

PVM
C parallel programming
lab work

Using PVM

PVM can be configured onto your own computer under Linux or by loading the provided virtual machine within VirtualBox.

To set up your own computer you usually have to install two packages (pvm and pvm-dev) depending on your Linux distribution

Once installed, pvm is to be used as follows :

start a console by typing pvm. This also starts a pvm3d daemon that will handles all pvm library requests. A PVM machine is started onto the computer.

The prompt waits for commands. You can display them with help.

Main ones are :

- conf : shows the machine configuration
- ps ax : displays running process
- reset : kill all process except the console
- quit : quit the console without killing the machine
- halt : kill the machine and all running processes and leaves.

Once a machine is started, you can run PVM applications. Unzip and untar sources.tar.gz. It contains skeletons for the lab works.

Work to do

1. Go into Hello directory. Type make. Then run the application by typing ./hello. What happens ? Understand the code
2. Lock the code by introducing an infinite loop. Restart it in background. Check the processes existence within the PVM console. Reset them.
3. Lock both processes with a single loop.
4. Implement your own code for exchanging a table of integers among 2 processes. The script is as follows : the first one starts the second one and sends it data. The second do some computations onto data and sends back results, printed by one process. Both codes can be combined into a single source as depicted below :
if (pvm_parent() == PvmNoParent)
 First process code
else
 Second process code
endif

Note : you need gnuplot in order to visualize the result.