

Intellus OpenWRT-SDK README File

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This README offers additional instructions to build the embedded linux operating system image for the jjPlus embedded platform series, an Atheros AP93 reference design variant.

___ Top Level Build Files to Prepare the Build Tree ___

```
|
|-openWrt-intellus-extra-tarballs.tar      - extra source tarballs
|-jjPlus-JWAP201-openWrt-V0.0.1.tar.bz2   - OpenWRT build system
|-firmware                                 - jjPlus platforms images
```

___ Build image ___

```
$ tar -jxf jjPlus-JWAP201-openWrt-V0.0.1.tar.bz2
$ cd openwrt-intellus
$ tar -xf openWrt-intellus-extra-tarballs.tar
$ cp jwap201_defconfig .config
$ make menuconfig
```

Deafault setting is:

```
Target Profile -> ( ) jjPlus JA73PF board
                  ( ) jjPlus JA76PF board
                  ( ) jjPlus JWAP002 board
                  ( ) jjPlus JA76PF2 board
                  ( ) jjPlus JA76PF2HX board
                  ( ) jjPlus JWAP006 board
                  ( ) jjPlus JWAP007 board
                  (X) jjPlus JWAP201 board
```

Select the platform then save the configuration file.

```
$ make
```

___ Install image ___

Assume JWAP201 is selected, the images are :

```
openwrt-intellus/bin/ar71xx/openwrt-ar71xx-jwap201-kernel.bin
openwrt-intellus/bin/ar71xx/openwrt-ar71xx-jwap201-rootfs-squashfs.bin
```

The image name will be changed with the selected board.

The lzma-compressed kernel and squashfs images are programmed to the flash

using redboot flash image system (fis) commands or uboot memory copy (cp.b) commands . Both of them use tftp transfer protocol for image retrieval.

___ RedBoot Network Config ___

The default network settings for the redboot configuration are:

Local IP address: 192.168.1.2
Local IP address mask: 255.255.255.0
Default server IP address: 192.168.1.1

___ UBoot Network Config ___

The default network settings for the uboot configuration are:

Local IP address: 192.168.1.2
Default server IP address: 192.168.1.1

If a different local or default server IP is required for the LAN, it will be necessary to change the values using fconfig and rebooting for the changes to take effect.

___ Re-program Board Images ___

The following steps will reprogram the kernel and file system images

a) JWAP201

___ Web Server Account Info ___

username: root
password: no password by default
IP address: 192.168.2.1

```
ar7240> tftp 0x80060000 openwrt-ar71xx-jwap201-kernel.bin
Trying eth0
dup 1 speed 100
Using eth0 device
TFTP from server 192.168.1.1; our IP address is 192.168.1.2
Filename 'openwrt-ar71xx-jwap201-kernel.bin'.
Load address: 0x80060000
Loading: #####
#####
#####
done
Bytes transferred = 851968 (d0000 hex)
ar7240> erase 0x9f050000 +0x160000; cp.b $fileaddr 0x9f050000 $filesize
Erase Flash from 0x9f050000 to 0x9f1affff in Bank # 1
```

```

First 0x5 last 0x1a sector size 0x10000
26
Erased 22 sectors
Copy to Flash... write addr: 9f050000
done
ar7240> tftp 0x80060000 openwrt-ar71xx-jwap201-rootfs-squashfs.bin
Trying eth0
Using eth0 device
TFTP from server 192.168.1.1; our IP address is 192.168.1.2
Filename 'openwrt-ar71xx-jwap201-rootfs-squashfs.bin'.
Load address: 0x80060000
Loading: #####
#####
#####
#####
#####
#####
#####
#####
#####
done
Bytes transferred = 2359296 (240000 hex)
ar7240> erase 0x9f1b0000 +0xe40000; cp.b $fileaddr 0x9f1b0000 $filesize
Erase Flash from 0x9f1b0000 to 0x9ffeffff in Bank # 1
First 0x1b last 0xfe sector size 0x10000
254
Erased 228 sectors
Copy to Flash... write addr: 9f1b0000
done
ar7240>re

```

b) JA73PF ,JA76PF ,JWAP002, JWAP006 and JWAP007.

```

RedBoot> fis init -f
About to initialize [format] FLASH image system - continue (y/n)? y
*** Initialize FLASH Image System
... Erase from 0xbf040000-0xbf7e0000: .
... Erase from 0xbf7e0000-0xbf7f0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbf7e0000:
RedBoot> lo -r -b 0x80060000 openwrt-ar71xx-ja73pf-kernel.bin
Using default protocol (TFTP)
Raw file loaded 0x80060000-0x8012ffff, assumed entry at 0x80060000
RedBoot> fis create -l 0x160000 vmlinuz
... Erase from 0xbf040000-0xbf1a0000: .
... Program from 0x80060000-0x80130000 at 0xbf040000: .
... Erase from 0xbf7e0000-0xbf7f0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbf7e0000: .
RedBoot> lo -r -b 0x80060000 openwrt-ar71xx-ja73pf-rootfs-squashfs.bin

```

```

Using default protocol (TFTP)
Raw file loaded 0x80060000-0x8058ffff, assumed entry at 0x80060000
RedBoot> fis create -l 0x5c0000 -e 0 -r 0 rootfs
... Erase from 0xbf1a0000-0xbf760000: .
... Program from 0x80060000-0x80590000 at 0xbf1a0000: .
... Erase from 0xbf7e0000-0xbf7f0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbf7e0000: .
RedBoot> fis create -f 0xbf760000 -l 0x80000 -n rootfs_data
... Erase from 0xbf7e0000-0xbf7f0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbf7e0000: .
RedBoot> fco boot_script_data
boot_script_data:
.. fis load -d vmlinux
.. exec
Enter script, terminate with empty line
>> fis load -l vmlinux
>> exec -c""
>>
Update RedBoot non-volatile configuration - continue (y/n)? y
... Erase from 0xbf7e0000-0xbf7f0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbf7e0000: .
RedBoot>

```

c) JA76PF2 and JA76PF2HX.

```

RedBoot> fis init -f
About to initialize [format] FLASH image system - continue (y/n)? y
*** Initialize FLASH Image System
... Erase from 0xbf040000-0xbffe0000: .
... Erase from 0xbffe0000-0xbfff0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbffe0000:
RedBoot> lo -r -b 0x80060000 openwrt-ar71xx-ja76pf2-kernel.bin
Using default protocol (TFTP)
Raw file loaded 0x80060000-0x8012ffff, assumed entry at 0x80060000
RedBoot> fis create -l 0x160000 vmlinux
... Erase from 0xbf040000-0xbf1a0000: .
... Program from 0x80060000-0x80130000 at 0xbf040000: .
... Erase from 0xbffe0000-0xbfff0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbffe0000: .
RedBoot> lo -r -b 0x80060000 openwrt-ar71xx-ja76pf2-rootfs-squashfs.bin
Using default protocol (TFTP)
Raw file loaded 0x80060000-0x8058ffff, assumed entry at 0x80060000
RedBoot> fis create -l 0xdc0000 -e 0 -r 0 rootfs
... Erase from 0xbf1a0000-0xbff60000: .
... Program from 0x80060000-0x80590000 at 0xbf1a0000: .
... Erase from 0xbffe0000-0xbfff0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbffe0000: .
RedBoot> fis create -f 0xbff60000 -l 0x80000 -n rootfs_data

```

```
... Erase from 0xbffe0000-0xbfff0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbffe0000: .
RedBoot> fco boot_script_data
boot_script_data:
.. fis load -d vmlinux
.. exec
Enter script, terminate with empty line
>> fis load -l vmlinuz
>> exec -c""
>>
Update RedBoot non-volatile configuration - continue (y/n)? y
... Erase from 0xbffe0000-0xbfff0000: .
... Program from 0x83fe0000-0x83ff0000 at 0xbffe0000: .
RedBoot>
```