

## 5 MISCELLANEOUS

### 5.1 UDEC Runtime Benchmark

*UDEC* has been tested on a number of different computers. The calculation rates are compared here for a 25 block model (51,200 zones, 27,225 gridpoints and 2560 contacts) subject to isotropic loading. The model is run for 5000 steps, and the rate is calculated by a *FISH* function. The data file is given in [Example 5.1](#); [Table 5.1](#) summarizes the calculation rates for different computers.

#### *Example 5.1 Benchmark data file – “TIMING.DAT”*

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```

model new
;
; file: timing.dat
; speed test for zone stress/strain and contact force/displacements.
;
fish def rate
  rate = ((t1 - t0) * 1000.0) / (10000 * 27225)
end
fish def time0
  t0 = clock / 100.0
end
fish def time1
  t1 = clock / 100.0
end

block tolerance corner-round-length 1
block tolerance minimum-edge-length 2
block create polygon 0,0 0,5E2 5E2,5E2 5E2,0
block cut joint-set angle 0 spacing 100 origin 0,0
block cut joint-set angle 90 spacing 100 origin 0,0
block zone gen edge 5.0
block zone cmodel assign mohr-c density 2.5E3 bulk 1.19E10 ...
  shear 1.1E10 friction 44 cohesion 2.72E6 tension 2E6
block contact cmodel assign area stiffness-shear 1E9 ...
  stiffness-normal 1E9 friction 30 dilation 6
;insitu stress -1872000.0,0.0,-1872000.0 gradient-x 0.0,0.0,0.0 ...
; gradient-y 23400.0,0.0,23400.0
block mechanical gravity=0.0 -10.0
block gridpoint apply velocity-x 0 range -0.1,0.1 -0.1,500.1
block gridpoint apply velocity-x 0 range 499.9,500.1 -0.1,500.1
block gridpoint apply velocity-y 0 range -0.1,500.1 -0.1,0.1
block cycle 1
@time0
block cycle 10000 message off

```

---

```
@time1
fish list @rate
```

**Table 5.1** *UDEC 6.0 runtime calculation rates*

Processor Name	# of Processors	# of Cores/ # of Threads	Operating System	sec/gp /1000steps
Intel Xeon E5-2650 2.6GHz	2	8/32	Win 7 64 bit	0.000140
Intel Core i7-4930 3.9GHz	4	6/48	Win 7 64 bit	0.000146
Intel Core i7-3930 3.9GHz	4	6/48	Win 7 64 bit	0.000164
Intel Xeon 5680 3.33GHz	2	6/24	Win 7 64 bit	0.000166
Intel Core i7-3930K 3.20GHz	1	6/12	Win 7 64 bit	0.000177
Intel Core i7-3840QM 2.8GHz	1	4/8	Win 7 64 bit	0.000184
Intel Xeon E5-2620 2.0GHz	2	6/24	Win 7 64 bit	0.000200
Intel Core i7-2600 3.4GHz	1	4/8	Win 7 64 bit	0.000215
Intel Core i7-3613QM 2.1GHz	1	4/8	Win 7 64 bit	0.000222
Intel Core i7-970 3.2GHz	4	6/48	Win 7 64 bit	0.000238
Intel Core i7-950 3.06GHz	1	4/8	Win 7 64 bit	0.000239
Intel Core i7-870 2.93GHz	1	4/8	Win 7 64 bit	0.000262
Intel Core i7-4700MQ 2.40GHz	1	4/8	Win 8 64 bit	0.000282
Intel Pentium IV 2.66GHz	1	1/1	Win XP 32 bit	0.002993

## 5.2 Error Reporting

Although *UDEC* has been tested extensively, it is almost impossible to test all available combinations of options in a code as complex as this one. For this reason, some errors may have escaped our notice. If you discover a genuine bug, please let us know as soon as possible so that we may correct it.

### 5.2.1 *Reporting via the program*

Our preferred method of requesting support is through the program by clicking Help->Support in the GUI.

### 5.2.2 *Reporting via the Web*

Another method of requesting support is through the Web, at URL

<http://www.itascacg.com/software/software-support>

You may be directed to a different location, depending on which office or agent *UDEC* was purchased through.

### 5.2.3 *Reporting via Email*

Support may also be requested via email directed to the address provided by the office or agent where *UDEC* was purchased. If you are uncertain of what that address is, you can send a request to [software@itascacg.com](mailto:software@itascacg.com)

Please include your contact information and license number so that the question can be forwarded to the proper location.

## 5.3 Technical Support Service

Itasca and its offices and agents will provide telephone support, at no cost, to assist code owners with the installation of Itasca codes on their computer systems. Additionally, general assistance may be provided to help the owner in understanding the capabilities of the various features of the code. However, no-cost assistance is *not* provided for help in applying an Itasca code to specific user-defined problems. The complete terms of technical support are delineated in the “Code Support” section of the end-user license agreement that must be accepted prior to installation. The same information is available on the Itasca web site at <http://www.itascacg.com/software/software-support/support-policy>.

Questions should, in the first instance, be directed to the office or agent where *UDEC* was purchased.

