



VerificationWorks™ Build & Run

Application Note

Revision 1.1

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1 Overview

The VerificationWorks™ Build & Run Software is a standardized front end to a Makefile driven simulation. If enabled, it also has the capability to provide job control to LSF or the Sun Grid distributed computing tool.

2 Usage

Build & Run is invoked on the command as per below and supports a diverse number of options to enable development teams to control their simulations in a flexible yet consistent manner. The options listed are explained further in the next section.

```
bnr <options>
    -a[bort]          <timeout>
    -b[at]ch
    -cl[ean]
    -con[fig] | -mo[de]    <string>
    -cov[erage]
    -ct[_args]        <string>
    -d[irectory]     <path>
    -f[ile]          <filename>
    -e[mail]
    -i[nteractive]
    -lan[guage]      <verilog | vhdl>
    -log[_file]     <filename>
    -msg[_level]    <string>
    -mt              <string>
    -pe[rformance] <options>
    -q[uiet]
    -reg[ression] | -pr[ofile] <filename>
    -rrt
    -rt[_args]      <string>
    -se[ed]         <integer>
    -sim[ulator]    <string>
    -t[est]         <test_name>
    -wai[t]
    -wav[es]
    -v[erbose]
    -h[elp]
```

3 Options

The below list contains an explanation of the Build & Run options referenced above:

-a[abort]	This is provided as a mechanism for passing a timeout value to the tests.
-b[atch]	Run the simulation in batch mode.
-c[lean]	Clean-up the simulation area and start from compilations from scratch.
-con[fig]	An input string that specifies a configuration to use when compiling the test environment. This is synonymous with the <code>-mode</code> option.
-cov[erage]	Turn on/off coverage support. The default is determined by the Build & Run Makefile. Options are determined by the coverage tool in use. Specman: [off on on_interactive]
-ct[_args]	Compile time arguments to be passed to the simulator. Multiple arguments can be specified by placing the arguments between quotes, or by calling out multiple <code>-ct_args</code> switches.
-d[irectory]	The path location of where to run the simulations out of.
-e[mail]	Email the user when the job is complete. This option implies the <code>-wait</code> option. Therefore, if <code>-email</code> is specified then the <code>-wait</code> functionality is automatically enabled.
-f[file]	Specify a different Makefile name. The default is the Makefile in the location from where Build & Run is executed from.
-h[elp]	Print help
-i[nteractive]	Run the simulator in interactive mode
-lan[guage]	The simulator language to use for testing, verilog or vhdl. The default is based on the implementation of the Build & Run Makefile. Multiple languages can be specified by using the switch multiple times.
-log[_file]	The log file to output to. The default <code>bnr_out.log</code> will be placed in the location from where Build & Run is called from. Four backups are stored before the old log file is removed. If you want to keep a particular log file be sure to move it to a unique name.
-mo[de]	See <code>-config</code> .
-msg[_level]	Specify the verbosity of the output to stdout. This value will be simulator/project specific.
-mt	Make Target. This represents a target to pass to the Makefile to run. Multiple targets can be specified by either encapsulation in double quotes or by specifying multiple <code>-mt</code> options.
-o[ptions]	Options to pass to the gmake executable.
-pe[rformance]	Run simulation performance/profiling tools. In order to enable this with the default options, specify in conjunction with this switch the string "on". To pass options to the profiling command replace the "on" string with the appropriate option string. For example, if using the Specman profiling tool with its defaults then issue the following: <code>-performance "on"</code> Or, to specify the memory profiler instead, issue: <code>-performance "-mem"</code>

-p[rofile]	Specify a filename of the profile to use. This is synonymous with the -regression option.
-q[uiet]	Turn off printing to STDOUT. The log file is still generated.
-reg[ression]	Specify a regression file to use. This is synonymous with the -profile option.
-rrt	Perform post processing of the tests using RRT. To work properly the environment variable PW_BNR_RRT must be set to the proper RRT configuration file to use. This option implies the -wait option. Therefore, if -rrt is specified then the -wait functionality is automatically enabled.
-rt[_args]	Run time arguments to be passed to the simulator. Multiple arguments can be specified by placing the arguments between quotes, or by calling out multiple -rt_args switches.
-se[ed]	The seed value to use for the test.
-sim[ulator]	The simulator to use. Multiple simulators can be defined with multiple -sim options. If no simulator is specified then the first available one is used. Possible simulators are: <ul style="list-style-type: none">• Vcs VCS• vsim Modelsim• ncv NC-Verilog• vxl Verilog-XL
-t[est]	Name of the test to run.
-v[erbose]	Turn verbose printing on
-wai[t]	Wait till all the simulation jobs have completed before exiting. This is provided to meet GVP requirements for regression runs. In order for this flag to work the environment variable PW_BNR_DCRT must be set to a supported Distributed Computing Resource Tool. The currently supported values are: <ul style="list-style-type: none">• Sge Sun Grid Engine• Lsf LSF
-wav[es]	Turn on waveform dumping

4 Company Background

Paradigm Works is a leading chip design and verification services company. The company is recognized for engineering excellence, integrity in business, and overall productivity and cost effectiveness.

We provide expert consultants and contractors both on site and offshore to assist in complex chip developments. We offer world class domain expertise (PCI Express, USB, Ethernet), application knowledge (Networking, Computing, Storage, Wireless), and leverage Paradigm Works suite of productivity accelerator software (VerificationWorks™, ReleaseWorks®, and SystemVerilog FrameWorks™) to help clients bring their innovations to market as quickly as possible.

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