

SCILAB à l'École nationale des ponts et chaussées

<http://cermics.enpc.fr/scilab>

Netsolve

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1 Using NetSolve with Scilab

NetSolve is a project that aims to bring together disparate computational resources connected by computer networks. It is a RPC based client/agent/server system that allows one to remotely access both hardware and software components.

I provide here a patched version of NetSolve-1.4.1 which works with Scilab : NetSolve-1.4.1 for Scilab

This patched version will work with a Scilab cvs version (Sept 23 2002 or newer. For example, it is supposed to work with the rpm provided in this page) and I have only tested the code on Linux (RedHat 7.3).

A `make scilab` target is added in the NetSolve-1.4.1 Makefiles, and using `make scilab` should build a Scilab toolbox as a shared library. You can then test scilab/netsolve using `make tests` in the directory NetSolve-1.4.1/src/Testing/scilab. `make tests` will test some blas routines, ma28 and superlu solvers (assuming that ma28 and superlu solvers are present on the netsolve servers you are using).

A `lapack_test.tst` file is also provided, but with at least one uncorrected bug (A first call to `netsolve('dgesv',a,b)` returns a wrong result and subsequent calls return correct results). feedbacks are welcome.

You can also manually run a scilab test just by executing one of the `.tst` script (NetSolve-1.4.1/src/Testing/scilab) in Scilab :

```
clio% scilab -nw

=====
      Scilab
=====

scilab-2.7-CVS
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Startup execution:
  loading initial environment

-->exec ma28.tst
-->// test for MA28

-->exec('loader.sce');
shared archive loaded

-->//[A, rhs] = generate(1);
-->//A1=mtlb_sparse(A);
-->N=20;
-->A= int(N*sprand(N,N,95/100));
-->A1=mtlb_sparse(A);
-->rhs = ones(N,1);
```

```

-->x = netsolve('sparse_direct_solve','MA28',A1,rhs,0.3,1);
Sending Input to Server clio.enpc.fr
Downloading Output from Server clio.enpc.fr

-->if netsolve_check(0)== %f then pause,end
-->r = norm(full(A*x-rhs))/(norm(full(A))*norm(full(x))*%eps);
-->if r>50 then pause,end

```

The netsolve toolbox is loaded in Scilab by executing the `loader.sce` script file found in `NetSolve-1.4.1/bin/xxxx/loader.sce` where `xxx` is to be replaced by the proper bin architecture. For example, on my Linux machine, the NetSolve binaries are stored in `NetSolve-1.4.1/bin/i686_` and the toolbox Scilab loader is installed in that directory.