

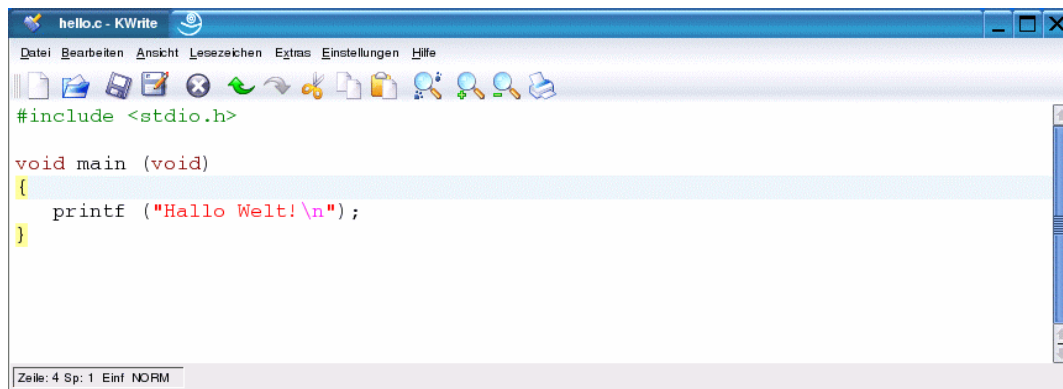
How to check your C Development Environment

The IGW/100 Linux Security Gateway is powered by a 32-bit x86 microcontroller. The IA-32 microcontroller architecture and the IGW/100 default Linux operating system – called “Embedded Gateway Linux” – allows you to use the native GCC tool chain of a Linux-based PC for C/C++ software development.

- **1. Step:** Setup a Ethernet link between the IGW/100 and a PC system. It is possible to use the IGW/100 LAN1, LAN2 or LAN3 Ethernet LAN port for this connection. Use a valid IP address for your PC. The following table shows some example configurations.

IGW/100 LAN Port / Default IP Address	Recommended PC IP Address
LAN1 (eth0) 192.168.0.126	192.168.0.1
LAN2 (eth1) 192.168.1.126	192.168.1.1
LAN3 (eth2) 192.168.2.126	192.168.2.1

- **2. Step:** Booting up the IGW/100 and use a Telnet console session. Login with administrator rights (user name: **root**, no password necessary). Change to the directory **/home/gast** within the IGW/100 Linux file system.
- **3. Step:** Use a text editor program (i.e. *KWrite*) on your Linux-based PC and write a simple “Hello World” program in C. Save your source code as **hello.c**.



```

#include <stdio.h>

void main (void)
{
    printf ("Hallo Welt!\n");
}

```

- **4. Step:** Use the GCC of your PC Linux to build an executable file of your “Hello World”. Run the new executable on your PC. Use the following commands:

```

gcc -o hello hello.c
strip hello
./hello

```

This command lines assumes, that **hello.c** is the file name of your “Hello World” C source file. The executable name is **hello**. The optional `strip` command produces a very small binary.

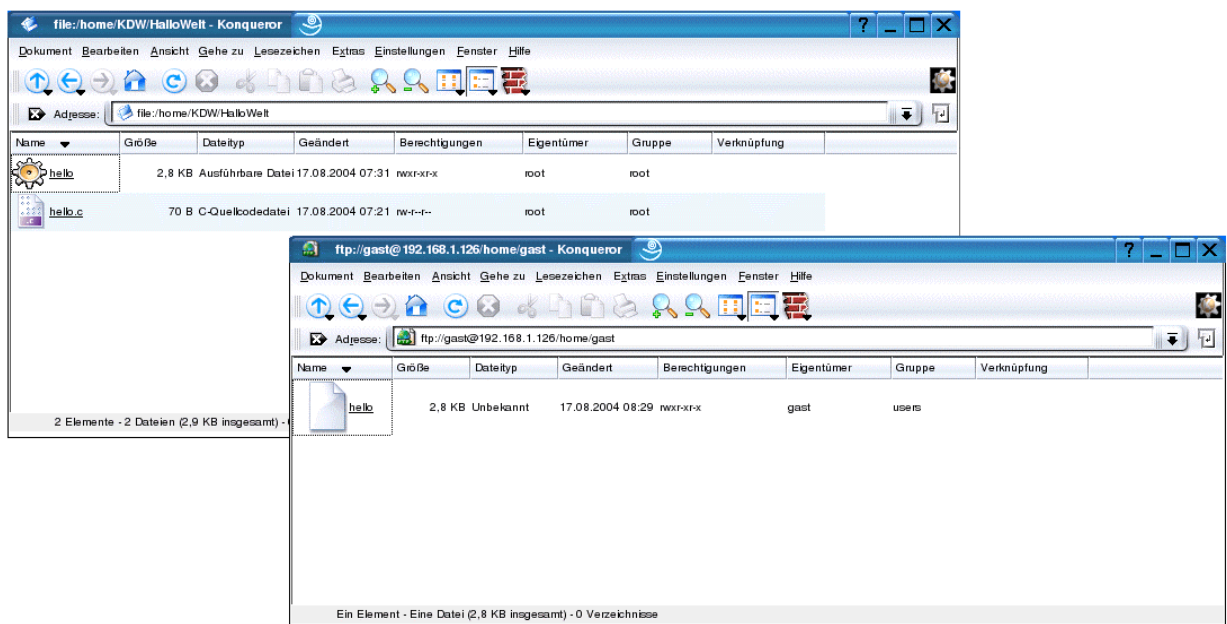
```

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hello.c: In function `main':
hello.c:4: warning: return type of `main' is not `int'
linux:/home/KDW/HalloWelt # ls -al
total 16
drwxr-xr-x  2 root  root    96 Aug 17 07:31 .
drwxr-xr-x  3 root  root   80 Aug 17 07:15 ..
-rwxr-xr-x  1 root  root 11066 Aug 17 07:31 hello
-rw-r--r--  1 root  root   70 Aug 17 07:21 hello.c
linux:/home/KDW/HalloWelt # strip hello
linux:/home/KDW/HalloWelt # ls -al
total 8
drwxr-xr-x  2 root  root    96 Aug 17 07:31 .
drwxr-xr-x  3 root  root   80 Aug 17 07:15 ..
-rwxr-xr-x  1 root  root 2900 Aug 17 07:31 hello
-rw-r--r--  1 root  root   70 Aug 17 07:21 hello.c
linux:/home/KDW/HalloWelt # ./hello
Hallo Welt!
linux:/home/KDW/HalloWelt #

```

- **5. Step:** Transfer the executable with the help of a FTP session from the PC to the IGW/100. If you use a Linux distribution (i.e. a *SuSE* PC Linux) with *KDE* on your PC, it is possible to use the file manager *Konqueror* for this task.

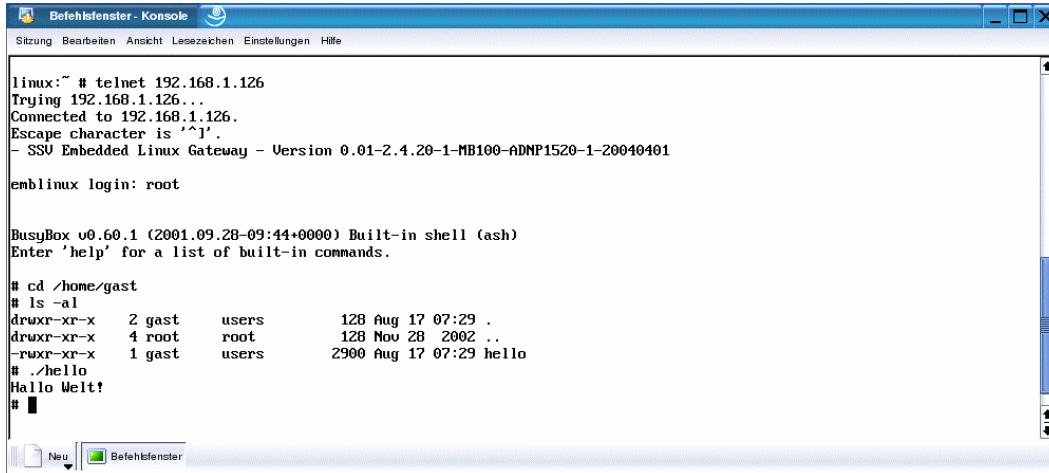


With KDE, just start *Konqueror* two times. Set one *Konqueror* address to the PC directory with the executable **hello**.

For the second *Konqueror* please use the address **ftp://gast@192.168.1.126/home/gast**. With this address, *Konqueror* is working as a FTP client for the IGW/100 FTP server. Then move the executable with the help of your mouse from one *Konqueror* window to the other window. This mouse action issues a FTP file transfer.

Please note: The “192.168.1.126” within **ftp://gast@192.168.1.126/home/gast** is the IP address of the IGW/100. Use another IP address if necessary. The IGW/100 FTP user name **gast** require no password.

- **6. Step:** For run the executable file **hello** on the IGW/100, use your Telnet session and start **hello** from the IGW/100 directory **/home/gast**.



```
linux:~ # telnet 192.168.1.126
Trying 192.168.1.126...
Connected to 192.168.1.126.
Escape character is '^]'.
- SSV Embedded Linux Gateway - Version 0.01-2.4.20-1-MB100-ADNP1520-1-20040401
enblinux login: root

BusyBox v0.60.1 (2001.09.28-09:44+0000) Built-in shell (ash)
Enter 'help' for a list of built-in commands.

# cd /home/gast
# ls -al
drwxr-xr-x  2 gast  users      128 Aug 17 07:29 .
drwxr-xr-x  4 root  root       128 Nov 28  2002 ..
-rwxr-xr-x  1 gast  users      2900 Aug 17 07:29 hello
# ./hello
Hallo Welt!
#
```

That's all.