

# Theme-D-Gnome User Guide

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## 1 Copyright

Copyright (C) 2015-2020 Tommi Höynälänmaa

Contents of subdirectories **theme-d-gen** and **gnome-examples** are licensed under GNU General Public License. See file **doc/GPL-3**. The contents of subdirectories **gnome** and **theme-d-gnome/runtime** are licensed under GNU Lesser General Public License. See file **doc/LGPL-3**. All documentation (subdirectory **doc**) is licensed under the GNU Free Documentation License. See file **doc/GFDL-1.3**.

## 2 General

This guide covers only UNIX systems. Many commands in this guide have to be executed in a root session. A root session is launched with command **su root** or **sudo** depending on your system. In Ubuntu the command is **sudo**. Symbol *rev* in the package names means the Debian revision of the packages. It is typically 1.

## 3 Software needed

You need at least the following software to use Theme-D-Gnome:

- guile version 2.2
- guile-gnome-2 version 2.16.2, 2.16.4, or 2.16.5
- GNU make
- Theme-D

The proper Theme-D version depends on the version of Theme-D-Gnome you use. Theme-D-Gnome version 0.9.5-1 requires Theme-D version 3.1.0-1. When a new Theme-D version is released a new Theme-D-Gnome version is released, too.

TH Scheme Utilities and Theme-D can be obtained from

<http://www.iki.fi/tohoyn/theme-d/>.

Guile can be obtained from

<http://www.gnu.org/software/guile/>.

guile-gnome-2 can be obtained from

<http://www.gnu.org/software/guile-gnome/>.

If you use Debian or Ubuntu Linux it is recommended that you install guile 2.2 with commands

```
apt-get install guile-2.2
apt-get install guile-2.2-dev
```

and guile-gnome-2 with commands

```
apt-get install guile-gnome2-dev
apt-get install guile-gnome2-glib
apt-get install guile-gnome2-gtk
```

All of these commands have to be executed in a root session. Note that Theme-D-Gnome may not work for guile-gnome-2 versions other than 2.16.2, 2.16.4, or 2.16.5. If you use such versions follow the instructions in section 9 to regenerate the wrapper libraries.

## 4 Installation

You can check the version number of your guile-gnome-2 library with command

```
pkg-config --modversion guile-gnome-gtk-2
```

### 4.1 Debian-based systems

In particular these instructions apply to Debian and Ubuntu Linux distributions.

### 4.2 Debian bullseye and sid and Ubuntu focal

Install the software with commands

```
dpkg -i theme-d-gnome_0.9.5-rev_all.deb
dpkg -i theme-d-gnome-dev_0.9.5-rev_all.deb
```

in a root session.

### 4.3 Debian buster and Ubuntu disco and eoan

In case you have installed Theme-D with command `apt-get install` install the software with command

```
apt-get install theme-d-gnome theme-d-gnome-dev
```

in a root session. If you have got Theme-D version 1.4.1 follow the instructions in the next subsection.

#### 4.3.1 Guile version 2.2 and library guile-gnome-2 version 2.16.5

Install the software with commands

```
dpkg -i theme-d-gnome_0.9.5-rev_all.deb
dpkg -i theme-d-gnome-dev_0.9.5-rev_all.deb
```

in a root session.

#### 4.3.2 Other Configurations

1. Create a new directory for building Theme-D-Gnome and change into that directory. This directory shall be called the *build directory*.
2. Copy files `theme-d-gnome-0.9.5.tar.xz` and `theme-d-gnome_0.9.5-rev.debian.tar.xz` into the build directory.
3. Give command

```
ln -s theme-d-gnome-0.9.5.tar.xz theme-d-gnome_0.9.5.orig.tar.xz
```

4. Unpack the source code with command

```
tar xvf theme-d-gnome-0.9.5.tar.xz
```

5. Give commands

```
cd theme-d-gnome-0.9.5
tar xvf ../theme-d-gnome_0.9.5-rev.debian.tar.xz
```

6. If you use guile-gnome-2 version 2.16.2 or 2.16.4 change the value of variable `GUILE_GNOME_VERSION` in file `debian/rules` (line 5).
7. Build the Debian package with command

```
dpkg-buildpackage -uc -us
```

in subdirectory `theme-d-gnome-0.9.5`.

8. Change to the parent directory and install the generated Debian package with command

```
dpkg -i theme-d-gnome_0.9.5-rev_all.deb
```

The command has to be run as root.

#### 4.4 Other systems

1. Unpack the source package `theme-d-gnome-0.9.5.tar.xz` into some directory.

2. Change to the subdirectory `theme-d-gnome-0.9.5` and give command

```
./configure
```

In case you have guile-gnome-2 version 2.16.2 use command

```
./configure --with-guile-gnome=2.16.2
```

instead. In case you have guile-gnome-2 version 2.16.4 use command

```
./configure --with-guile-gnome=2.16.4
```

3. Give command

```
make
```

4. Install Theme-D-Gnome with command

```
make install-complete
```

in a root session.

## 4.5 Using the Software without Installation

It is possible to use Theme-D-Gnome without installing it. This is called *local mode*. In order to do this unpack the source code package `theme-d-gnome-0.9.5.tar.xz` into some directory and execute commands

```
./configure  
make
```

in subdirectory `theme-d-gnome-0.9.5`. Now you can use the software by changing to subdirectory `meta` and giving command

```
./uninstalled-env bash
```

## 5 Removing the software

### 5.1 Debian-based systems

If you have installed the software with command `apt-get` give command

```
apt-get remove theme-d-gnome theme-d-gnome-dev
```

in a root session. If you have installed the software with command `dpkg` give command

```
dpkg --purge theme-d-gnome theme-d-gnome-dev
```

in a root session.

## 5.2 Other systems

Give command

```
make uninstall-complete
```

in subdirectory `theme-d-gnome-0.9.5` of the directory where you unpacked Theme-D-Gnome. The command has to be run in a root session.

## 6 Running the example programs

Copy the example programs and makefiles (`user.mk`) into the directory where you want to build them. The examples programs can be found in directory `/usr/share/doc/theme-d-gnome/examples` or in subdirectory `gnome-examples` in the Theme-D-Gnome source package. Note that the example programs must be contained in subdirectory `gnome-examples` in the target directory. Give command `make -f user.mk XXX.go` where `XXX` is the name of the program (`hello` or `calc`). In order to run an application give command `rtp-gnome XXX.go`. You can also compile both the examples by command `make -f user.mk` in subdirectory `gnome-examples`. In order to run the Theme-D-Gnome demo build the program with command `make -f user.mk` and run it with command

```
rtp-gnome run-demo.go
```

in subdirectory `gnome-examples/theme-d-gnome-demo`.

## 7 Making programs that use Theme-D-Gnome

When you make your own programs using Theme-D-Gnome you can compile the programs in the same way as other Theme-D programs using command `theme-d-compile` but you have to link the programs with command `theme-d-gnome-link`. This ensures that the guile-gnome libraries are loaded by the target programs. When you run your own programs using Theme-D-Gnome you have to ensure that necessary GNOME modules are linked into guile. This can be done by executing guile with command `guile-gnome-2`. Easiest way to fulfill these requirements is to use command

```
rtp-gnome MYPROGRAM.go
```

to run your programs. The program `rtp-gnome` accepts the same options `--no-verbose-errors`, `--backtrace`, and `--pretty-backtrace` as program `run-theme-d-program`, see the Theme-D User Guide.

## 8 Distributing programs that use Theme-D-Gnome

If you distribute your Theme-D-Gnome program to a Debian system it is easiest to install the following packages in the target system:

- `theme-d-rte`
- `libthemedsupport`
- `th-scheme-utilities`
- `theme-d-gnome`

Note that you don't need package `theme-d-gnome-dev` if you just want to run a program using Theme-D-Gnome.

In case you distribute a Theme-D-Gnome program into a non-Debian system see section 11 in the Theme-D User Guide for further information. You also need to install file `theme-d-code/runtime/gnome-support.scm` into the subdirectory `theme-d-code/runtime` of the Guile site directory. You can find out this directory with command

```
pkg-config --variable=sitedir guile-guile-version
```

You need to install file `theme-d-code/runtime/rtp-gnome.scm` into the target system in whatever directory where you want to invoke it, too.

## 9 Regenerating the Theme-D-Gnome wrapper modules

1. Change to the directory where you have unpacked the Theme-D-Gnome package.
2. Change to the subdirectory `theme-d-gen` and run command `make`.
3. Change to the subdirectory `gnome/wrap` and give command `./generate.sh`.
4. Change to the subdirectory `gnome` and run command `make`.

## 10 Documentation

Install the source code of `guile-gnome-2` and build it. GTK Scheme documentation is found in file `gtk/doc/gtk/guile-gnome-gtk.info`. Programming with Theme-D-Gnome resembles closely programming with `guile-gnome-2` and Scheme. See also <http://www.gtk.org/> for the documentation of the GTK C library.



## 11 Features different in Theme-D-Gnome and guile-gnome-2

### 11.1 Making instances of classes

In Theme-D-Gnome instances of classes are created by creator procedures. Creator procedures are named `xxx-create` or `xxx-create-yyy` and they correspond to GTK constructor procedures `xxx-new` and `xxx-new-yyy`. The GTK style constructor procedures are supported by Theme-D-Gnome, too. The difference between creators and GTK style constructor procedures is that the result type of a creator is the class to be created. GTK constructor procedures often have result type `<gtk-widget>` for the subclasses of `<gtk-widget>`.

### 11.2 Different procedures

The following Theme-D-Gnome procedures take Theme-D procedures as callbacks:

- `gtype-instance-signal-connect`
- `connect`
- `gtype-instance-signal-emit`
- `emit`
- `gtk-action-group-add-actions`
- `add-actions`
- `gtk-action-group-add-toggle-actions`
- `add-toggle-actions`
- `gtk-action-group-add-radio-actions`
- `add-radio-actions`

As procedure purities are not specified by the guile-gnome-2 library we set the purity of all Theme-D-Gnome wrapper functions to `nonpure`.

#### 11.2.1 `gtk-text-buffer-create-tag`

*Syntax:*

```
(gtk-text-buffer-create-tag textbuffer str args...)
```

*Arguments:*

Name: `textbuffer`  
Type: `<gtk-text-buffer>`  
Description: A text buffer

Name: `str`

Type: `<string>`  
Description: The name of the new tag

Name: `args`  
Type: a list  
Description: The properties of the new tag

*Result value:* New tag  
*Result type:* `<gtk-text-tag>`

*Purity of the procedure:* nonpure

This procedure is a method of generic procedure `create-tag`.

### 11.2.2 `gtk-entry-new`

*Syntax:*

`(gtk-entry-new)`

No arguments.

*Result value:* New `<gtk-entry>` widget  
*Result type:* `<gtk-widget>`

*Purity of the procedure:* nonpure

### 11.2.3 `gtk-entry-create`

*Syntax:*

`(gtk-entry-create)`

No arguments.

*Result value:* New `<gtk-entry>` widget  
*Result type:* `<gtk-entry>`

*Purity of the procedure:* nonpure

### 11.2.4 `gtk-tree-or-list-store-set`

Could not find documentation for this procedure.

### 11.2.5 `gtk-tree-selection-get-selected`

*Syntax:*

```
(gtk-tree-selection-get-selected sel)
```

*Arguments:*

Name: **sel**  
Type: **<gtk-tree-selection>**  
Description: A tree selection

*Result value:* A pair of the tree model and tree iterator

*Result type:* **(:pair <object> <gtk-tree-iter>)**

*Purity of the procedure:* nonpure

This procedure is a method of generic procedure **get-selected**.

### 11.2.6 **gtk-dialog-create**

*Syntax:*

```
(gtk-dialog-create str-title modal?  destroy-with-parent?)
```

*Arguments:*

Name: **str-title**  
Type: **<string>**  
Description: The title of the dialog

Name: **modal?**  
Type: **<boolean>**  
Description: The modality of the dialog

Name: **destroy-with-parent?**  
Type: **<boolean>**  
Description: Destroy the dialog with its parent

*Result value:* A new dialog

*Result type:* **<gtk-dialog>**

*Purity of the procedure:* nonpure

### 11.2.7 **gtk-dialog-new**

*Syntax:*

```
(gtk-dialog-new str-title modal?  destroy-with-parent?)
```

*Arguments:*

Name: **str-title**  
Type: **<string>**  
Description: The title of the dialog

Name: **modal?**  
Type: **<boolean>**  
Description: The modality of the dialog

Name: **destroy-with-parent?**  
Type: **<boolean>**  
Description: Destroy the dialog with its parent

*Result value:* A new dialog

*Result type:* **<gtk-widget>**

*Purity of the procedure:* nonpure

#### 11.2.8 **gtk-frame-create-alt**

*Syntax:*

```
(gtk-frame-create-alt str-label s-shadow-type i-width-request i-height-request)
```

*Arguments:*

Name: **str-label**  
Type: **<string>**  
Description: The label of the frame

Name: **s-shadow-type**  
Type: **<symbol>**  
Description: The shadow type of the frame

Name: **i-width-request**  
Type: **<integer>**  
Description: The requested width of the frame

Name: **i-height-request**  
Type: **<integer>**  
Description: The requested height of the frame

*Result value:* A new frame

*Result type:* **<gtk-frame>**

*Purity of the procedure:* nonpure

The shadow type is one of the following symbols:

- none
- in
- out
- etched-in
- etched-out

### 11.2.9 gtk-frame-new-alt

*Syntax:*

```
(gtk-frame-new-alt str-label s-shadow-type i-width-request i-height-request)
```

*Arguments:*

Name: `str-label`  
 Type: `<string>`  
 Description: The label of the frame

Name: `s-shadow-type`  
 Type: `<symbol>`  
 Description: The shadow type of the frame

Name: `i-width-request`  
 Type: `<integer>`  
 Description: The requested width of the frame

Name: `i-height-request`  
 Type: `<integer>`  
 Description: The requested height of the frame

*Result value:* A new frame

*Result type:* `<gtk-widget>`

*Purity of the procedure:* nonpure

## 12 Widget classes that have been checked

- `<gtk-action-group>`
- `<gtk-box>`
- `<gtk-button>`
- `<gtk-button-box>`
- `<gtk-cell-renderer-toggle>`

- <gtk-cell-renderer-text>
- <gtk-check-button>
- <gtk-combo-box>
- <gtk-container>
- <gtk-dialog>
- <gtk-entry>
- <gtk-frame>
- <gtk-hbox>
- <gtk-hbutton-box>
- <gtk-hpaned>
- <gtk-image>
- <gtk-label>
- <gtk-list-store>
- <gtk-menubar>
- <gtk-message-dialog>
- <gtk-paned>
- <gtk-scrolled-window>
- <gtk-size-group>
- <gtk-statusbar>
- <gtk-table>
- <gtk-text-buffer>
- <gtk-text-iter>
- <gtk-text-view>
- <gtk-toolbar>
- <gtk-tree-selection>
- <gtk-tree-store>
- <gtk-tree-view>
- <gtk-tree-view-column>
- <gtk-ui-manager>
- <gtk-vbox>

- `<gtk-vbutton-box>`
- `<gtk-vpaned>`
- `<gtk-widget>`
- `<gtk-window>`