# How to get Alarms list in Qt Maemo application

## Overview

This example shows how to get list of System alarms in Qt Maemo application. There are no Qt classes for this operation - so using GTK functions.

## Project .pro file

```
// Maemo specific config
maemo5 {
LIBS += libalarm.so
}
```

## Packing in DEB - control file

```
// in source section add for Build-depends line
libalarm-dev
```

## Header

```
#include <time.h>
#include <alarmd/alarm_dbus.h>
#include <alarmd/libalarm.h>
```

## Source

```
// get the reference to QComboBox for filling
void SampleWidget::fillAlarmList(QComboBox* &aBox)
{
    // clear the list
    aBox->clear();

    cookie_t *list, *iter; // cookie_t - alarm cookies from GTK
    time_t now; // time_t structure from GTK

    // set number of hours to search alarms
    int timeFrame = 96;

    now = time(NULL);
    // get list of alarms
    list = alarmd_event_query(now, now + timeFrame*3600, ALARM_EVENT_DISABLED, 0, NULL);

    if (list[0] != (cookie_t) 0) {
        // iterate through alarm list
        for (iter = list; *iter != (cookie_t) 0; iter++)
        {
            // get alarm event by it's cookie
            alarm_event_t * aevent = alarmd_event_get (*iter);
            // check alarm recurrence
            int recur = alarm_event_is_recurring (aevent);
            // get time of alarm action
            time_t ttime = alarm_event_get_trigger(aevent);
            // convert GTK's ttime to Qt's DateTime
            QDateTime qdtm = QDateTime::fromTime_t(ttime);
            // get time part from DateTime variable
            QTime qtm = qdtm.time();
            // let's count day to current alarm triggering
            int days = 0;
            QDateTime currDate;
            if (timeFrame > 24) // if we need to look forward for more then one day
            {
                //  get current date from system
                currDate = QDateTime::currentDateTime();
                // calculate seconds from current time to alarm's trigger
                int secs = currDate.secsTo(qdtm);
                // get full days until alarm
                days = secs / (60 * 60 * 24);
            }
            // here we will form alarm's string
            QString sTime;
            // using locale settings to convert time into string
            sTime = qtm.toString(Qt::DefaultLocaleShortDate);
            if (days > 0) // calc for more than 1 day alarms
            {
                sTime += " (";
                sTime += QString::number(days) + tr("d");
                sTime += " ";
                // calc remaining time
                // get current time
                QTime currTime = QTime::currentTime();
                // calculate seconds remaining to alarm trigger
                int remain = currTime.secsTo(qtm);
                // we need some fix if get negative result
                if (remain < 0) remain += 86400;
                // calc remaining hours
                int h = remain/3600;
                // calc minutes
```


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```
                int m = (remain - h*3600)/60;
                // form hour + minutes into QTime to leter get formatted string
                QTime remTime(h,m);
                sTime += remTime.toString("H:mm");
                sTime += ")";
            }
            // get the title of alarm
            QString aTitle;
            // each alarm can have Message, Title and AppId
            // for the first check the Message
            const char * cTitle = alarm_event_get_message(aevent);
            aTitle = QString::fromUtf8(cTitle);
            if (aTitle.isEmpty())
            {
                // next, check the title if message is empty
                cTitle = alarm_event_get_title(aevent);
                aTitle = QString::fromUtf8(cTitle);
                if (aTitle.isEmpty())
                {
                    // if message and Title both are empty - use AppID as alarm's title
                    cTitle = alarm_event_get_alarm_appid(aevent);
                    aTitle = QString::fromUtf8(cTitle);
                }
            }
            sTime += ": " + aTitle;
            aBox->addItem(sTime);
            // free alarm event structure
            alarm_event_delete(aevent);
        }
    }
    free(list);
}
```

## Postconditions

`QComboBox` filled with list of alarms (and time remaining to that alarms)

--Avis 12:24, 30 November 2010 (UTC)


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