Package ‘doParallel’

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Type Package
Title Foreach Parallel Adaptor for the 'parallel' Package
Version 1.0.11
Description Provides a parallel backend for the %dopar% function using the parallel package.
Depends R (>= 2.14.0), foreach(>= 1.2.0), iterators(>= 1.0.0), parallel, utils
Suggests caret, mlbench, rpart
Enhances compiler, RUnit
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R topics documented:

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The doParallel package provides a parallel backend for the foreach/\%dopar\% function using the parallel package of R 2.14.0 and later.

Details

Further information is available in the following help topics:

registerDoParallel register doParallel to be used by foreach/\%dopar\%

registerDoParallel

Description

The registerDoParallel function is used to register the parallel backend with the foreach package.

Usage

registerDoParallel(cl, cores=NULL, ...) stopImplicitCluster()

Arguments

cl A cluster object as returned by makeCluster, or the number of nodes to be created in the cluster. If not specified, on Windows a three worker cluster is created and used.
The number of cores to use for parallel execution. If not specified, the number of cores is set to the value of \texttt{options("cores")}, if specified, or to one-half the number of cores detected by the \texttt{parallel} package.

Package options. Currently, only the \texttt{nocompile} option is supported. If \texttt{nocompile} is set to \texttt{TRUE}, compiler support is disabled.

Details

The \texttt{parallel} package from R 2.14.0 and later provides functions for parallel execution of R code on machines with multiple cores or processors or multiple computers. It is essentially a blend of the \texttt{snow} and \texttt{multicore} packages. By default, the \texttt{doParallel} package uses \texttt{snow}-like functionality. The \texttt{snow}-like functionality should work fine on Unix-like systems, but the \texttt{multicore}-like functionality is limited to a single sequential worker on Windows systems. On workstations with multiple cores running Unix-like operating systems, the system \texttt{fork} call is used to spawn copies of the current process.

The \texttt{doParallel} backend supports both multicore and \texttt{snow} options passed through the \texttt{foreach} function. The supported multicore options are \texttt{preschedule}, \texttt{set.seed}, \texttt{silent}, and \texttt{cores}, which are analogous to the similarly named arguments to \texttt{mclapply}, and are passed using the \texttt{.options.multicore} argument to \texttt{foreach}. The supported \texttt{snow} options are \texttt{preschedule}, which like its multicore analog can be used to chunk the tasks so that each worker gets a prescheduled chunk of tasks, and \texttt{attachExportEnv}, which can be used to attach the export environment in certain cases where R’s lexical scoping is unable to find a needed export. The \texttt{snow} options are passed to \texttt{foreach} using the \texttt{.options.snow} argument.

The function \texttt{stopImplicitCluster} can be used in vignettes and other places where it is important to explicitly close the implicitly created cluster.

Examples

```r
cl <- makePSOCKcluster(2)
registerDoParallel(cl)
m <- matrix(rnorm(9), 3, 3)
foreach(i=1:nrow(m), .combine=rbind)
stopCluster(cl)
```
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