

NAME

MultiSRVN – solve stochastic rendezvous network experiments.

SYNOPSIS

MultiSRVN [**-cdllNnrstv**] [**-e** *ename*] [**-f** *filesep*] [**-F** *format*] [**-o** *rfile*] [**-O** *options*] [**-R** *retry-opts*] [**-S** *solver*] [*efile* ...]

DESCRIPTION

MultiSRVN is invoked from the UNIX command line with such arguments and options as needed for the desired operation. Input and output is handled by **MultiSRVN** through files.

An *SRVN description* file is created by the operator to contain the description of the software system under study. An *experiment description* file, containing the specification of the independent and dependent variables as well as some other data is also created by the operator.

MultiSRVN reads the experiment description and the SRVN description and generates several *case descriptions*. *Srvn* is invoked by **MultiSRVN** to process these cases, generating the *case solutions*. Finally, **MultiSRVN** reads the case solutions and prepares its report which is then put into the *result report* file.

The case files, both descriptions and solutions, are stored in a UNIX subdirectory. If more than one experiment description is given in the experiment description file, then a subdirectory is created for each experiment to store that experiment's case files.

MultiSRVN reads its experiment descriptions from the file *efile*. This file contains the experiments as defined by the experiment file syntax described in the *User's Guide*. If no filename is specified, the input is read from *standard input*. The output is written to a file whose name is derived from *filename* by appending a suffix of ".res". Other suffixes are possible depending on the format of the output selected by the operator. More information about this is given in the option descriptions below.

OPTIONS

There are several options available for **MultiSRVN**. The following are descriptions explaining the purpose and usage of each option.

- c** Clean out the experiment directories of any experiments to be executed, provided such experiment directories already exist, prior to generating the case files. This option is mutually exclusive with the **-r** option.
- d** Display debugging information. This option is similar to the **-v** option except that more information is displayed. Normally, this option should not be used.
- r** Examine results from previous computation. Do not recompute the cases, merely create a result file based on the results generated before. This option is mutually exclusive with the **-c** option.
- s** Split the results into multiple files. This option causes an output file to be created for each experiment regardless of the configuration of the input file(s). Each output file is named by appending a suffix to the experiment name of the experiment. The suffix used depends on the format of the output as described below.
- v** This options turns on verbose mode. While this mode is active, status information is written to the **standard output** device. This information includes the current experiment filename, experiment name and other such data.
- e** *ename* This option allows specific experiments to be selected from the experiment file to be executed. The experiment named *ename* is selected. Any number of **-e** options may be used. The default is that all experiment descriptions in the experiment file are processed.
- F** *format* This option is used to select the format for the result output. The option takes an argument, *format* which is one of the following: *standard*, *matlab*, *gnuplot* or *latex*. **MultiSRVN** only looks at the first letter of the argument and will accept either upper case or lower case letters.
 - standard** This argument produces an output file having the suffix **.res**. The results are provided in the form of tables of numbers. This is the default output format and is

- automatically selected when the **-F** option is omitted.
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| matlab | This format produces a file having the suffix .m . The file contains scripts which when executed from within the <i>MatLab</i> program, provides an interactive graphical "back end". |
| gnuplot | This format produces a file having the suffix .gnu . The results are provided in columns representing the independent and dependent variables. This version of <i>MultiSRVN</i> restricts the usage of <i>gnuplot</i> to the following. Only one experiment may handled per output file, and only experiments with two independent variables are accepted. Further, only the first dependent variable is monitored. |
| latex | This format produces a file with the suffix .tex . The file contains <i>LaTeX</i> formatted tables suitable for inclusion in <i>LaTeX</i> documents. |
- o rfile** The filename *rfile* is used as the file in which all the results are written. If the filename is given as "-" as in "**-o-**", **then the standard output** device is used for writing results.
- O options** Pass an option string to the SRVN solver utility. The argument, *options*, is passed to the solver program as a string of options. If white space is required in the option string for the solver, then quotation marks must be used around the string.
- S solver** This option permits the operator to select a "solver". The option takes an argument which is one of the following: *srvn*, *tda* or *parasrvn*. **MultiSRVN** looks at only the first letter of the argument and considers upper and lower case letters to be the same.
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| srvn | When this argument is used, the standard version of the solver is used to solve each of the cases. |
| tda | This argument causes the newer "task directed aggregation" algorithm to be used. |
| parasrvn | This argument selects the parasol <i>srvn</i> simulator to solve the cases. The simulator requires more time than the other <i>srvn</i> solvers and may cause MultiSRVN to take a long time to finish. Use this argument with caution. |

BUGS

The matlab script generated when the matlab format is selected should produce encapsulated postscript files containing the plot information for each plot performed. When the plot output is selected however, each graph selected is placed into the eps file *twice*. To make the plots properly, enter the script commands from the matlab format output by hand.

.SH "SEE ALSO" "*User's Guide for MultiSRVN Version 1.0*"

"*The Stochastic Rendezvous Network Model for Performance of Synchronous Multi-tasking Distributed Software*" by C.M. Woodside et.al.

"*SRVN Input File Format*" by Dorina Petriu.

"*User's Guide for TimeBench VI.9*" by the Real-Time and Distributed Systems Group Carleton University.

srvn(1), *TimeBench*, *matlab*, *latex*