

Router Installation & Hello World

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Project 2

- Part 1
 - Configure router
 - Configure cross-compilation env
- Part 2
 - Write a web-server to run on the router
- Part 3
 - Collect stats on the router and display via web-server from Part 2

Project 2, Part I

Overview

- Router installation
- Router configuration
- Compiling/Running Hello World

The Router

- Hardware
 - Linksys WRT54GL v1.1
 - 4MB Flash, 16MB RAM
 - Broadcom 5352 @ 200MHz
- Software
 - OpenWRT, Kamikaze 7.09, Linux 2.4
 - Buildroot X-compilation environment

Router Installation via Linksys web GUI (demo)

1. Plug in power cable and turn on the router
2. Connect a port from 1-4 on the router to a computer using included ethernet cable
3. Configure computer with a DHCP address (if doesn't work, try a static IP address between 192.168.1.2 and 192.168.1.254, gateway and DNS is not required).

Router Installation via Linksys web GUI contd.

4. **Download** <http://tinyurl.com/yr5hf6> to computer
5. **Open** <http://192.168.1.1/Upgrade.asp> in your browser or manually go to <http://192.168.1.1>, then Administration, and Firmware Upgrade. Use username admin, and password admin to log in.
6. **Upload** `openwrt-wrt54g-2.4-squashfs.bin` from step 4
7. **Wait** until the firmware is uploaded and the router restarts

Router Configuration (demo)

1. telnet to 192.168.1.1
2. run passwd to configure the root's passwd
3. ssh root@192.168.1.1 with passwd from step 2
4. For cable modem config see <http://tinyurl.com/2v3bx6>

Compiling and Running Hello World (demo)

1. Use compiler binaries from the following location on attu: /homes/iws/ivan/bin
2. e.g. /homes/iws/ivan/bin/gcc hello.c -o hello
3. scp hello root@192.168.1.1:~/
4. ssh root@192.168.1.1
5. Once you are on the router, run: ./hello

Hand in

- Via catalyst, submit output of **uname -a**
- Due on Friday, October 24th

Further Reading

- More Install information:
 - <http://wiki.openwrt.org/OpenWrtDocs/Hardware/Linksys/WRT54GL>
 - <http://wiki.openwrt.org/InstallingWrt54gl>
- Cross-compilation environment setup:
 - <http://downloads.openwrt.org/docs/buildroot-documentation.html>