

Remotely Launching Unix HSpice From Within IConnect

Introduction

TDA Systems provides two example scripts to be used for running HSpice simulations on a remote unix machine as part of IConnect's integrated simulator interface. Separate scripts are available for Windows NT/2000 and Windows 95/98. To use the Windows 95/98 script, it may be necessary to install third-party software. You will have to customize the scripts to some extent to get them to operate effectively on your network.

Remote Access

Both scripts depend on your having access to your unix machine via the rcp and rsh (called remsh on HP machines) commands. In order to use these commands, you will need to create a .rhosts file in your home directory on the unix machine. (Consult the rsh/remsh man page for more details.) It is also possible that your in-house IT experts have disabled this capability for security reasons. If so, you will need to work with them to determine an acceptable solution for copying files to your unix machine and for remotely launching a process on it.

Format Conversion

It should be noted that IConnect can read the Unix HSpice simulation output directly, so returned data should not be translated from unix to DOS format. However, it is necessary to translate (done automatically by rcp) the netlist from DOS format to unix before running hspice on the unix machine.

The Script Itself

The first argument to the script is the name of the HSpice netlist, and the second is the expected name of the output file.

Because IConnect only gives the name of the overall netlist file and not each individual subcircuit file, this script sends all .cir files in the directory to the remote machine prior to running the simulation. And because IConnect provides only the fully qualified pathname of the output file to the script, the script chooses to transfer all .lis files back after the simulation.

This also avoids potential case-sensitivity problems. If you have a number of additional .lis files in the directory of your HSpice machine, or a large number of additional .cir files on your IConnect machine, this could become inefficient.

The generic scripting capability provided by Microsoft is very limited. You can probably come up with an improved solution by using a third-party scripting language such as perl. If you have ideas for how to simplify or improve this script in a way that is generic to all Microsoft-based and unix-based systems, please feel free to pass them along.

Syntax: Validate InputFile OutputFile

Before You Begin

To use either script, do the following:

1. Edit the first two "set" lines so that REMOTE contains the name or IP address of your machine that runs HSpice, and USERNAME contains your account name on that machine.
2. Create a TempSim directory below your home directory on the unix machine for performing all remote HSpice simulations.

Windows 98 Users

Because Windows 98 does not come with rcp and rsh clients, the script provided for use with Windows 98 was written to run in conjunction with shareware clients from Denicomp Systems.

Functional demonstration versions of the RCP/RSH/REXEC clients may be downloaded from <http://www.denicomp.com>, and later registered for a nominal fee. TDA Systems does not distribute or support the Denicomp products, and use of these products is solely at the risk of the user.

If you choose to use the Denicomp rcp and rsh clients, it will be necessary after installation to ensure that the executables rsh.exe and rcp.exe reside in your path. The simplest method to achieve this is to copy them to your C:\WINDOWS directory.

Assistance

These scripts are provided as a starting point to help you get a functioning connection to unix HSpice from IConnect. Due to the vastly differing policies and capabilities of various network setups, it is likely that some changes may be necessary in order to achieve a successful connection on your network.

While TDA Systems can provide some assistance in such matters, your on-site IT experts may be able to help you better.

Windows 98 Script

```
@echo off
```

```
REM This script launches a simulation on a Unix-based computer from  
REM within IConnect. This file runs under the MS Windows 98 command  
REM prompt to copy the netlist files from your PC to your unix box,  
REM execute an hspice simulation on the unix box, and then copy the  
REM simulation output file back to the PC. This script will not  
REM run as-is under Windows NT -- it is written to run using rcp  
REM and rsh clients from Denicomp Systems. For more info, see the  
REM readme file.
```

```
REM For specific instructions on using this script, see the readme  
REM file.
```

```
set REMOTE=192.168.0.1  
set USERNAME=steve
```

```
echo Copying netlists to remote machine...  
rcp *.cir %USERNAME%@%REMOTE%:~/TempSim
```

```
echo Launching simulator on remote machine...  
rsh %REMOTE% -l %USERNAME% "cd TempSim; hspice -i %1 -o %2"
```

```
echo Copying data from remote machine...  
rcp -b %USERNAME%@%REMOTE%:~/TempSim/*.lis .
```

Windows NT Script

```
@echo off
```

```
REM A solution for launching a simulation on a Unix-based computer  
REM from within IConnect. This file runs under the Microsoft Windows  
REM NT command prompt to copy the netlist files from your PC to  
REM your unix box, execute an hspice simulation on the unix box, and  
REM then copy the simulation output file back to the PC. This script  
REM will not run as-is under Windows 98 -- a separate script is  
REM available if you are running Windows 98.  
REM For specific instructions on using this script, see the readme  
REM file.
```

```
set REMOTE=192.168.0.1  
set USERNAME=steve
```

```
echo Copying netlists to remote machine...  
rcp *.cir %REMOTE%.%USERNAME%:~/TempSim
```

```
echo Launching simulator on remote machine...  
rsh %REMOTE% -l %USERNAME% "cd TempSim; hspice -i %1 -o %2"
```

```
echo Copying data from remote machine...  
rcp -b %REMOTE%.%USERNAME%:~/TempSim/*.lis .
```

HNET-1000

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