

GOLD – Execution Guidelines

Binding processes

As GOLD is using PVM, it is required to use correct cpu affinity for each PVM process, performance can be suboptimal due to cpu oversubscription and communication between processes.

The scripts below utilize the numabind tool, which finds available CPUs and pins gold processes to consecutive cores.

Running GOLD

The following is a sample run script. User has to fix paths to GOLD, PVM and license.

```
export GOLD_DIR=<PATH to Gold installation>
export LM_LICENSE_FILE=<port>@<hostname>
export PVM_ROOT=<PATH to PVM installation>
export PATH=$GOLD_DIR/bin:$PVM_ROOT/lib:/opt/ScaleMP/numabind/bin:$PATH

echo "name=gold pattern=parallel_gold verbose=1 process_allocation=cpu \
      task_affinity=cpu rule=RULE-procgroup.so flags=ignore_idle" > myconfig

rm -rf /tmp/pvm*

NP=8

echo "Check if #NP CPUs are available"

CNUM=`numabind --offset=$NP`

if [ "$CNUM" = "_" ]; then
    echo "Not enough free CPUs"
    exit 1
fi

taskset -c $CNUM-=$((CNUM+NP-1)) pvm &

cd $GOLD_DIR

echo `hostname` $NP > benchmark/gold.hosts

cd $GOLD_DIR/benchmark

time $GOLD_DIR/bin/parallel_gold_auto $NP "gold conf" gold.hosts >& log-$NP-`date +%s`.out &

sleep 30
numabind --config myconfig
```