NAME

xtl – evaluation of value-based temporal logic formulas

SYNOPSIS

xtl [**-cc** *options*] [**-create**] [**-depend**] [**-english**] [**-expand**] [**-french**] [**-remove**] [**-silent**] [**-source** *file:line*] [**-tmp** *directory*] [**-update**] [**-verbose**] [**-version**] [**-warning**] *file1*[**.xtl**] *file2*[**.bcg**]

DESCRIPTION

xtl takes as input *file1*[**.xtl**], which is a program written in XTL (eXecutable Temporal Language), and evaluates it on *file2*[**.bcg**], which contains an LTS (Labelled Transition System) encoded in the BCG (Binary Coded Graph) format.

The XTL tool offers the following features:

- XTL supports several temporal logics widely used. Currently, the following temporal logics are supported: HML, CTL, ACTL, LTAC, as well as the modal mu-calculus. All of them can be directly used by end-users to verify properties on BCG graphs.

- Compared to other model-checkers, XTL is more expressive, because it allows to handle the data values contained in states and transition labels. These values can be used in temporal formulas, assigned to variables, etc.

- Moreover, XTL is extensible. A user can define his/her own temporal logic, as a library of operators written in XTL. This is the way in which the currently available formalisms (HML, CTL, ACTL, LTAC and modal mu-calculus) are implemented.

A detailed description of the XTL language is available in the **xtl-lang**(LOCAL) manual page.

OPTIONS

-cc *options*

Pass *options* to the C compiler when it is invoked. *options* is a list of compiler options (enclosed in quotes or double quotes). These options are appended to the compiler options, if any, contained in the **$CADP_CC** environment variable (see ENVIRONMENT VARIABLES below). Not a default option.

-create

Force the dynamic library of file *file2*[**.bcg**] to be created, even if it already exists in the current directory and if it is up-to-date. Not a default option.

-depend

Display the list of library files included (directly or transitively) in the file *file1*[**.xtl**] and stop. This list may be incomplete if the XTL program is syntactically incorrect. If present, this option has precedence over all the other options. Not a default option.

-english

Print messages in English. Opposite of **-french**. This option overrides the **$CADP_LANGUAGE** environment variable (see ENVIRONMENT VARIABLES below).

-expand

Expand the macro definitions and the XTL source files included as libraries in the file *file1*[**.xtl**], producing as output a file *file1***.xp**, and stop. This option may be useful for debugging purposes. Not a default option.

-french Print messages in French. Opposite of **-english**. This option overrides the **$CADP_LANGUAGE** environment variable (see ENVIRONMENT VARIABLES below).

-remove
Remove the dynamic library of file *file2*[**.bcg**] after usage. Not a default option.

-silent
Execute silently. Opposite of **-verbose**. Default option is **-verbose**.

-source *file:line*
Change the file name and line number displayed in error messages as if the XTL program was contained in file *file* starting at line *line* (instead of starting at line 1 in file *file1*[**.xtl**]). This option has effect only on the messages triggered by the errors occurring in the top-level file *file1*[**.xtl**]. The messages triggered by the errors occurring in the included libraries (if any) are left unchanged.

-tmp *directory*
Use *directory* to store the temporary files. This option overrides the environment variable **$CADP_TMP** (see ENVIRONMENT VARIABLES below). Not a default option.

-update
Do not create the dynamic library of file *file2*[**.bcg**] if it already exists in the current directory and if it is up-to-date. Default option.

-verbose
Animate the user's screen, telling what is going on. Opposite of **-silent**. Default option.

-version
Display the current version number of the XTL tool and stop. To be effective, this option should occur as the first argument on the command line. Subsequent options and/or arguments, if any, will be discarded.

-warning
Print extra warning messages. Not a default option.

ENVIRONMENT VARIABLES

The following environment variables are used:

$CADP, $CADP_LANGUAGE, $CADP_CC, $CADP_TMP
The meaning of these variables is defined in the **$CADP/INSTALLATION_2** file.

$XTL
If this variable is set, its value should reference the directory in which the XTL package in installed. By default, this variable is supposed to be unset: the XTL package is normally installed in the directory referenced by the environment variable **$CADP**. Setting the **$XTL** variable should

be avoided in official distributions of the XTL package, since it may cause problems.

EXIT STATUS

Exit status is 0 if everything is alright, 1 otherwise.

DIAGNOSTICS

When the source XTL file *file1*[**.xtl**] is erroneous, error messages are issued.

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OPERANDS

filename.**xtl**	XTL source program (input)
filename.**bcg**	LTS in BCG format (input)
filename.**xp**	XTL expanded program (output)

FILES

filename.**o**	object file (temporary)
filename@**1.o**	dynamic BCG library (auxiliary)
$CADP/LICENSE	license file
$CADP/src/com/cadp_cc	C compiler shell
$CADP/src/xtl/*.xtl	predefined XTL library (input)
$CADP_TMP/xtl_*.c	intermediate C code (temporary)
$CADP_TMP/xtl_*.x	binary code (temporary)

SEE ALSO

bcg(LOCAL), **bcg_io**(LOCAL), **xtl**(LOCAL).

Additional information is available from the CADP Web page located at http://cadp.inria.fr

Directives for installation are given in files **$CADP/INSTALLATION_***.

Recent changes and improvements to this software are reported and commented in file **$CADP/HISTORY**.

BUGS

Please report bugs to Radu.Mateescu@inria.fr