

NR500 Series Industrial Cellular VPN Router

Application Note 018 Upgrade Firmware via Uboot

Version: V1.0.0
Date: 2018/09/15
Status: Confidential



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1. Introduction

1.1 Overview

This document contains information regarding the configuration and use of upgrade firmware via uboot.

This guide has been written for use by technically competent personnel with a good understanding of the communications technologies used in the product, and of the requirements for their specific application.

1.2 Compatibility

This application note applies to:

Models Shown: NR500 series.

Firmware Version: V1.0.0(903.0) or newer

Other Compatible Models: None

1.3 Version

Updates between document versions are cumulative. Therefore, the latest document will include all the content of previous versions.

Release Date	Doc. Version	Firmware Version	Change Description
2018/09/15	V1.0.0	V1.0.0(903.0)	First released

1.4 Corrections

Appreciate for corrections or rectifications to this application note, and if any request for new application notes please email to: support@navigateworx.com

2. Upgrade via Uboot

1. Connected to the router with console cable, then reboot the router, when "booting" to "0", please hit any key board to make the router go into uboot mode.

```

root@navigateworx:~# [20064.533352] reboot: Restarting system

*****
*           NR500 U-Boot 1.0.0           *
*           Build: 2018-08-20           *
*****

BOARD: NR500 Standard
CPU: MIPS 74kc
RAM: 64 MB DDR1 16-bit CL3-3-3-8
FLASH: 16 MB winbond W25Q128
MAC: 00:03:7F:09:0B:AD (Fixed)
CLOCKS: CPU/RAM/AHB/SPI/REF
        550/400/200/ 25/ 25 MHz

Hit any key to stop booting: 0

nr500s>
nr500s>

```

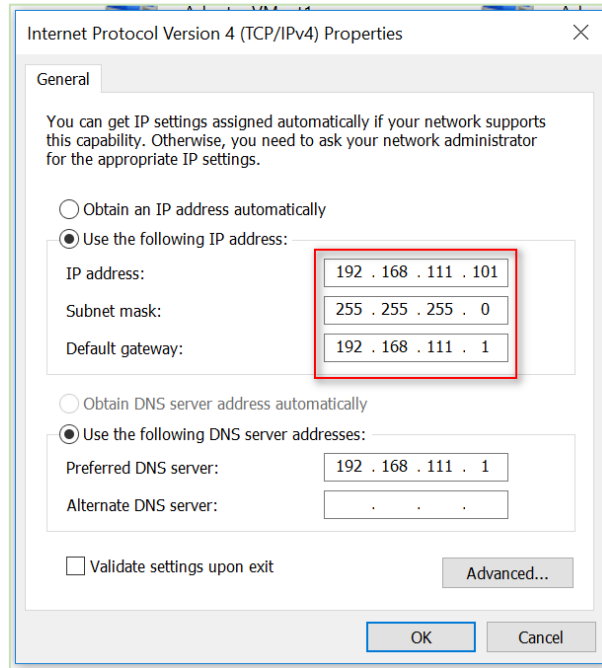
2. Run the command "**printenv**" to check the info and setup the server IP on the PC accordingly.

```

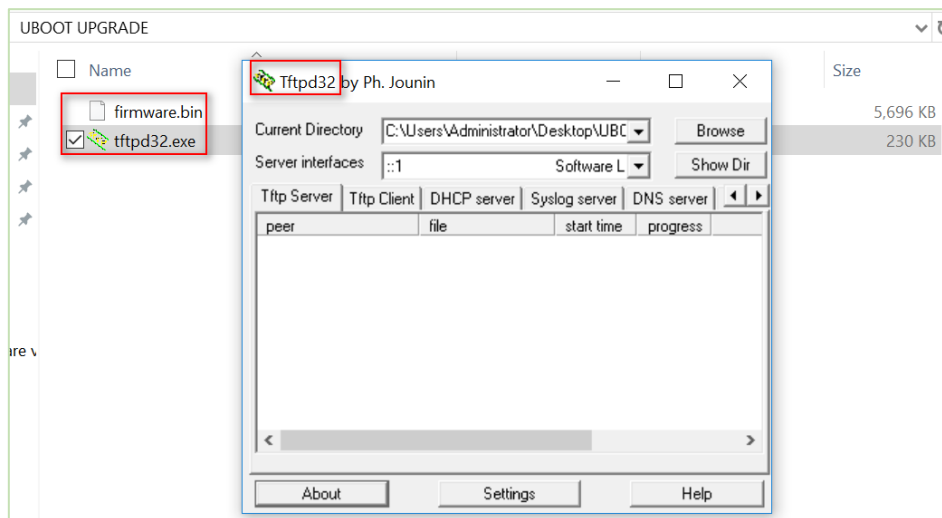
nr500s>
nr500s> printenv
bootargs=board=nr500s console=ttyS0,115200 mtdparts=spi0.0:128k(u-boot),128k(board),8192k
bootcmd=bootm 0x9F040000
bootdelay=1
baudrate=115200
ipaddr=192.168.111.200
serverip=192.168.111.101
autoload=no
hostname=u-boot_nr500s
bootfile=firmware.bin
loadaddr=0x80800000
ncport=6666
lsdk_kernel=1
uboot_name=u-boot.bin
uboot_addr=0x9F000000
uboot_size=0x1EC00
uub=if ping $serverip; then tftpb $loadaddr $uboot_name && if itest.l $filesize <= $uboot
$uboot_size && echo DONE! U-Boot upgraded!; else echo ERROR! File is too big!; fi; else
fw_addr=0x9F040000
ufw=if ping $serverip; then tftpb $loadaddr $bootfile && erase $fw_addr +$filesize && cp
o ERROR! $serverip is not reachable!; fi
stdin=serial
stdout=serial
stderr=serial
ethaddr=00:03:7F:09:0B:AD
ethact=eth0
Environment size: 995/4092 bytes

```

3. Setup the correct IP on PC:



- Put the firmware and TFTP software in the same folder, and rename the firmware as “**firmware.bin**”, then run the TFTP software.



- Run the command “**run ufw**” to start the firmware upgrade.

```
nr500s> run ufw
Link down: eth0
Ethernet mode (duplex/speed): 1/1000 Mbps
Using eth1 device

Ping OK, host 192.168.111.101 is alive!

TFTP from IP: 192.168.111.101
  our IP: 192.168.111.200
  filename: firmware.bin
  using: eth1
  load address: 0x80800000

  Loading: #####
           #####
           #####
           #####
           #####
           #####
           #####
           #####
           #####
           #####
           #####
           #####
```

6. Firmware upgraded successfully

```
TFTP transfer complete!

Bytes transferred: 5831984 (0x58fd30)
Erase FLASH from 0x9F040000 to 0x9F5CFFFF in bank #1
Erasing: #####
          #####
          #####
          #####

Erased sectors: 89

Copying to FLASH...
Writing at address: 0x9F040000

Done!

DONE! Firmware upgraded!
nr500s>
```

7. Run command "reset" to reboot the router.