



# HPC2002 Result

Copyright ©1999-2002, Standard Performance Evaluation Corporation

IBM Corporation  
IBM RS/6000 SP-375MHz T

SPECenvM2002 = 71.8

SPEC license #: HPG0021A | Test site: NREL, Golden, CO | Test date: Nov-2002 | HW Avail: Feb-2000 | SW Avail: Dec-2001

Benchmark	Reference Time	Runtime	Ratio
361.wrf_m	86400	1203	71.8

Hardware		Software	
CPU:	Power3-II	Parallel:	MPI
CPU MHz:	375	Processes-Threads:	48
FPU:	Integrated	MPI Processes:	48
CPU(s) enabled:	56	OpenMP Threads:	--
CPU(s) orderable:	128	Operating System:	AIX 4.3.3
Primary Cache:	32KBI+64KBD (on chip)	Compiler:	C: IBM VAC 5.0.2.0, "mpcc_r" Preprocessor: IBM VAC 5.0.2.0, "/usr/ccs/lib/cpp" Fortran: IBM xl Fortran 7.1.1.0, "mpxf90_r"
Secondary Cache:	8MB unified (off chip)	File System:	AIX/GPFS
L3 Cache:	None	System State:	Multi-user
Other Cache:	None	Other Software:	Parallel Operating Environment (POE) 3.1.0.0 NetCDF 5.3.0
Memory:	2GB		
Disk Subsystem:	2x9.1GB		
Other Hardware:	Ethernet 10-Base2/SP-Colony Switch		

## Notes/Tuning Information

Tested by NREL (National Renewable Energy Lab)

### Flags:

```
C: -DNOUNDERSCORE -I{$SPEC}/netcdf32/include -O3 -qarch=pwr3 -qtune=pwr3
Preprocessor: -D_OPENMP -I{$SPEC}/netcdf32/include
Fixed Form Fortran: -qfixed
Free Form Fortran: -qsuffix=f=f90
Fortran: -NS4096 -I{$SPEC}/netcdf32/include -O3 -qarch=pwr3 -qtune=pwr3
-bmaxdata:0x60000000 -bmaxstack:0x20000000 -L{$SPEC}/netcdf32/lib -lnetcdf
```

### Alternate Source:

```
env2002-src_nrel_ibm-20021106.tar.gz
Directives to compile specific subroutines at lower optimization level to
allow remainder of wrf application to compile at high optimization
```

### User Environment:

```
limit stacksize 256m
limit memoryuse 2048m
```

### Submit command to run MPI applications

```
export "MP_HOSTFILE=\${HOME}/hostfile"; export "MP_PROCS=\$MPI_COMM_SIZE";
poe $command
```

### NetCDF 3.5.0 built from source

```
CPPFLAGS='-DNDEBUG'
CC='xlc_r'
CFLAGS='-D_LARGE_FILES -O -qmaxmem=-1'
CXX='xlc_r'
CXXFLAGS='-D_LARGE_FILES -O -qmaxmem=-1'
F90='xlf90_r'
FC='xlf_r'
F90FLAGS='-qsuffix=f=f90'
```