



# Qtopia Greenphone

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# What is the greenphone?



February 2007

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- 312 MHz Intel XScale processor (ARM)
- 64 MB ram
- 128 MB flash
- Mini-SD slot for expansion
- GSM/GPRS modem (tri-band)
- Bluetooth
- Camera (1.3 megapixel)
- QVGA (320x240) LCD touch screen
- Mini USB-port
- Price: \$695  $\approx$  4000 kr. (+taxes)

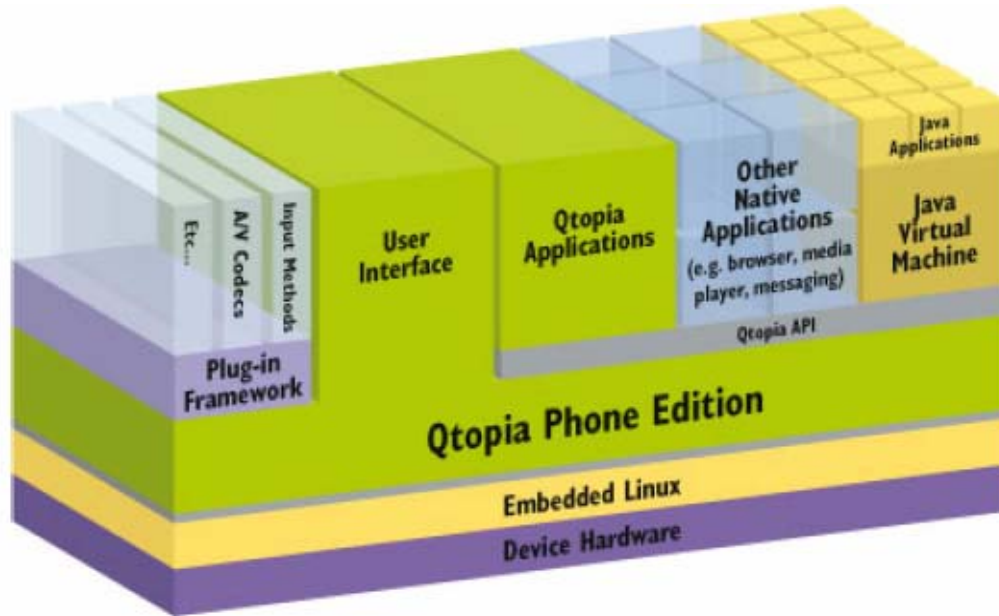




# greenphone software

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- Qtopia Phone Edition 4.1.7
- Linux 2.4.19 kernel
- Source code can be downloaded at [trolltech.com](http://trolltech.com)
- Phone can be re-flashed through USB or flash-card





# what is it good for?

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- Rapid prototyping
  - Simple API means fast implementations
- Versatility
  - Windows vs Linux = Symbian OS vs Greenphone (to some extent)
    - Full sources are not available in will probably not be available
- Only intended for developers





# qtopia sdk - versions

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- **Community (free)**
  - Sources for applications (GPL)
  
- **Light (\$195 ≈ 1200 kr)**
  - Same sources as community (dual license)
  - Can be used for commercial distribution
  
- **Professional (unknown)**
  - Support from Trolltech
  - Full source
  - Can be used for commercial distribution





# qtopia sdk - contents

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- The SDK is provided as a VMware Virtual Machine image
  - Avoids ordinary Linux hassle without sacrificing power
  - Runs on Windows and Linux
  - Uniform development platform for multiple developers
- Contents
  - Debian Linux with KDE
  - KDevelop – IDE
  - Qt Designer – UI designer
  - Qt Linguist – Translation tool
  - Assistant – API documentation
  - Phone emulator
  - apt-get – For easy install of additional applications





- Download and install VMware player from [vmware.com](http://vmware.com)
- Download SDK from [Qtopia.net](http://Qtopia.net) (an iso-file)
- Mount or burn iso
- Install SDK
- Launch SDK VM











- UI is constructed by laying out Widgets
- Qt Designer → XML-file → C-code
  - You can just as well write the code yourself
- The widgets are well documented (in Qt Assistant and on [doc.trolltech.com](http://doc.trolltech.com))
- Each widget has a number of signals and slots associated





- Qt's event interface
  - Signals are emitted when something happens
  - Signals are connected to slots which reacts in some way
- Simple interface to code
  - Button press calls some function
  - Spinbox emits signal with new value whenever changed





# hello world signal/slots

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```
// in helloworld.h
class helloworld : public helloworldbase
{
    Q_OBJECT
public:
    helloworld(QWidget* parent = 0, Qt::WFlags f = 0);
    virtual ~helloworld();

private slots:
    void goodBye();
};
```





# hello world signal/slots

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```
// in helloworld.c constructor
    connect(quit, SIGNAL(clicked()),
           this, SLOT(goodBye()));

// in helloworld.c
helloworld::goodBye()
{
    // Your code here, in this case, just close the app
    close();
}
```





- Promising
  - Easy to get started with
  - Qt Widgets are well documented
- But a lot is missing
  - Documentation
  - Not stable enough
  - It is not clear (to me) how to compile phone functionality
  - Community
- Fatal weakness: It is too expensive
  - Not enough open source developers will buy one
  - Blocks for Linux-style development





- Make a simple program to calculate BMI
  - To do this you will need to:
    1. Lay out some widgets
    2. Tie the widgets together to make the spinbox and slider follow each other
    3. Tie the value change of the two boxes to a simple function which calculates and displays the BMI
- I will come around with the greenphone

