

Performance Comparison – Fortran Compilers on AMD

Absoft Fortran compilers have been independently verified to provide industry leading performance on 32-bit & 64-bit, AMD and Intel, single and multi-core systems.

The charts below reprint the Polyhedron Fortran Benchmark results as calculated and published by Polyhedron Software Ltd. UK in February 2009. The benchmarks compare time in seconds for different leading Fortran compilers to run each of 16 different benchmark programs. Tests were run on Linux x64 and Windows 32-bit systems. Lower numbers are faster.

Win32 on AMD	Absoft 10.2	ftn95 5.21.0	g95 0.91	Gfortran 4.3.0	Intel 11.0.066	Lahey 7.10.02	NAG 5	PGI 8.0-3
AC	12.86	19.28	20.48	12.58	11.11	22.78	36.83	27.71
AERMOD	33.81	40.36	51.38	37.33	21.96	34.32	56.68	27.25
AIR	15.94	23.77	17.98	14.39	13.14	19.53	15.33	15.18
CAPACITA	60.45	84.78	92.25	79.22	83.18	102.33	100.65	55.23
CHANNEL	13.79	21.47	14.97	10.77	13.77	15.66	12.90	12.04
DODUC	42.23	59.13	46.51	35.63	35.62	52.23	66.32	37.73
FATIGUE	7.52	23.32	55.54	19.05	12.32	17.06	23.06	9.53
GAS_DYN	5.82	24.21	26.90	18.39	5.66	12.48	24.66	9.28
INDUCT	29.92	94.34	52.73	49.32	65.77	79.98	79.11	28.76
LINPK	22.61	22.87	23.13	21.21	25.16	22.50	21.41	23.11
MDBX	17.53	31.25	25.10	16.84	17.93	27.50	21.30	18.67
NF	25.80	46.95	46.22	29.26	25.90	38.85	27.64	25.54
PROTEIN	44.74	90.95	68.82	54.36	46.51	79.44	62.81	55.10
RNFLOW	30.32	44.14	40.08	48.52	33.67	36.34	48.05	44.13
TEST_FPU	17.77	26.21	32.24	19.76	18.26	20.65	20.48	18.67
TFFT	7.23	8.40	7.36	7.00	7.07	7.39	7.48	7.64
Geometric Mean	19.83	33.97	32.67	24.17	20.99	28.85	30.99	21.90

Numbers are times in seconds, lower numbers are faster!

Linux x64 on AMD	Absoft 10.2	g95 0.91	Gfortran 4.3.0	Intel 11.0.074	Lahey 8.1	NAG 5.1	Pathscale 3.2	PGI 8.0-2	Sun 8.3
AC	9.08	17.62	13.28	11.58	13.93	21.51	8.89	12.13	17.57
AERMOD	23.50	39.45	32.40	20.11	24.26	37.86	36.10	24.67	26.44
AIR	13.34	19.27	12.98	11.47	49.96	12.70	12.38	13.53	11.71
CAPACITA	55.29	94.69	83.18	75.56	99.11	83.84	56.93	54.17	82.11
CHANNEL	16.50	23.70	11.51	14.45	14.82	13.40	17.33	12.45	11.06
DODUC	33.82	44.78	40.81	30.45	39.16	43.88	35.40	31.70	39.29
FATIGUE	5.33	36.82	9.30	7.20	10.40	17.54	5.29	6.99	7.16
GAS_DYN	5.19	18.88	10.24	6.40	7.72	12.65	7.81	8.01	10.71
INDUCT	28.29	40.67	41.65	34.99	42.86	34.45	26.07	31.71	36.55
LINPK	25.42	25.05	23.43	23.23	23.32	21.52	25.49	24.09	23.93
MDBX	17.13	19.09	18.74	17.04	17.06	18.65	16.97	18.31	15.91
NF	26.04	42.72	28.49	22.77	33.74	24.21	24.90	25.58	25.91
PROTEIN	42.73	62.26	50.62	41.31	70.47	48.29	45.64	50.28	57.54
RNFLOW	27.49	45.20	31.09	33.06	35.10	36.93	32.35	37.94	32.03
TEST_FPU	17.26	30.77	19.50	16.51	18.65	18.45	17.33	17.74	14.90
TFFT	7.19	7.41	7.24	7.13	7.10	7.20	7.36	7.82	7.06
Geometric Mean	17.93	30.28	21.69	18.61	24.29	23.55	19.06	19.56	20.59

Absoft Pro Fortran products are available for Windows, Linux & Mac OS

Green cells are performance figures within 10% of fastest, **Red** cells are more than 150% of fastest.
OS/Hardware: Linux openSUSE 10.2 and Windows Vista - Dell E521 with AMD X2 5600 (2.8 GHz)

Times: Each time represents an average of at least 10 runs; one option set per vendor - No performance tuning for individual programs
Tests and results provided by Polyhedron Ltd. February 2009.

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