gnu_9.2_debug	yes	gcc-9.2				many services
		abiref_intel_19.1_mpich	yes	intel-19.1.3	mpich 3.3.2	mkl 2020	APW	scalapack enabled
alps	3	alps_nag_7.0_openmpi	yes	nag-7.0	openmpi-4.0.4	netlib_3.9.0	A	enable-netcdf-default
		alps_gnu_9.3_openmpi	reference	gcc-9.3	openmpi-4.0.4	OpenBLAS_0.3.10 fftw3	ABPW	-fno-frontend-optimize -ffpe-trap=i,z,o
		alps_gnu_9.3_serial	reference	gcc-9.3		OpenBLAS_0.3.10 fftw3	APW	fcheck=all -ffpe-trap=i,z,o
		alps_intel_21.1_elpa	no	intel-21.1	impi	mkl 2021.1	APW	scalapack elpa 2020.11
atlas	2	atlas_intel_18.0_openmpi	yes	intel-18	openmpi 3.0	mkl 2018	APW	enable-netcdf-default
		atlas_intel_19.1_bdir	yes	intel-19.1	mpich 3.3.2	mkl 2020	APW	build/ dir enable-netcdf-default
bob	1	bob_gnu_7.5_openmp	yes	gcc-7.5		atlas-3.10	P	Fedora packages
buda2	3	buda2_gnu_8.3_cuda	yes	gcc-8.3	openmpi-3.1	mkl 11.1 cuda 10		enable_gpu
		buda2_gnu_8.2_mpich3	yes	gcc-8.2	mpich3-3.2.1	mkl 2017	APW	-finit=nan
		buda2_intel_17.0_openmpi	yes	intel-17.0	openmpi-4.0.4	mkl 2017	APW	enable-netcdf-default
graphene	1	graphene_gnu_9.3_macports	yes	gcc-9.3	opempi-4.0.1	OpenBLAS fftw3	AW	MacPorts GW_SP
higgs	1	higgs_intel_19.0_serial	yes	intel-19.0		mkl 2019	APW	
		higgs_gnu_7.5_triqs2	no	gcc-7.5	mpich3-3.2	netlib fftw3		triqs 2.0.x
		higgs_gnu_7.5_cov	odonly	gcc-7.5	mpich3-3.2	mkl 2019	ABPW	coverage analysis enable-netcdf-default
		higgs_gnu_7.5_hpc	no	gcc-7.5				hpc tests
max2	1	max2_gnu_6.5_mpich	yes	gcc-6.5	mpich3-3.2	acml 6	APW	memory leak
scope	2	scope_gnu_10.2_parallel	ref for tparallel	gnu-10.2	mpich3-3.2	OpenBLAS	PW	mpirun -np 2 if max_nprocs allows it (dynamically) enable-netcdf-default GW_SP
		scope_gnu_7.5_dep	yes	gnu-7.5	mpich3-3.2	OpenBLAS	PW	check dependency enable-netcdf-default
ubu	3	ubu_gnu_9.2_openmpi	yes	gcc-9.3.0	openmpi-4.0.2	mkl 11.2	APW	check=all -fno-frontend-optimize
		ubu_intel_16.0_mpich	yes	intel-16.0	mpich3-3.2	mkl 11.3	ABPW	
		ubu_intel_16.0_openmp	yes	intel-16.0		mkl 11.3	A	OpenMP / dfti

\*Caption for external fallbacks : A= AtomPAW, B= BigDFT, P= PSML+XMLF90, W= Wannier90

\* Mandatory fallbacks : linalg, netCDF-C/netCDF-Fortran with HDF5 support and libXC

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