```
lehrig@nb4lehrig:~/temp>
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lehrig@nb4lehrig:~/temp>
lehrig@nb4lehrig:~/temp>
lehrig@nb4lehrig:~/temp> mkdir pvbdemo
lehrig@nb4lehrig:~/temp> cd pvbdemo
lehrig@nb4lehrig:~/temp/pvbdemo> pvdevelop
```

In order to create a new pvserver
we make a new directory
and start pvdevelop

11:31

Next

File   Edit   Action   RLlib   Daemon   Linux   Help

## Module

### File

- ○ Project    Line=0
- ○ Main
- ○ Header
- ○ Masks       Maskn
- ○ Slots        1 ⬍

### Slot Position

//####  ⌄

☐ su --command="./pvs"

Insert Function

When we are in pvdevelop
we select
File->new pvserver

Widget Names

Ready

lehrig@nb          no project

11:32     Back   Next

File  Edit  Action  RLlib  Daemon  Linux  Help

**Module**

File
Project     Line=1
Main
Header
Masks          Maskn
Slots           1

Slot Position
//####

su --command="./pvs"

Insert Function

Widget Names

We now simply click OK

**Create a new visualization**

Directory:   /home/lehrig/temp/pvbdemo

Name:        pvs

Use Python                    Cancel    Ok

lehrig    no pro    Creat    11:32    Back  Next

File  Edit  Action  RLlib  Daemon  Linux  Help

We are now within the graphical editor of pvdevelop
and can use the right mouse button to popup a menu

over background

lehrig@nb    design ma    11:32    Back  Next

File    Edit    Action    RLlib

## pvdevelop: InsertWidget

### Insert a Widget

- ( ) PushButton
- ( ) RadioButton
- ( ) CheckBox
- ( ) Label
- ( ) LineEdit
- ( ) ComboBox
- ( ) Table
- ( ) DateEdit
- ( ) TimeEdit
- ( ) DateTimeEdit
- ( ) TextBrowser
- ( ) ListView
- ( ) IconView
- ( ) ListBox

- ( ) TabWidget    North
- ( ) GroupBox: Title
- ( ) Frame: Shape/Shadow
- ( ) MultiLineEdit: editable
- ( ) SpinBox: Min/Max/Ste
- ( ) Slider: Min/Max/Step/
- ( ) LCDNumber: numDigit
- ( ) Dial: Min/Max/Step/Value    0    100    1    0
- ( ) ProgressBar: totalSteps    100
- ( ) Image: imageFileName
- ( ) Draw/SVG: svgFileName

- ( ) OpenGL
- ( ) VTK

- ( ) QwtPlot
- ( ) ToolBox

- ( ) QwtKnob
- ( ) QwtCounter
- ( ) QwtThermo

- ( ) QwtSlider
- ( ) QwtWheel
- ( ) QwtCompass

We select "insert widget"
and insert a PushButton

You can insert the selected Widget again by: CTRL-MouseClick

[ Cancel ]    [ OK ]

over background

11:32

Back    Next

File    Edit    Action    RLlib    Daemon    Linux    Help

PushButton

Now we can see the PushButton

over background

lehrig@nb    design ma    11:32    Back    Next

File   Edit   Action   RLlib   Daemon   Linux   Help
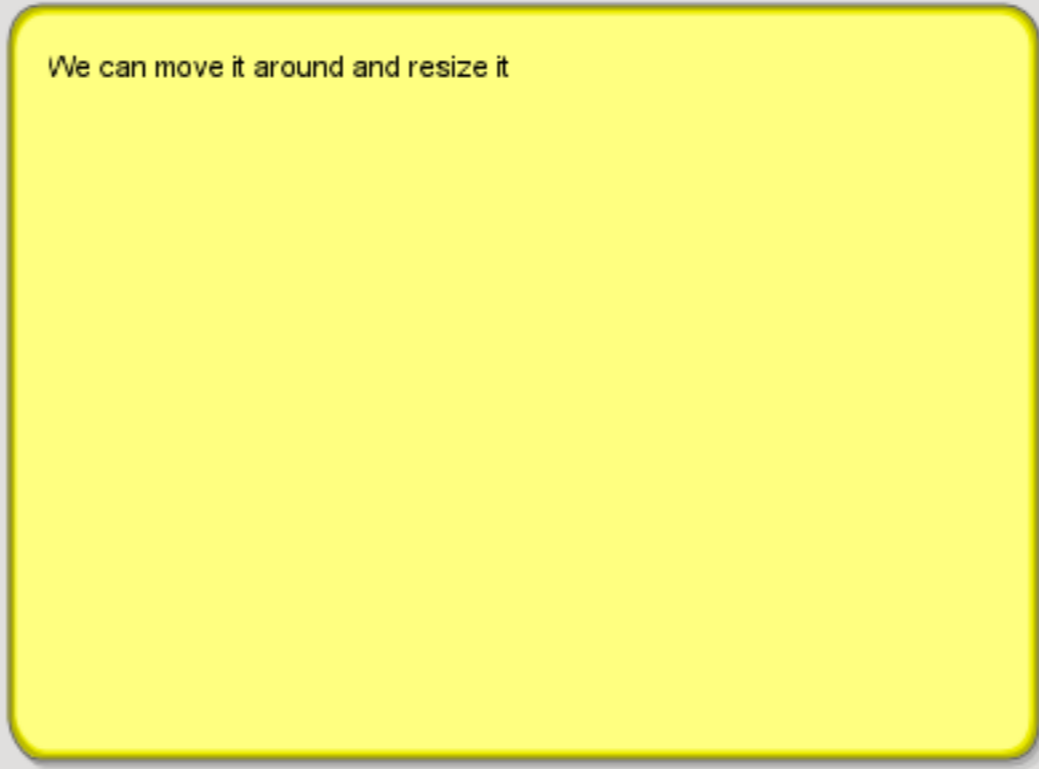
PushButton

We can move it around and resize it

TQPushButton: objectName="obj1" toolTip="" whatsThis=""

lehrig@nb    design ma    11:32    Back   Next

**design mask1 (click right button) - pvdevelop**

File  Edit  Action  RLlib  Daemon  Linux  Help

PushButton

**pvdevelop: Property Dialog**

ObjectName          obj1

Geometry

x,y          40      40

width,heigth   210     125

Foreground (r,g,b)   -1     -1     -1

Background (r,g,b)   -1     -1     -1          strikeout

ToolTip

WhatsThis

Text          PushButton

MinSize; Width/Height    0          0

MaxSize; Width/Height    99999      99999

Using a right mouse click on the PushButton
we get the properties dialog

TQPushButton: objectName="obj1" toolTip="" whatsThis=""

lehrig   design   pvdev   11:32   Back   Next

File   Edit   Action   RLlib   Daemon   Linux   Help

PushButton
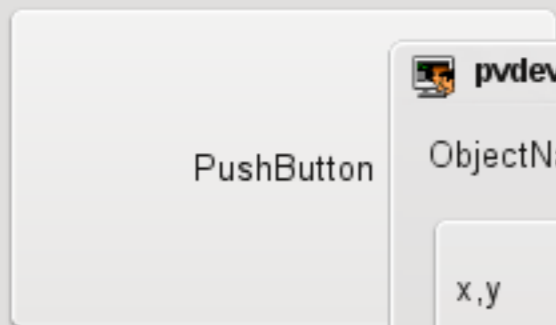
**pvdevelop: Property Dialog**

ObjectName     test_object

Font
default

Geometry
x,y        40        40

size        10

width,heigth    210    125

We modify the properties and click OK

Foreground (r,g,b)    -1    -1    -1

Background (r,g,b)    -1    -1    -1

ToolTip

WhatsThis

Text        Hello

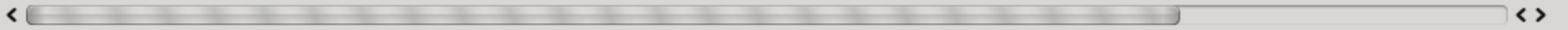MinSize; Width/Height    0        0

MaxSize; Width/Height    99999    99999

OK

TQPushButton: objectName="obj1" toolTip="" whatsThis=""

11:32

Back    Next

File   Edit   Action   RLlib   Daemon   Linux   Help

Hello

For the moment this is enough

lehrig@nb    design ma    11:33    Back    Next

# pvs.pro - pvdevelop

File    Edit    Action    RLlib    Daemon    Linux    Help

## Module

### File
- ( ) Project    Line=1
- ( ) Main
- ( ) Header
- ( ) Masks    Maskn
- ( ) Slots    1

### Slot Position
//###

[ ] su --command="./pvs"

Insert Function

Widget Names

```
##################################################################
# generated by pvdevel
##################################################################

TEMPLATE = app
CONFIG    = warn_on rel
CONFIG   -= qt


# Input
HEADERS += pvapp.h
          mask1_slots
SOURCES += main.cpp
          mask1.cpp


!macx {
unix:LIBS          += /usr/lib/libpvsmt.so  -pthread
#unix:LIBS          += /usr/lib/libpvsid.so
unix:INCLUDEPATH   += /opt/pvb/pvserver
#unix:LIBS          += /usr/lib/librllib.so
#unix:INCLUDEPATH   += /opt/pvb/rllib/lib
}


macx:LIBS          += /opt/pvb/pvserver/libpvsmt.a /usr/lib/libpthread.dylib
#macx:LIBS          += /opt/pvb/pvserver/libpvsid.a
macx:INCLUDEPATH   += /opt/pvb/pvserver
#macx:LIBS          += /usr/lib/librllib.dylib
#macx:INCLUDEPATH   += /opt/pvb/rllib/lib
```

When we switch back from designer to the editor
the whole framework for our pvserver will be generated

lehrig@nb    pvs.pro - p    11:33    Back    Next

# mask1_slots.h - pvdevelop

File  Edit  Action  RLlib  Daemon  Linux  Help

## Module

### File
- Project    Line=1
- Main
- Header
- Masks        Maskn
- Slots          1

### Slot Position
//###

☐ su --command="./pvs"

Insert Function

Widget Names

```
//###################
//# mask1_slots.h fo
//# please fill out
//# here you find al
//# Yours: Lehrig So
//###################

// todo: uncomment m
// also uncomment th
// also remember to
//extern rlModbusCli
//extern rlSiemensTC
//extern rlPPIClient        ppi;

typedef struct // (todo: define your data structure here)
{
}
DATA;

static int slotInit(PARAM *p, DATA *d)
{
  if(p == NULL || d == NULL) return -1;
  //memset(d,0,sizeof(DATA));
  return 0;
}

static int slotNullEvent(PARAM *p, DATA *d)
{
  if(p == NULL || d == NULL) return -1;
```

Now our task is to fill out the "slot" functions
The rest of the sourcecode was generated automatically.

11:32:12 2009

######
######

lehrig@nb        mask1_slo        11:33    Back  Next

File    Edit    Action    RLlib    Daemon    Linux    Help

Module

**Widget Names**

test_object

```c
DATA;

static int slotInit(PARAM *p, DATA *d)
{
  if(p == NULL || d == NULL) return -1;
  //memset(d,0,sizeof(DATA));
  return 0;
}


static int slotNullEvent(PARAM *p, DATA *d)
{
  if(p == NULL || d == NULL) return -1;
  return 0;
}


static int slotButtonEvent(PARAM *p, int id, DATA *d)
{
  if(p == NULL || id == 0 || d == NULL) return -1;
  return 0;
}

static int slotBu                              A *d)
{
  if(p == NULL ||
  return 0;
}


static int slotBu                              TA *d)
{
```

We want to handle a "ButtonEvent"
That is, when the user clicks our PushButton

11:33    Back    Next

File  Edit  Action  RLlib  Daemon  Linux  Help

Module

**Widget Names**

test_object

```c
DATA;

static int slotInit(PARAM *p, DATA *d)
{
  if(p == NULL || d == NULL) return -1;
  //memset(d,0,sizeof(DATA));
  return 0;
}


static int slotNullEvent(PARAM *p, DATA *d)
{
  if(p == NULL || d == NULL) return -1;
  return 0;
}


static int slotButtonEvent(PARAM *p, int id, DATA *d)
{
  if(p == NULL || id == 0 || d == NULL) return -1;
  if(id == test_object) pvPrintf(p,test_object,"World");
  return 0;
}


static int s                                    DATA *d)
{
  if(p == NU
  return 0;
}

static int s                                    DATA *d)
```

When the user clicks the PushButton
we say "World"

lehrig@nb    mask1_slo    11:33    Back  Next

```
g++ -c -m64 -pipe -O2 -fmessage-length=0 -O2 -Wall -D_FORTIFY_SOURCE=2 -fstack-p
rotector -funwind-tables -fasynchronous-unwind-tables -g -Wall -W -I/usr/share/
qt4/mkspecs/default -I. -I/opt/pvb/pvserver -o main.o main.cpp
g++ -c -m64 -pipe -O2 -fmessage-length=0 -O2 -Wall -D_FORTIFY_SOURCE=2 -fstack-p
rotector -funwind-tables -fasynchronous-unwind-tables -g -Wall -W -I/usr/share/
qt4/mkspecs/default -I. -I/opt/pvb/pvserver -o mask1.o mask1.cpp
g++ -m64 -o pvs main.o mask1.o     /usr/lib/libpvsmt.so -pthread
Info: going to accept on port 5050
```

After selecting Action->start server
the project is compiled and
the server is started within a terminal

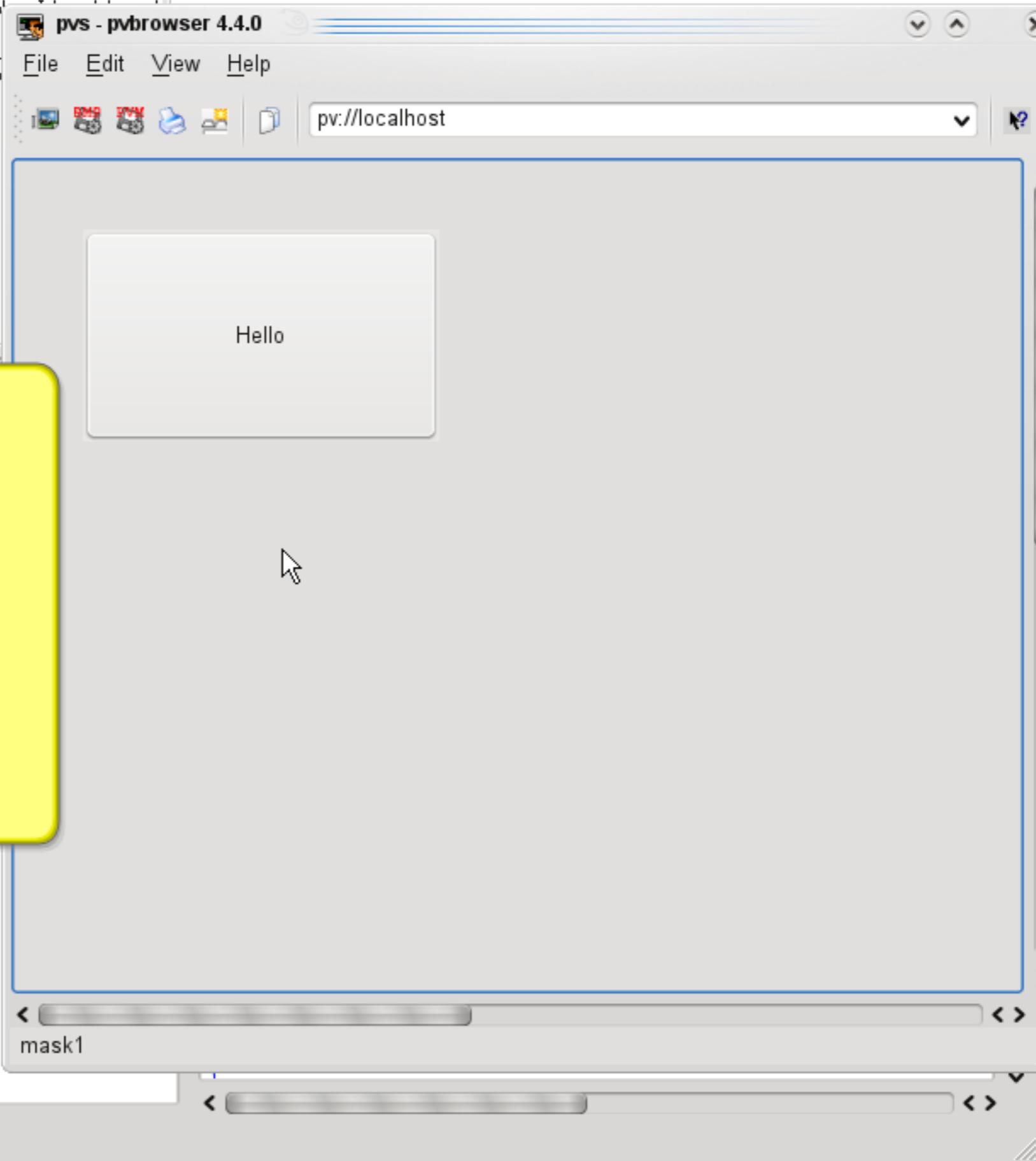It will be waiting on it's default port for a user to connect with pvbrowser

```cpp
                                    PA *d)

                              urn -1;




static int slotBu

{
  if(p == NULL ||
  if(id == test_object) pvPrintf(p,test_object,"World");
  return 0;
}


static int slotButtonPressedEvent(PARAM *p, int id, DATA *d)
{
  if(p == NULL || id == 0 || d == NULL) return -1;
  return 0;
}

static int slotButtonReleasedEvent(PARAM *p, int id, DATA *d)
```
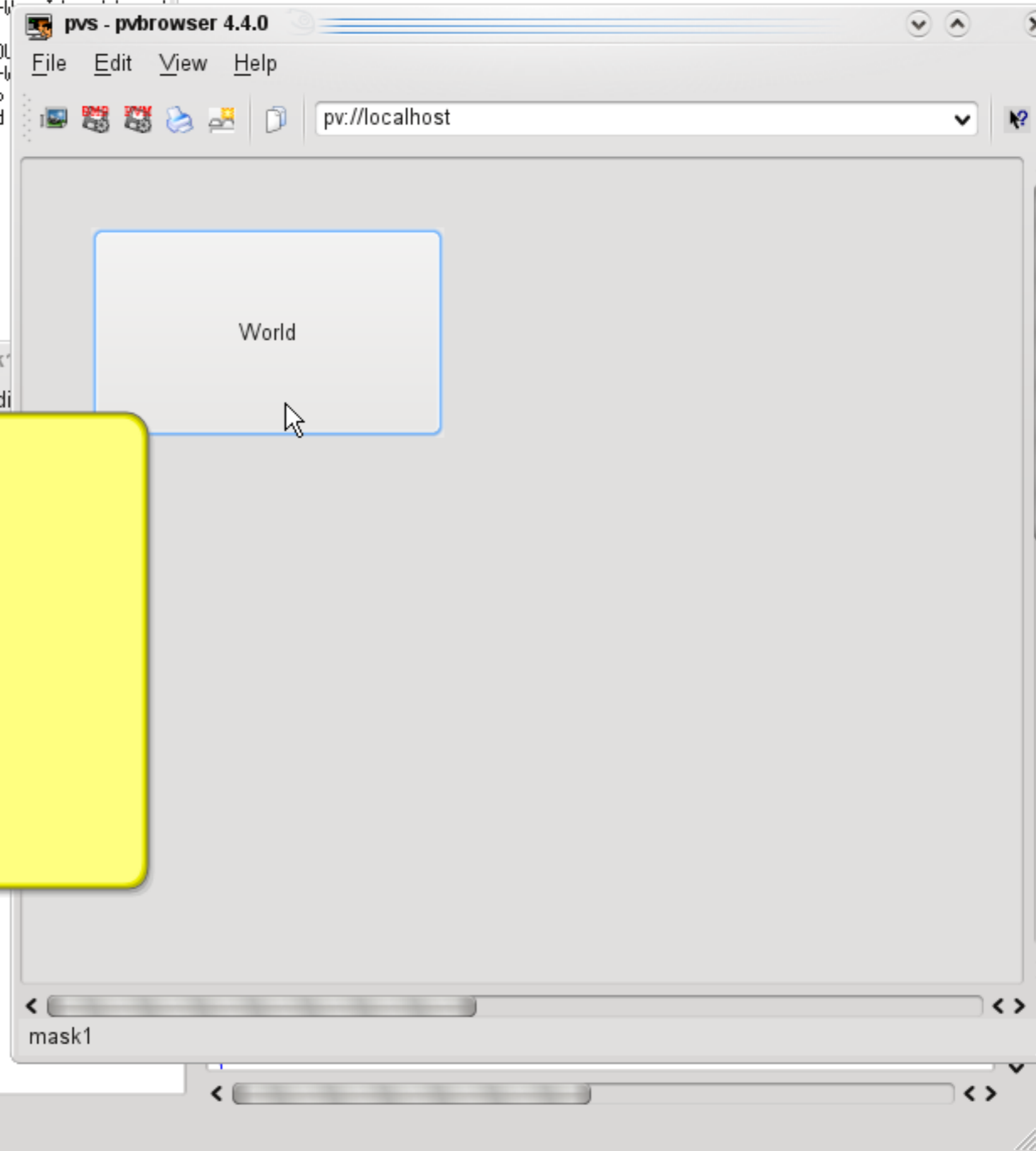
## pvs

```
g++ -c -m64 -pipe -O2 -fmessage-length=0 -O2 -Wall -D_FORTIFY_SOURCE=2 -fstack-p
rotector -funwind-tables -fasynchronous-unwind-tables -g -Wall -W
qt4/mkspecs/default -I. -I/opt/pvb/pvserver -o main.o main.cpp
g++ -c -m64 -pipe -O2 -fmessage-length=0 -O2 -Wall -D_FORTIFY_SOU
rotector -funwind-tables -fasynchronous-unwind-tables -g -Wall -W
qt4/mkspecs/default -I. -I/opt/pvb/pvserver -o mask1.o mask1.cpp
g++ -m64 -o pvs main.o mask1.o      /usr/lib/libpvsmt.so -pthread
Info: going to accept on port 5050
pvCreateThread s=5
version of pvbrowser client = 4.4.0
show_mask1
MOUSE_OVER_EVENT 1
MOUSE_OVER_EVENT 0
```

## pvs - pvbrowser 4.4.0

File   Edit   View   Help

pv://localhost

Hello

mask1

When the user connects
the PushButton shows "Hello"

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lehrig@nb4lehrig:~/temp>
lehrig@nb4lehrig:~/temp>
lehrig@nb4lehrig:~/temp> mkdir pvbdemo
lehrig@nb4lehrig:~/temp> cd pvbdemo
lehrig@nb4lehrig:~/temp/pvbdemo> pvdevelop
could not open pvs.pvproject
```

11:34   Back   Next

## pvs

```
g++ -c -m64 -pipe -O2 -fmessage-length=0 -O2 -Wall -D_FORTIFY_SOURCE=2 -fstack-p
rotector -funwind-tables -fasynchronous-unwind-tables -g -Wall -W
qt4/mkspecs/default -I. -I/opt/pvb/pvserver -o main.o main.cpp
g++ -c -m64 -pipe -O2 -fmessage-length=0 -O2 -Wall -D_FORTIFY_SOU
rotector -funwind-tables -fasynchronous-unwind-tables -g -Wall -W
qt4/mkspecs/default -I. -I/opt/pvb/pvserver -o mask1.o mask1.cpp
g++ -m64 -o pvs main.o mask1.o     /usr/lib/libpvsmt.so -pthread
Info: going to accept on port 5050
pvCreateThread s=5
version of pvbrowser client = 4.4.0
show_mask1
MOUSE_OVER_EVENT 1
MOUSE_OVER_EVENT 0
MOUSE_OVER_EVENT 1
BUTTON_PRESSED_EVENT id=1
BUTTON_RELEASED_EVENT id=1
BUTTON_EVENT id=1
```

## pvs - pvbrowser 4.4.0

File  Edit  View  Help

pv://localhost

World

### After clicking the PushButton we see "World"

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lehrig@nb4lehrig:~/temp> mkdir pvbdemo
lehrig@nb4lehrig:~/temp> cd pvbdemo
lehrig@nb4lehrig:~/temp/pvbdemo> pvdevelop
could not open pvs.pvproject
```

mask1

File  Edi

mask1

Back  Next

11:34

```
g++ -c -m64 -pipe -O2 -fmessage-length=0 -O2 -Wall -D_FORTIFY_SOURCE=2 -fstack-p
rotector -funwind-tables -fasynchronous-unwind-tables -g -Wall -W  -I/usr/share/
qt4/mkspecs/default -I. -I/opt/pvb/pvserver -o main.o main.cpp
g++ -c -m64 -pipe -O2 -fmessage-length=0 -O2 -Wall -D_FORTIFY_SOURCE=2 -fstack-p
rotector -funwind-tables -fasynchronous-unwind-tables -g -Wall -W  -I/usr/share/
qt4/mkspecs/default -I. -I/opt/pvb/pvserver -o mask1.o mask1.cpp
g++ -m64 -o pvs main.o mask1.o     /usr/lib/libpvsmt.so -pthread
Info: going to accept on port 5050
pvCreateThread s=5
version of pvbrowser client = 4.4.0
show_mask1
MOUSE_OVER_EVENT 1
MOUSE_OVER_EVENT 0
MOUSE_OVER_EVENT 1
BUTTON_PRESSED_EVENT id=1
BUTTON_RELEASED_EVENT id=1
BUTTON_EVENT id=1
MOUSE_OVER_EVENT 0
Thread finished: exit s=5
pvthread_exit
```

**pvs**

mask1_slots.h - pvdevelop

File   Edit   Action   RLlib   Daemon   Linux   Help

Module

mes

We now terminate our pvbrowser client.

Thanks for watching.

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lehrig@nb4lehrig:~/temp>
lehrig@nb4lehrig:~/temp> mkdir pvbdemo
lehrig@nb4lehrig:~/temp> cd pvbdemo
lehrig@nb4lehrig:~/temp/pvbdemo> pvdevelop
could not open pvs.pvproject
```

```cpp
DATA;

static int slotInit(PARAM *p, DATA *d)
{
  if(p == NULL || d == NULL) return -1;
  //memset(d,0,sizeof(DATA));
  return 0;
}


static int slotNullEvent(PARAM *p, DATA *d)
{
  if(p == NULL || d == NULL) return -1;
  return 0;
}


static int slotButtonEvent(PARAM *p, int id, D
{
```

lehrig     mask     pvs          11:34     Back