

Getting started with N900 Programming

CMPS160

What is Maemo?

Powered by Nokia:

[http://
maemo.nokia.com/](http://maemo.nokia.com/)



Powered by the community:

<http://maemo.org/>



NOKIA

N900 Hardware

N900 Features	
Processor	OMAP 3430 with 600 MHz clock frequency.
Memory	Up to 1GB of application memory
Storage	32 GB, extendable up to 48 GB
Display	800x480 (3.5") touchscreen
Camera	5MPx with autofocus, WVGA video
Graphics	Hardware-accelerated with OpenGL ES 2.0 support
Connectivity	Wi-Fi, HSPA, quad band GSM, USB, Bluetooth
Other	A-GPS, accelerometer

Updating the firmware

- Find out which release of Maemo you have on the phone by going to “Settings->General->About product”
- If the version is less than 10.2010.xxxx you should update the firmware to Maemo 5 PR 1.2 before moving forward
- Download “Nokia Software Updater” and follow the instructions.

Direct Link :

http://nds1.nokia.com/files/support/global/phones/software/NokiaSoftwareUpdaterSetup_EN_US.exe

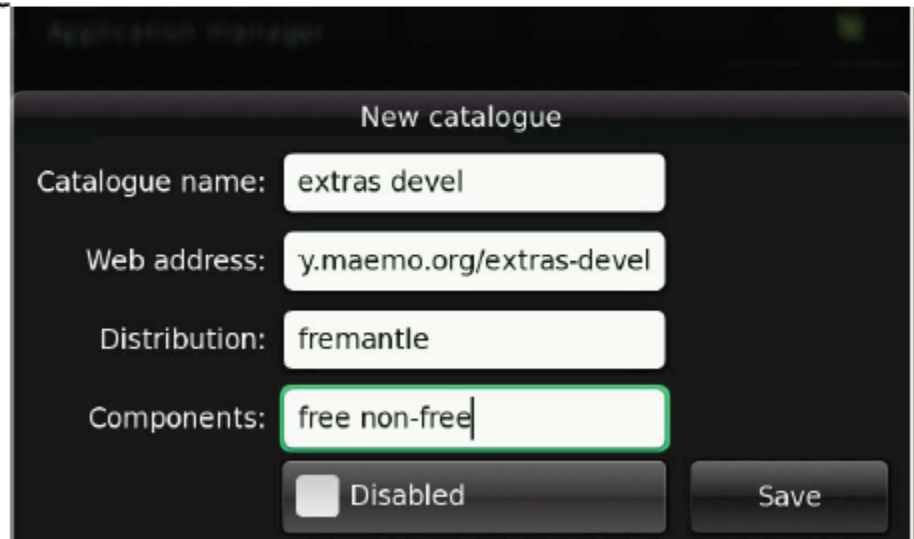
NOTE : Make sure to charge the phone before the firmware update, and also NOT to unplug the usb cable during updating.

Application Manager

Open App. manager

- click "Application Manager" at the top, select "Application Catalogs"
- add new repository:
 - Catalog name: extras-devel
 - Web address: <http://repository.maemo.org/extras-devel>
 - Distribution: fremantle
 - Components: free non-free

Update
(may take a while)



The screenshot shows a dialog box titled "New catalogue" with the following fields and controls:

- Catalogue name: extras devel
- Web address: y.maemo.org/extras-devel
- Distribution: fremantle
- Components: free non-free
- Disabled: Disabled
- Save: Save

Development Tools

- Connect the phone to the internet via WiFi. Goto “App. Manager->Download->All”
 1. Wait until the application catalogs are updated.
 - If it doesn't start updating automatically, goto the top menu (Application Manager) and refresh.
 2. Install “OpenSSH Client and Server” (start typing and the list will show the matches)
 - You'll have to set a new root password.
 3. Install “mad-developer”
 4. Install “rootsh” to gain root access from the X-Terminal

(some phones would already have these packages installed, you can check to see if ‘Mad Developer’ is already available under applications. Launch the X-Terminal and type ‘root’ to see if rootsh is installed)

Connecting to PC

- Launch Mad-Developer on the N900
 - Click “Manage USB->Load g_ether” / “USB Networking->Windows Network”
 - If the USB0 IP doesn't appear, find out the IP of the device by clicking ‘Developer Xterm’ and running ‘ifconfig’
 - Click ‘Developer Password’, this will give a temporary developer password for the session.
- Connect the USB cable to the PC
- Launch QtCreator on the PC
- Goto “Tools->Options->Projects->Maemo Device Configurations”
 - Add a new entry, enter a name
 - Change authentication type to password
 - Enter username (“developer”) and password (from the mad developer screen on the phone)
 - Click “Test”. If successful this will show the versions of Qt libraries installed on the phone.

Lab Machine Peculiarities with the USB Ethernet Driver

- Plug USB cable into the top port on the CPU (Windows driver installation is port specific)
- Use the newest version of mad-developer (1.94)
- USB ethernet adapter overrides the normal network adapter, cutting off your network connection.
This means you will **not** be able to use the internet, access your home folder, etc. Plan accordingly. Connection should be restored once the phone is unplugged.
- Please shutdown the machine after use. This is to prevent any driver instabilities affecting other users.

Tips

- For personal development and testing, use the root password instead of the temporary developer password. Default root password of the preconfigured phones is simply “.”

The phone already has X Terminal

- start by clicking its icon or hit the hot key “CTRL + SHFT + X”
- type `root` to become root (superuser)
- set normal user password with `passwd user`
- find IP address with `/sbin/ifconfig` (changes based on connection)
- start ssh with `/etc/init.d/ssh start` (only once, even with reboot)

If you want to do lots of command line work, ssh into phone from laptop

- `ssh root@192.168.1.101` (or whatever your IP address is)