



Petalinux Tabanlı CORDIC HW/SW CoDesign Proje

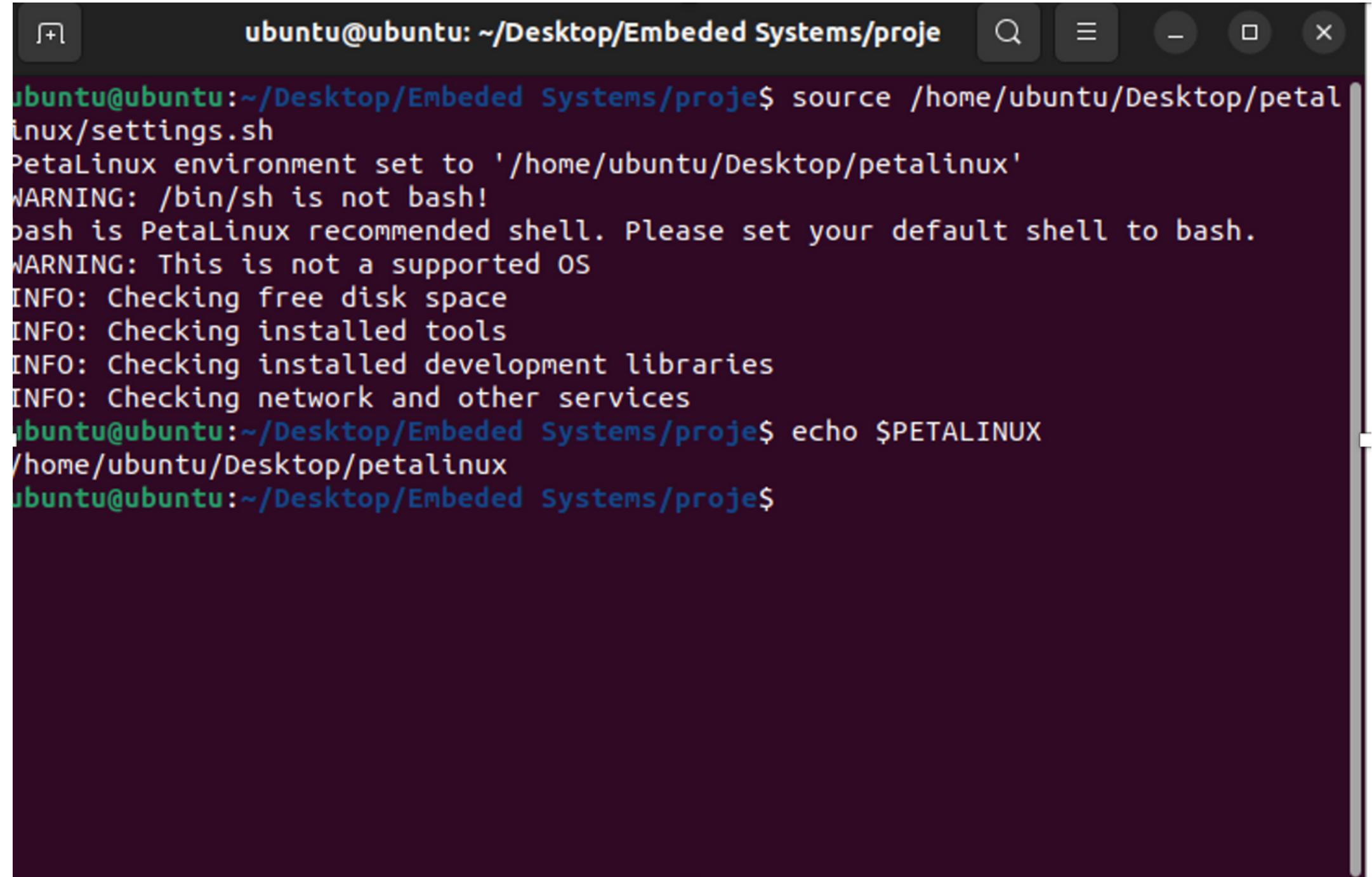
İrem KALKANLI

Deniz UZUN

İrem BOZKURT

Özlem ÇALI

Ceyda UYMAZ



A screenshot of a terminal window titled "ubuntu@ubuntu: ~/Desktop/Embeded Systems/proje". The window contains the following text:

```
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje$ source /home/ubuntu/Desktop/petalinux/settings.sh
PetaLinux environment set to '/home/ubuntu/Desktop/petalinux'
WARNING: /bin/sh is not bash!
bash is PetaLinux recommended shell. Please set your default shell to bash.
WARNING: This is not a supported OS
INFO: Checking free disk space
INFO: Checking installed tools
INFO: Checking installed development libraries
INFO: Checking network and other services
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje$ echo $PETALINUX
/home/ubuntu/Desktop/petalinux
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje$
```

```
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje/proje$ petalinux-create -t project  
-n proje --template zynq  
INFO: Create project: proje  
find: '/home/ubuntu/Desktop/Embeded': No such file or directory  
find: 'Systems/proje/proje/proje': No such file or directory  
environment: line 712: pushd: too many arguments  
environment: line 717: popd: directory stack empty  
INFO: New project successfully created in /home/ubuntu/Desktop/Embeded Systems/p  
roje/proje/proje
```

```
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje/proje/proje$ petalinux-config --get-hw-description ../../
[INFO] Sourcing buildtools
INFO: Getting hardware description...
INFO: Renaming design_1_wrapper.xsa to system.xsa
[INFO] Generating Kconfig for project
[INFO] Menuconfig project

*** End of the configuration.
*** Execute 'make' to start the build or try 'make help'.

[INFO] Sourcing buildtools extended
[INFO] Extracting yocto SDK to components/yocto. This may take time!
[INFO] Sourcing build environment
[INFO] Generating kconfig for Rootfs
[INFO] Silentconfig rootfs
[INFO] Generating plnxtool conf
[INFO] Adding user layers
[INFO] Generating workspace directory
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje/proje/proje$
```

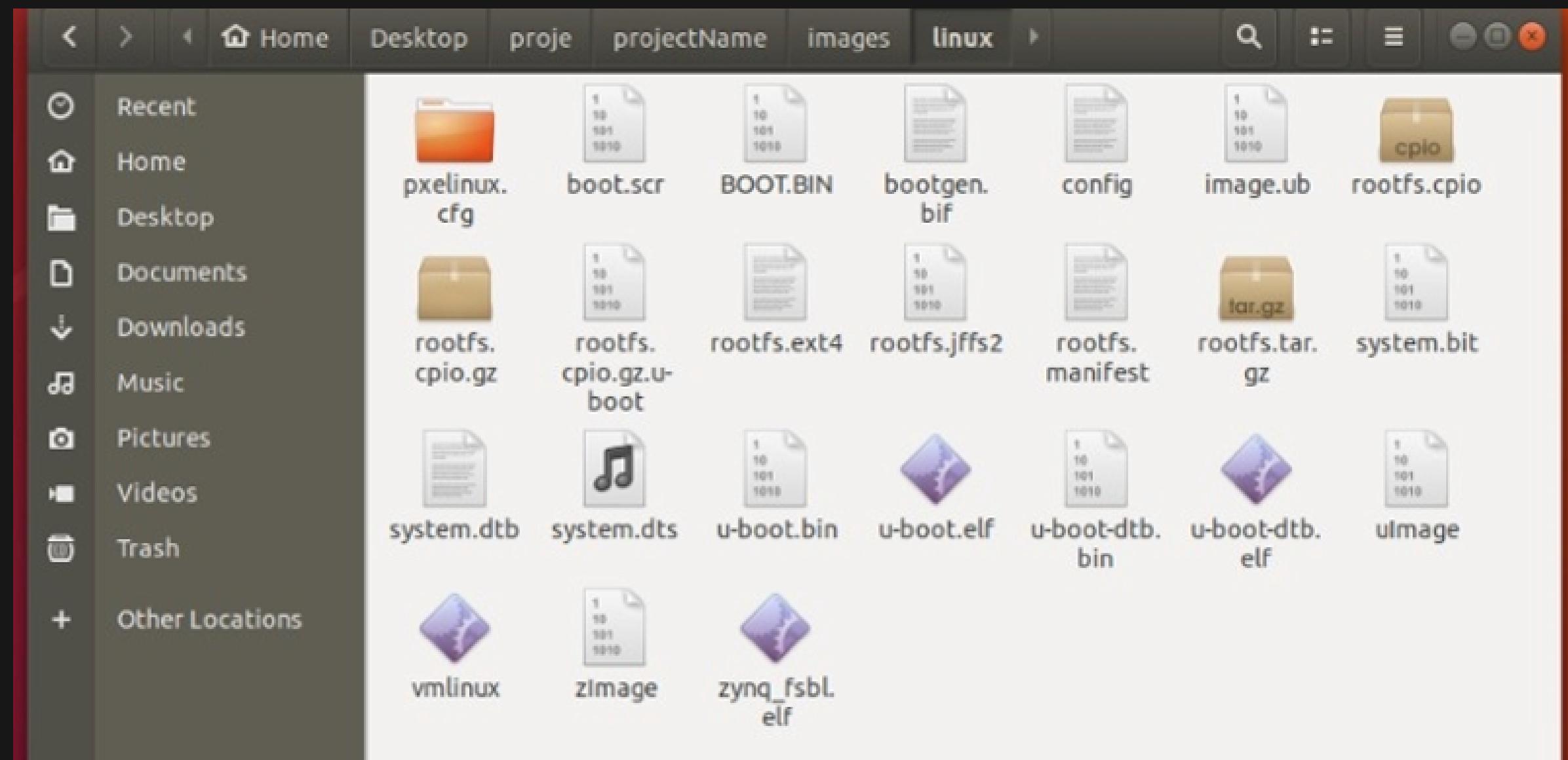
```
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje/proje/proje$ petalinux-config -c rootfs
[INFO] Sourcing buildtools
[INFO] Silentconfig project
[INFO] Generating kconfig for Rootfs
[INFO] Menuconfig rootfs

*** End of the configuration.
*** Execute 'make' to start the build or try 'make help'.

[INFO] Generating plnxtool conf
[INFO] Successfully configured rootfs
```

```
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje/proje/proje$ petalinux-config -c kernel
[INFO] Sourcing buildtools
[INFO] Silentconfig project
[INFO] Sourcing buildtools extended
[INFO] Sourcing build environment
[INFO] Generating kconfig for Rootfs
[INFO] Silentconfig rootfs
[INFO] Generating plnxtool conf
[INFO] Generating workspace directory
[INFO] Configuring: kernel
[INFO] bitbake virtual/kernel -c cleansstate
NOTE: Started PRServer with DBfile: /home/ubuntu/Desktop/Embeded_Systems/proje/proje/build/cache/prserv.sqlite3, IP: 127.0.0.1, PORT: 35937, PID: 12446
WARNING: Host distribution "ubuntu-22.04" has not been validated with this version of the build system; you may possibly experience unexpected failures. It is recommended that you use a tested distribution.
Loading cache: 100% | ETA: ---:--:--
Loaded 0 entries from dependency cache.
Parsing recipes: 100% #####| Time: 0:04:42
Parsing of 3476 .bb files complete (0 cached, 3476 parsed). 5133 targets, 268 skipped, 0 masked, 0 errors.
NOTE: Resolving any missing task queue dependencies
```

```
ubuntu@ubuntu:~/Desktop/Embeded Systems/proje/proje/proje$ petalinux-build
[INFO] Sourcing buildtools
[INFO] Building project
[INFO] Sourcing buildtools extended
[INFO] Sourcing build environment
[INFO] Generating workspace directory
INFO: bitbake petalinux-image-minimal
NOTE: Started PRServer with DBfile: /home/ubuntu/Desktop/Embeded_Systems/proje/proje/build/cache/prserv.sqlite3, IP: 127.0.0.1, PORT: 39627, PID: 228565
WARNING: Host distribution "ubuntu-22.04" has not been validated with this version of the build system; you may possibly experience unexpected failures. It is recommended that you use a tested distribution.
Loading cache: 100% |#####| Time: 0:00:02
Loaded 5128 entries from dependency cache.
Parsing recipes: 100% |#####| Time: 0:00:01
Parsing of 3476 .bb files complete (3471 cached, 5 parsed). 5133 targets, 268 skipped, 0 masked, 0 errors.
NOTE: Resolving any missing task queue dependencies
NOTE: Fetching uninative binary shim file:///home/ubuntu/Desktop/Embeded_Systems/proje/proje/components/yocto/downloads/uninative/5ec5a9276046e7eceeac749a18b175667384e1f445cd4526300a41404d985a5b/x86_64-nativesdk-libc.tar.xz;sha256sum=5ec5a9276046e7eceeac749a18b175667384e1f445cd4526300a41404d985a5b (will check PREMIRRORS first)
WARNING: Your host glibc version (2.35) is newer than that in uninative (2.33). Disabling uninative so that sstate is not corrupted.
Initialising tasks: 100% |#####| Time: 0:00:10
```



COM7 - PuTTY

```
method.
Fri Mar  9 14:34:47 UTC 2018
hwclock: Cannot access the Hardware Clock via any known method.
hwclock: Use the --verbose option to see the details of our search for an access
method.
INIT: Entering runlevel: 5
Configuring network interfaces... done.
Starting system message bus: dbus.
Starting haveged: haveged: command socket is listening at fd 3
haveged: haveged starting up

Starting Dropbear SSH server: dropbear.
hwclock: Cannot access the Hardware Clock via any known method.
hwclock: Use the --verbose option to see the details of our search for an access
method.
Starting internet superserver: inetd.
Starting syslogd/klogd: done
Starting tcf-agent: OK

PetaLinux 2021.2 projectName ttyPS0

root@projectName:~#
```

IP ayarlarını düzenle

EI ile girilen

IPv4

Açık

IP adresi
192.168.2.9

Alt ağ maskesi
255.255.255.0

Ağ geçidi

Tercih edilen DNS

HTTPS üzerinden DNS
Kapalı

Alternatif DNS

Kaydet **İptal**

This screenshot shows a mobile application interface for managing network settings. The title is "IP ayarlarını düzenle". A dropdown menu is open, showing "El ile girilen". The main section is titled "IPv4" with an "Açık" (Open) toggle switch. Below it are fields for "IP adresi" (IP address) containing "192.168.2.9" and "Alt ağ maskesi" (Subnet mask) containing "255.255.255.0". There is also a field for "Ağ geçidi" (Gateway) which is currently empty. Below these are sections for "Tercih edilen DNS" (Preferred DNS) and "HTTPS üzerinden DNS" (DNS over HTTPS), both of which have dropdown menus set to "Kapalı" (Closed). At the bottom are two buttons: "Kaydet" (Save) and "İptal" (Cancel).

COM7 - PuTTY

```
root@projectName:~# root
-sh: root: command not found
root@projectName:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
        inet6 ::1/128 scope host
            valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 00:0a:35:00:1e:53 brd ff:ff:ff:ff:ff:ff
        inet 192.168.2.8/24 scope global eth0
            valid_lft forever preferred_lft forever
        inet6 fe80::20a:35ff:fe00:1e53/64 scope link
            valid_lft forever preferred_lft forever
3: sit0@NONE: <NOARP> mtu 1480 qdisc noop state DOWN group default qlen 1000
    link/sit 0.0.0.0 brd 0.0.0.0
root@projectName:~#
```

COM7 - PuTTY

```
# /etc/network/interfaces -- configuration file for ifup(8), ifdown(8)

# The loopback interface
auto lo
iface lo inet loopback

# Wireless interfaces
iface wlan0 inet dhcp
    wireless_mode managed
    wireless_essid any
    wpa-driver wext
    wpa-conf /etc/wpa_supplicant.conf

iface atml0 inet dhcp

# Wired or wireless interfaces
auto eth0
iface eth0 inet static
    address 192.168.2.8
    netmask 255.255.255.0
    network 192.168.2.0
    gateway 192.168.2.1
iface eth1 inet dhcp
- /etc/network/interfaces 1/35 2%
```

```
#define TERMINAL "/dev/ttyPS0"
#include <errno.h>
#include <fcntl.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <termios.h>
#include <unistd.h>
#include <sys/mman.h>
#include <math.h>
#include <time.h>

int num1[255];
int num2[255];
int i;

int main()
{
    unsigned int gpio_size = 0x8000;
    off_t gpio_pbase = 0x41200000;
    long long *gpio64_vptr;
    long long *bram64_vptr;
    int fd2;

    char *portname = TERMINAL;
    int fd;
    int wlen;
    char *xstr = "Hesaplanacak degerleri giriniz: \n";
    int xlen = strlen(xstr);
    fd = open(portname, O_RDWR | O_NOCTTY | O_SYNC);
    if (fd < 0)
    {
        printf("Error opening %s: %s\n", portname, strerror(errno));
        return -1;
    }
    wlen = write(fd, xstr, xlen);
    if (wlen != xlen)
    {
        printf("Error from write: %d, %d\n", wlen, errno);
    }

    do
    {
        unsigned char buf[80];
        int rdlen;
```

```
rdlen = read(fd, buf, sizeof(buf) - 1);
if (rdlen > 0)
{
    buf[rdlen] = 0;
    printf("%s \n", buf);

    int flag = 0;
    for (i = 0; i < strlen(buf); i++)
    {
        if (buf[i] == ' ')
        {
            flag = 1;
        }
        else
        {
            if (flag == 0)
            {
                num1[i] = buf[i] - '0';
            }
            else
            {
                num2[i] = buf[i] - '0';
            }
        }
    }
    int val1 = num1[1] + num1[0] * 10;
    int val2 = num2[4] + num2[3] * 10;

    if ((fd2 = open("/dev/mem", O_RDWR | O_SYNC)) != -1)
    {
        gpio64_vptr = (long long *)mmap(NULL, gpio_size, PROT_READ | PROT_WRITE,
MAP_SHARED, fd2, gpio_pbase);
        *(gpio64_vptr) = val1;
        *(gpio64_vptr + 1) = val2;

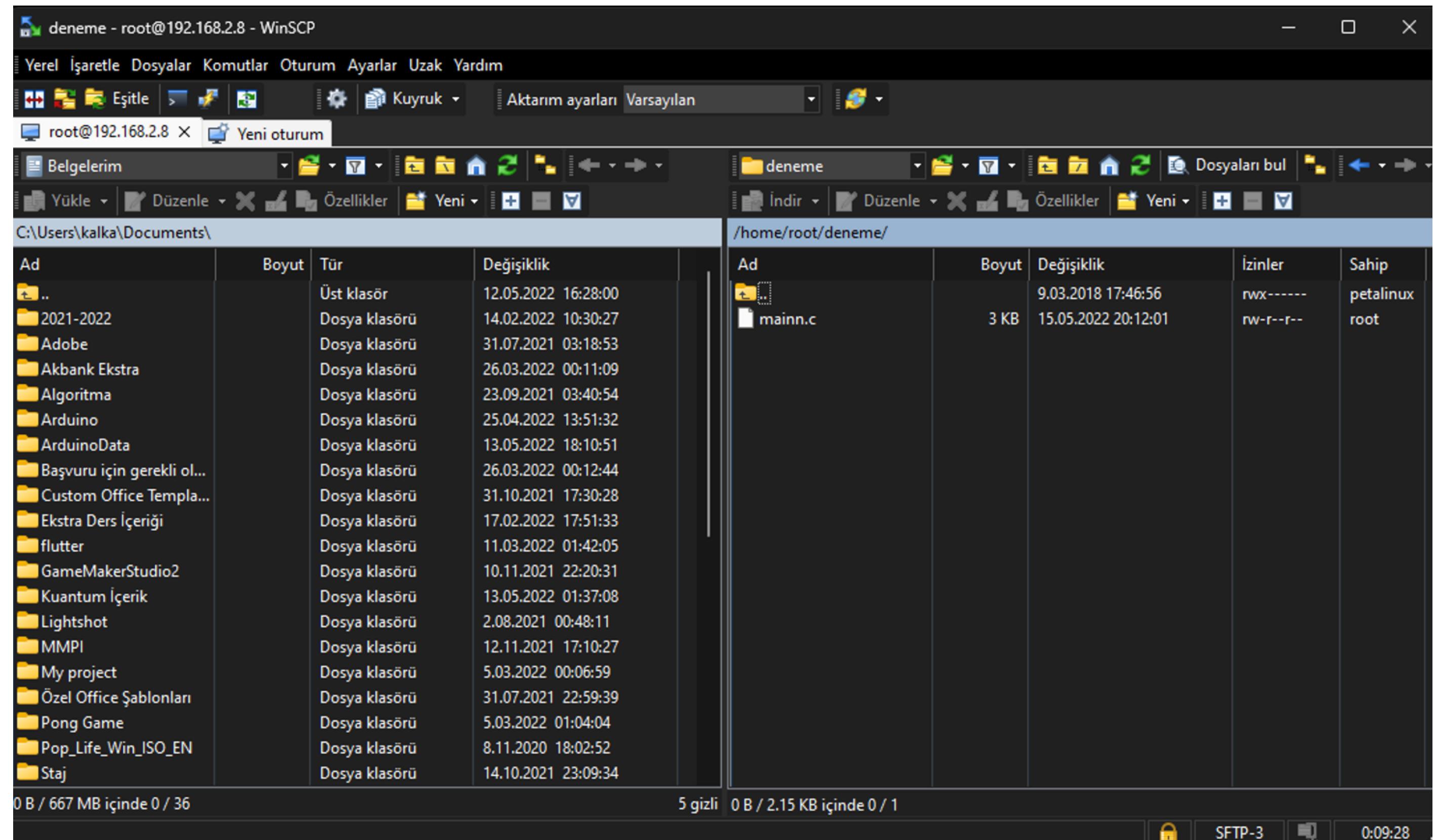
        int pres = *(gpio64_vptr + 1);
        printf("%d \n:", pres);

        char res[20];
        sprintf(res, "%d", pres);
        int reslen = strlen(res);
        write(fd, res, reslen);

        close(fd2);
    }
}
```

```
        }
    }
    else if (rdlen < 0)
    {
        printf("Error from read: %d: %s\n", rdlen, strerror(errno));
    }
    else
    { /* rdlen == 0 */
        printf("Timeout from read\n");
    }

} while (1);
}
```



192.168.2.8 - PuTTY

```
root@projectName:~/deneme# cd deneme/
root@projectName:~/deneme# ls
mainn.c
root@projectName:~/deneme# gcc mainn.c -o mainn
root@projectName:~/deneme# 
```

deneme - root@192.168.2.8 - WinSCP

Yerel İşaretle Dosyalar Komutlar Oturum Ayarlar Uzak Yardım

Eşitle Kuyruk Aktarım ayarları Varsayılan

root@192.168.2.8 X Yeni oturum

Belgelerim Dosyaları bul

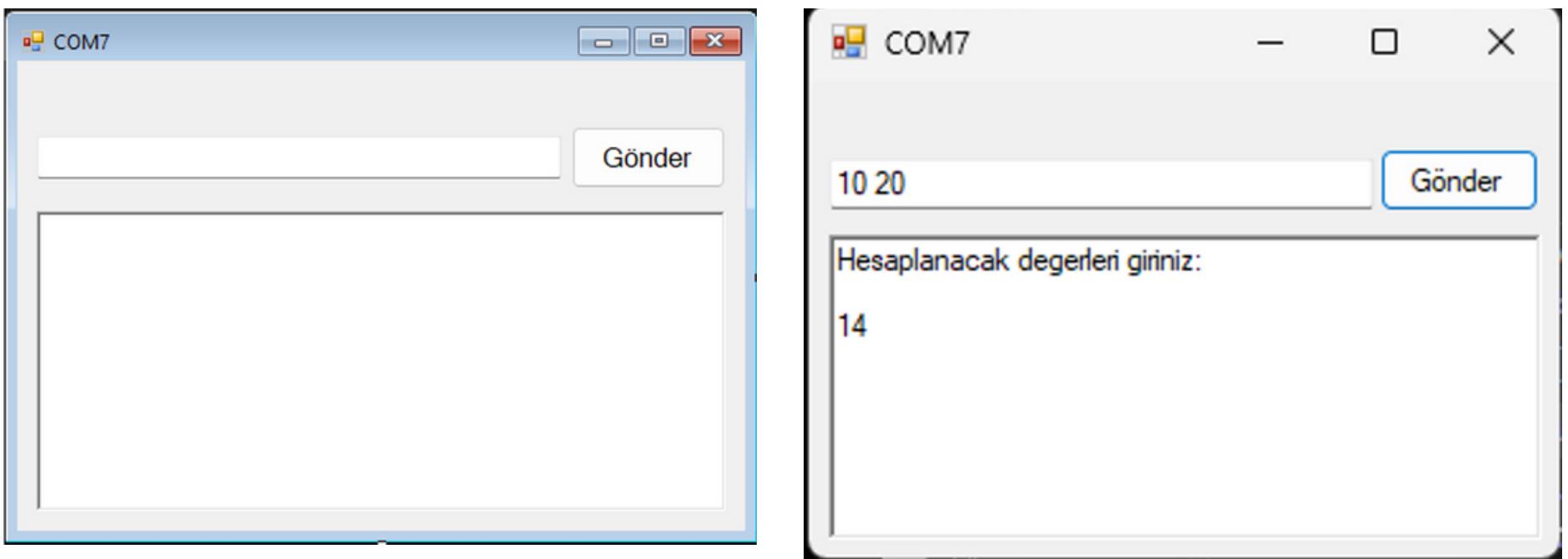
Yükle Düzenle Özellikler Yeni İndir Düzenle Özellikler Yeni

C:\Users\kalka\Documents\ /home/root/deneme/

Ad	Boyut	Tür	Değişiklik	İzinler	Sahip
..		Üst klasör	12.05.2022 16:28:00		
2021-2022		Dosya klasörü	14.02.2022 10:30:27		
Adobe		Dosya klasörü	31.07.2021 03:18:53		
Akbank Ekstra		Dosya klasörü	26.03.2022 00:11:09		
Algoritma		Dosya klasörü	23.09.2021 03:40:54		
Arduino		Dosya klasörü	25.04.2022 13:51:32		
ArduinoData		Dosya klasörü	13.05.2022 18:10:51		
Başvuru için gerekli ol...		Dosya klasörü	26.03.2022 00:12:44		
Custom Office Templa...		Dosya klasörü	31.10.2021 17:30:28		
Ekstra Ders İçeriği		Dosya klasörü	17.02.2022 17:51:33		
flutter		Dosya klasörü	11.03.2022 01:42:05		
GameMakerStudio2		Dosya klasörü	10.11.2021 22:20:31		
Kuantum İçerik		Dosya klasörü	13.05.2022 01:37:08		
Lightshot		Dosya klasörü	2.08.2021 00:48:11		
MMPI		Dosya klasörü	12.11.2021 17:10:27		
My project		Dosya klasörü	5.03.2022 00:06:59		
Özel Office Şablonları		Dosya klasörü	31.07.2021 22:59:39		
Pong Game		Dosya klasörü	5.03.2022 01:04:04		
Pop_Life_Win_ISO_EN		Dosya klasörü	8.11.2020 18:02:52		
Staj		Dosya klasörü	14.10.2021 23:09:34		

0 B / 667 MB içinde 0 / 36 5 gizli 0 B / 15.9 KB içinde 0 / 2

Şifre SFTP-3 0:07:31



```
root@projectName:~# devmem 0x41200000 32 0xA
root@projectName:~# devmem 0x41200008 32 20
root@projectName:~# devmem 0x41200008 32
0x0000000E
root@projectName:~#
```

TEŞEKKÜR EDERİZ