

AN-007-WUK

# How to upgrade the firmware on a DR and MR router

Upgrading the Firmware on a DR-250/260/270 & MR-210/250/260



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## Backup your config via Web interface

Westermo recommends that you make a backup of you current config before proceeding with the upgrade. Upgrading via the Web interface or USB upgrade will not affect your current running config, but a backup is still recommended in the event the upgrade is unsuccessful

← → ↻ 🏠 ⓘ 192.168.2.200/default.asp

**Administration - Backup/Restore**

Backup configuration to a file on your PC or server.

- Include passwords in the backup file.
- Include CA certificates in the backup file.
- Include certificates and keys in the backup file.
- Include MySQL database file in the backup file.
- Include routing protocol configuration files in the backup file.

**Backup**

Restore configuration from a file on your PC or server.

Restore From File:  No file chosen

Optional - If OSPF or Routing is configured on the router check this box too. If you are unsure, tick all the boxes.

backcfg (6).zip

Via the Web interface, log in and navigate to “Backup and restore”

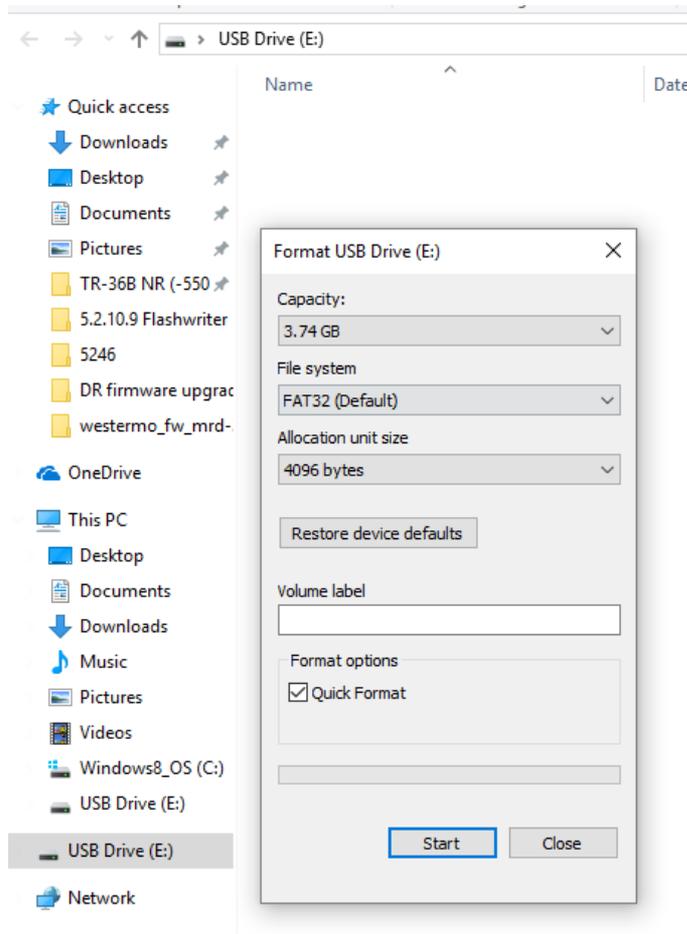
Tick ‘Include passwords in the backup file’

Click the “Backup” tab and the zip file will start to download

## Backup your config via USB

You can also make a backup of your router by using a USB stick. Format the USB drive to "FAT32".

Please contact your local Westermo office for the **autoexec.bat** file



Once the USB has been formatted, simply copy the **autoexec.bat** file to the USB drive and insert the USB drive to your router.

You will see the x3 "Signal" LEDs flash indicating the backup process. Once complete all the LEDs will flash, excluding the x3 "Signal" LEDs.

Remove USB and reboot router. Keep the backup files safe.

**Note:** Ensure that the following files are present before you continue with the firmware upgrade process:

- config.da0
- pwds.da0
- fw.txt
- ospf.conf (optional)



During backup only the x3 Signal LEDs will flash



Once complete all LEDs will flash excluding the x3 Signal LEDs indicating the backup is complete.

## Upgrading the Firmware

There are several methods by which new firmware can be loaded onto DR or MR routers: Web interface, FTP and USB flash drive.

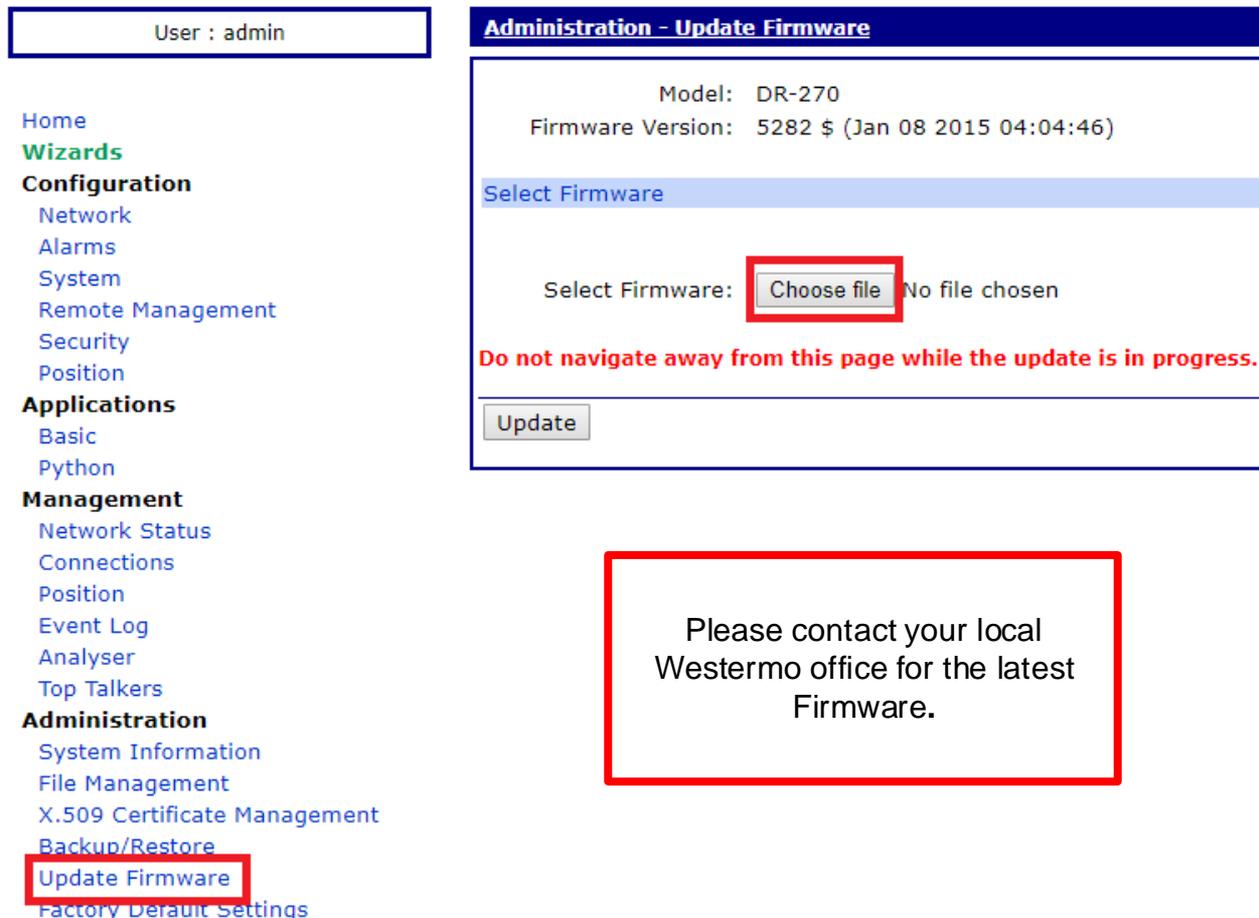
**Please Note:** Some older routers, (such as the DR-250), require specific firmware if they have a wireless WAN module fitted along side the ADSL/ VDSL. Please ensure that you request the correct router firmware from Westermo. Please see **Appendix A** (page 16) for more information.

### 1. Web interface method

The Web interface method of upgrading firmware can be used locally or remotely. It is available only in firmware versions 5.149 and later. The method involves clicking the "Update Firmware" option in the Web interface, browsing to a local or remote zip file containing the firmware, then clicking the "Update" button to start the automated update process. Only individual firmware files are replaced during the upgrade, so when a unit is upgraded via the Web interface method its current saved configuration will be retained. Please contact your local Westermo Office for latest Firmware.



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User : admin

**Administration - Update Firmware**

Model: DR-270  
Firmware Version: 5282 \$ (Jan 08 2015 04:04:46)

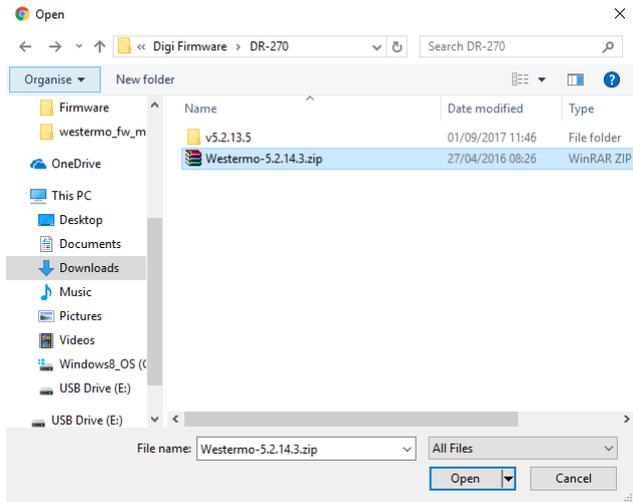
Select Firmware

Select Firmware:  No file chosen

**Do not navigate away from this page while the update is in progress.**

Home  
Wizards  
Configuration  
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Alarms  
System  
Remote Management  
Security  
Position  
Applications  
Basic  
Python  
Management  
Network Status  
Connections  
Position  
Event Log  
Analyser  
Top Talkers  
Administration  
System Information  
File Management  
X.509 Certificate Management  
Backup/Restore  
Update Firmware  
Factory Default Settings

Please contact your local Westermo office for the latest Firmware.



Select zip file location and click open



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User : admin

- Home
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- Administration**
  - System Information
  - File Management
  - X.509 Certificate Management
  - Backup/Restore
  - Update Firmware
  - Factory Default Settings
  - Execute a command
  - Save configuration
  - Reboot
  - Logout

**Administration - Update Firmware**

Model: DR-270  
 Firmware Version: 5282 \$ (Jan 08 2015 04:04:46)

Select Firmware

Select Firmware:  Westermo-5.2.14.3.zip

**Do not navigate away from this page while the update is in progress.**

Filename	Status	Transfer	CRC
image	Written to flash	100%	OK
boot.rom	Written to flash	100%	OK
mr270.web	Written to flash	100%	OK
fpga.rbf	Skipped unrecognised file		Not checked
logcodes.txt	Written to flash	100%	OK
privpy.enc	Written to flash	100%	OK
python.zip	Written to flash	100%	OK
wizards.zip	Written to flash	100%	OK

**Progress**

Firmware Update Started  
 Receiving ZIP file  
 Files successfully written to flash  
 Building update commands  
 Executing command "del image"  
 Executing command "ren rtr.dwn image"  
 Executing command "scan image"  
 Executing command "move sbios1 sbios"  
 Executing command "scan sbios"  
 Executing command "del \*.web"  
 Executing command "ren web.tmp mr270.web"  
 All update commands have been executed  
 Firmware Update ended

Firmware update complete. [Click here to reboot the unit.](#)

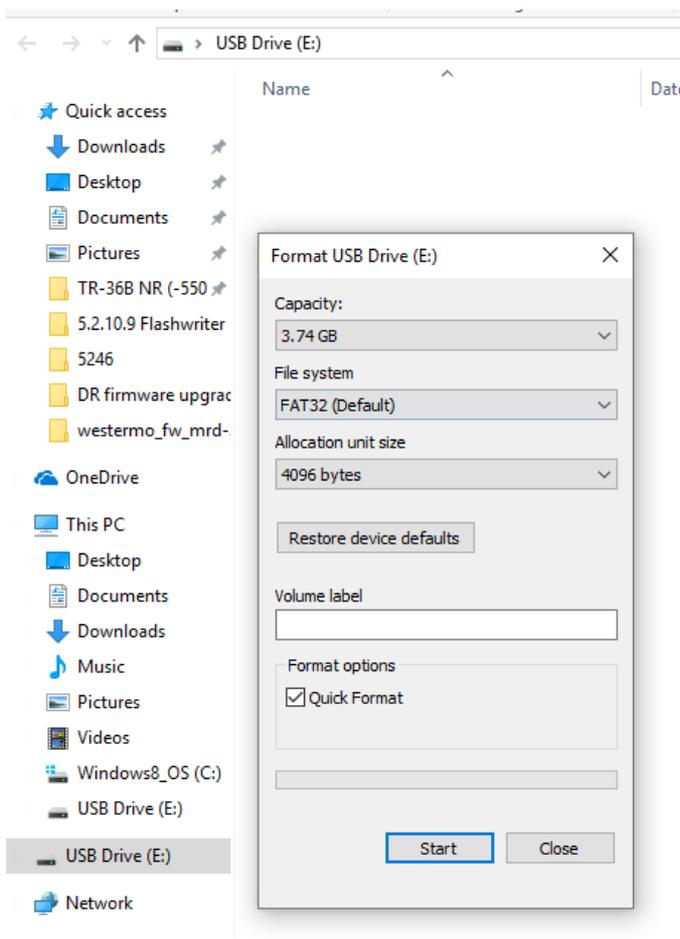
**Important:** If you see and “Bad CRC” messages in the CRC column, do NOT reboot the router. Instead try the upgrade again. If you continue to see Bad CRC’s then contact Technical Support at Westermo. Do not reboot or power off the router if “Bad CRC” is indicated. If all the files come back with “OK”, you may reboot the router.

## 2. USB flash upgrade method

The USB flash drive method of upgrading firmware can be used only locally. The USB flash drive method is especially useful for upgrading routers during a site visit. Once the USB drive is configured the update process involves simply inserting the USB drive into the front of the router, waiting for a few minutes for a flashing LED sequence to indicate that the upgrade is complete, removing the USB drive then rebooting the router (for example by power-cycling it).

**It is very important that the correct firmware files are used for the model number being upgraded. If you attempt to load firmware designed for one model onto a different model the router may cease to function and will be difficult to recover.**

Please contact your local Westermo office for the latest Firmware.



Right click on the drive icon in Windows and select “Format”. Ensure the file type is set to “FAT32”, select the “Quick format” option and then click on “Start”. Now the files can be copied to the USB stick

Plug the USB stick into the router and with router powered on, press the reset button twice in quick succession. Note the reset button is on the bottom of the router.

The signal LED's will flash to indicate that the upgrade is in progress and then after a minute or two (depending on router model) the other LED's will flash to show that the upgrade is complete



During the upgrade process only the x3 Signal LEDs will flash



Once complete all LEDs will flash excluding the x3 Signal LEDs indicating the backup is complete. Power cycle the router and the upgrade is complete.

### 3. FTP upgrade method

Upgrading the firmware by FTP will allow any existing configuration files on the router to be retained.

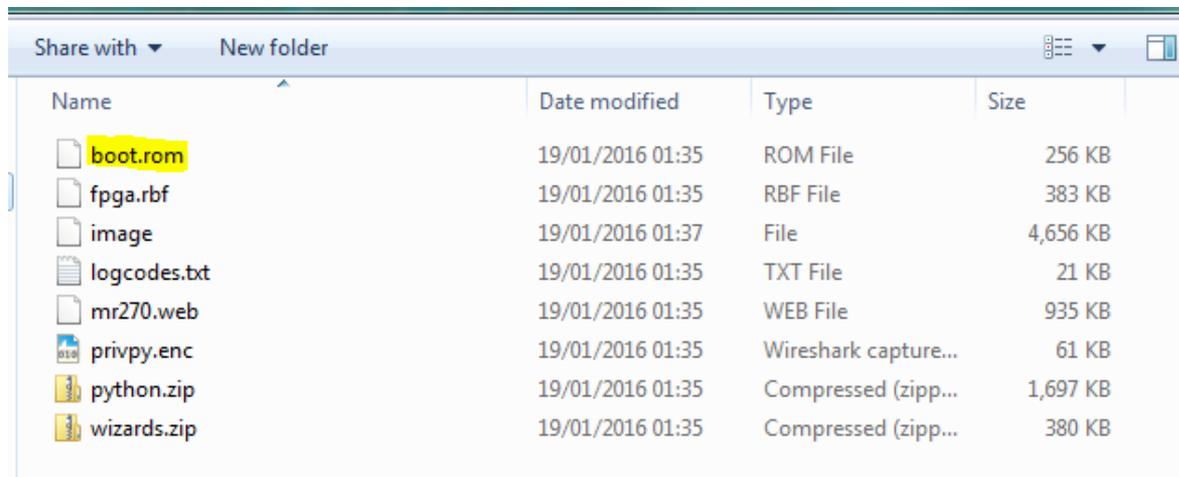
**It is very important that the correct firmware file is used for the model number being upgraded. If you attempt to load firmware designed for one model onto a different model the router may cease to function and will be difficult to recover.**

Please contact your local Westermo office for the latest Firmware.

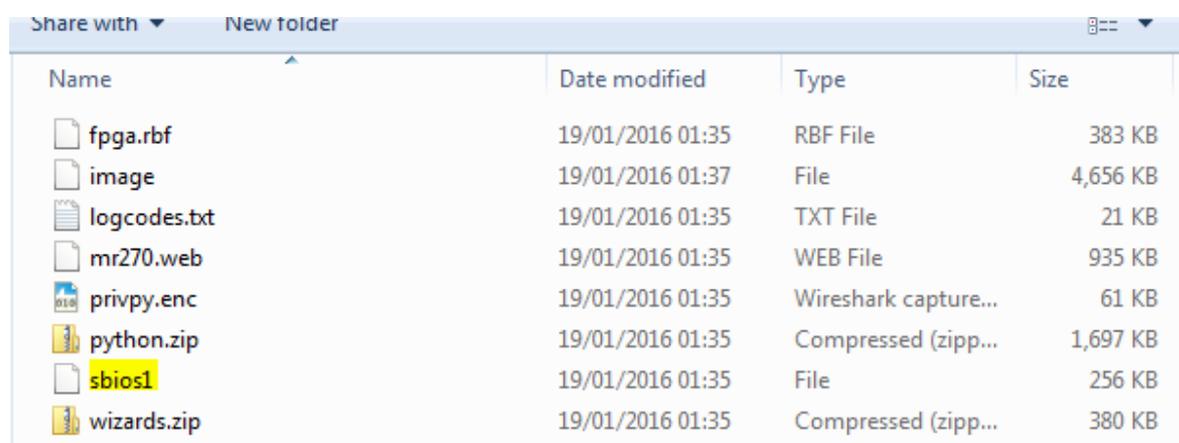
Extract all of the files, from the downloaded zip archive, to a directory on your PC.

1. Before you upload the firmware files, rename the **.rom** file to **sbios1** (no extension). This is the bootloader file. The router won't allow you to overwrite the bootloader of FTP. So it has to have a different name to the bootloader on the router (which is called **sbios**).

**NB:** It's not essential to rename it from the .rom file name but as the FTP upgrade requires you to overwrite the existing sbios with the new file using the filenames, there is less chance of typos if you rename the new file to sbios1 (A lot of the time it's already been renamed).

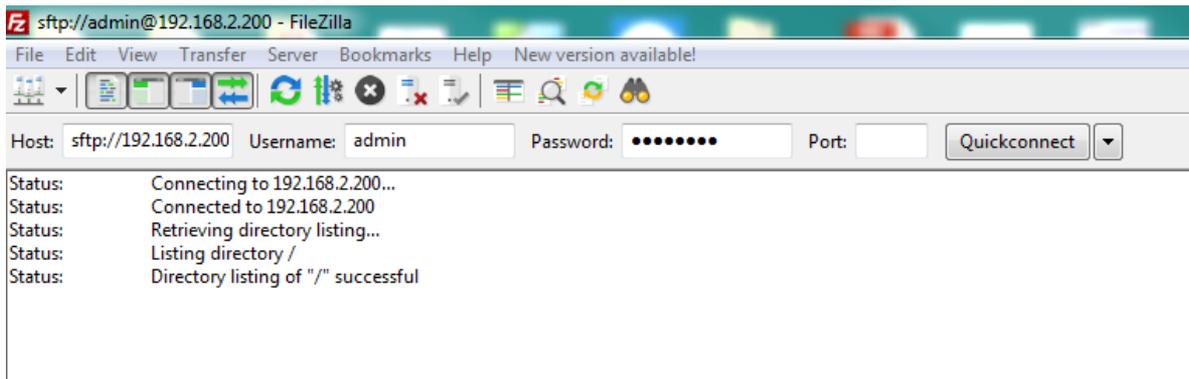


Name	Date modified	Type	Size
boot.rom	19/01/2016 01:35	ROM File	256 KB
fpga.rbf	19/01/2016 01:35	RBF File	383 KB
image	19/01/2016 01:37	File	4,656 KB
logcodes.txt	19/01/2016 01:35	TXT File	21 KB
mr270.web	19/01/2016 01:35	WEB File	935 KB
privpy.enc	19/01/2016 01:35	Wireshark capture...	61 KB
python.zip	19/01/2016 01:35	Compressed (zipp...	1,697 KB
wizards.zip	19/01/2016 01:35	Compressed (zipp...	380 KB

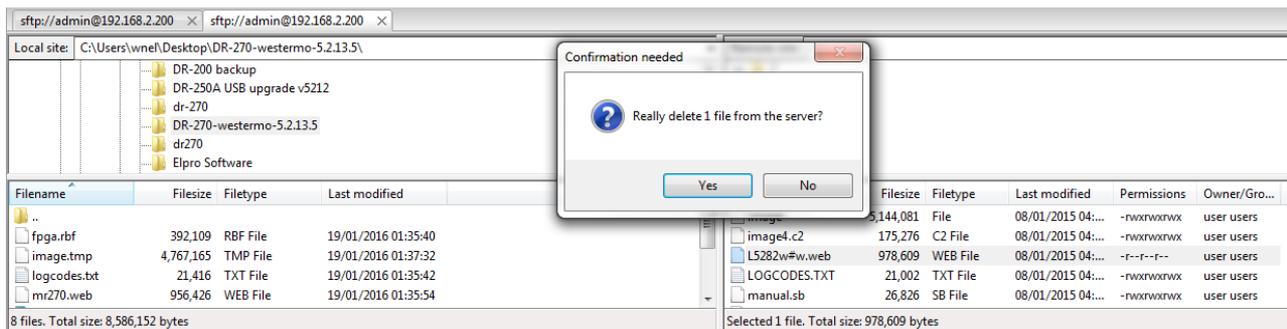


Name	Date modified	Type	Size
fpga.rbf	19/01/2016 01:35	RBF File	383 KB
image	19/01/2016 01:37	File	4,656 KB
logcodes.txt	19/01/2016 01:35	TXT File	21 KB
mr270.web	19/01/2016 01:35	WEB File	935 KB
privpy.enc	19/01/2016 01:35	Wireshark capture...	61 KB
python.zip	19/01/2016 01:35	Compressed (zipp...	1,697 KB
sbios1	19/01/2016 01:35	File	256 KB
wizards.zip	19/01/2016 01:35	Compressed (zipp...	380 KB

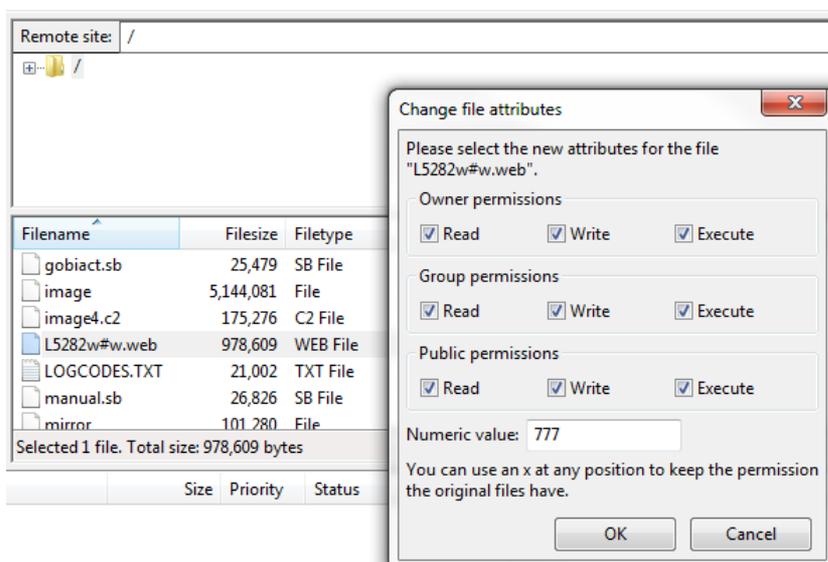
- Using an FTP client program such as FileZilla (<http://filezilla-project.org/>), create an FTP connection to the router.



- Now delete the \*.web (on the router) file by right clicking on the file and select “delete”.

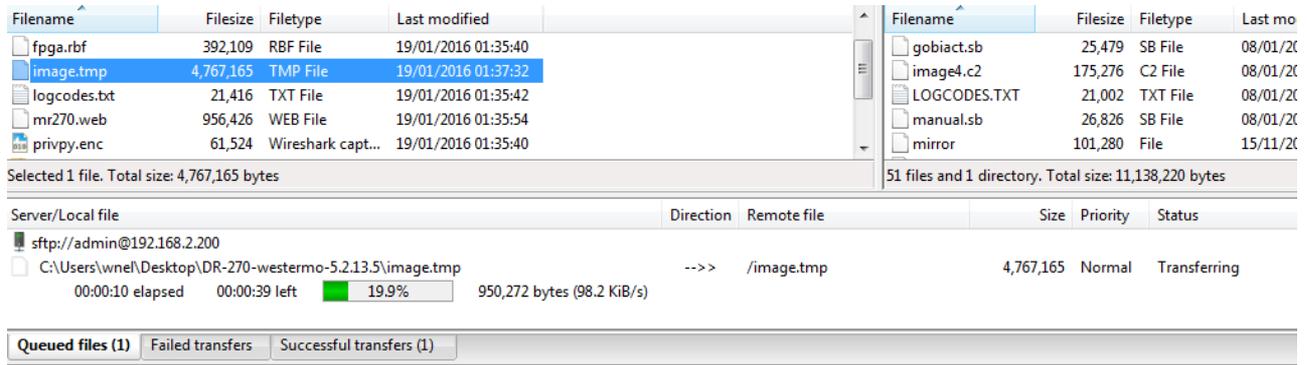


You may need to change the permissions on the file to allow you to delete the file. Right click on the file, select “permissions” and then tick all the “Write” check boxes.



If you are unable to change the file permissions in the FTP program, please log in via SSH or Telnet and run the command “`fattr -r *.web`” (\*.web being the current file eg L2582w#w.web)

- Now copy all of the files from the directory of files on your PC to the router. To avoid the possibility of the router running out of flash memory during the upgrade process, please only copy x1 file at a time. Note if using FileZilla you must go to Edit -> Settings -> Transfer and set the "Maximum Simultaneous transfers" to 1.



The screenshot shows the FileZilla interface with two panels. The left panel displays a local directory listing:

Filename	Filesize	Filetype	Last modified
fpga.rbf	392,109	RBF File	19/01/2016 01:35:40
image.tmp	4,767,165	TMP File	19/01/2016 01:37:32
logcodes.txt	21,416	TXT File	19/01/2016 01:35:42
mr270.web	956,426	WEB File	19/01/2016 01:35:54
privpy.enc	61,524	Wireshark capt...	19/01/2016 01:35:40

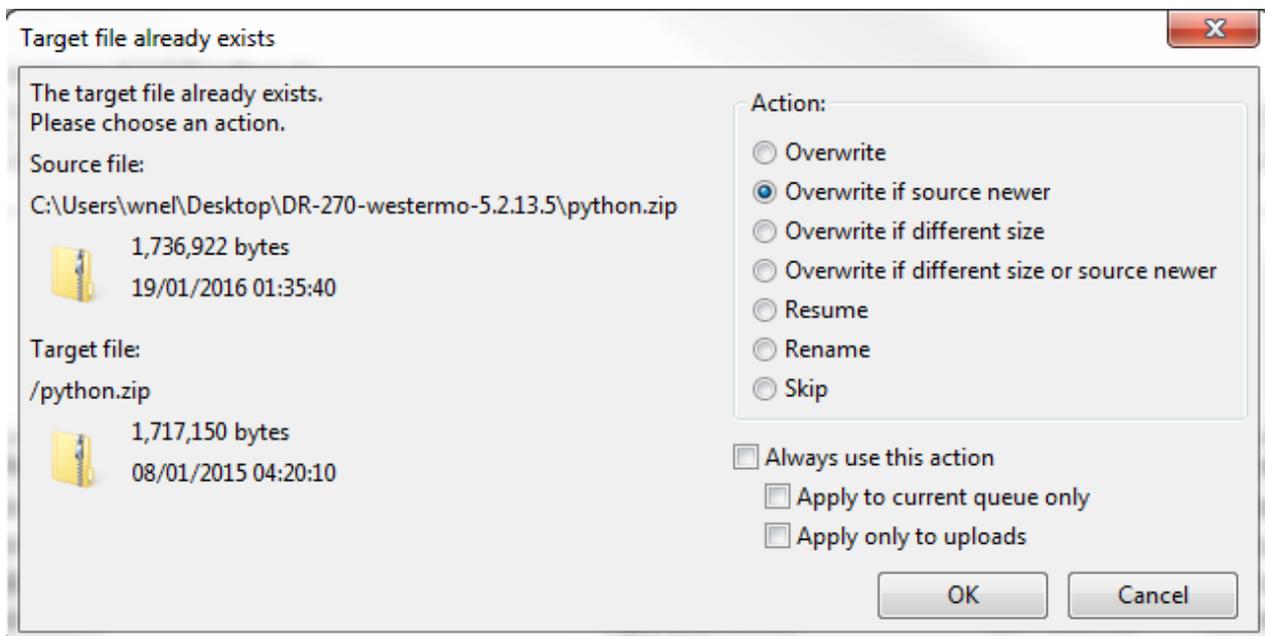
The right panel shows a remote directory listing:

Filename	Filesize	Filetype	Last mo
gobiact.sb	25,479	SB File	08/01/20
image4.c2	175,276	C2 File	08/01/20
LOGCODES.TXT	21,002	TXT File	08/01/20
manual.sb	26,826	SB File	08/01/20
mirror	101,280	File	15/11/20

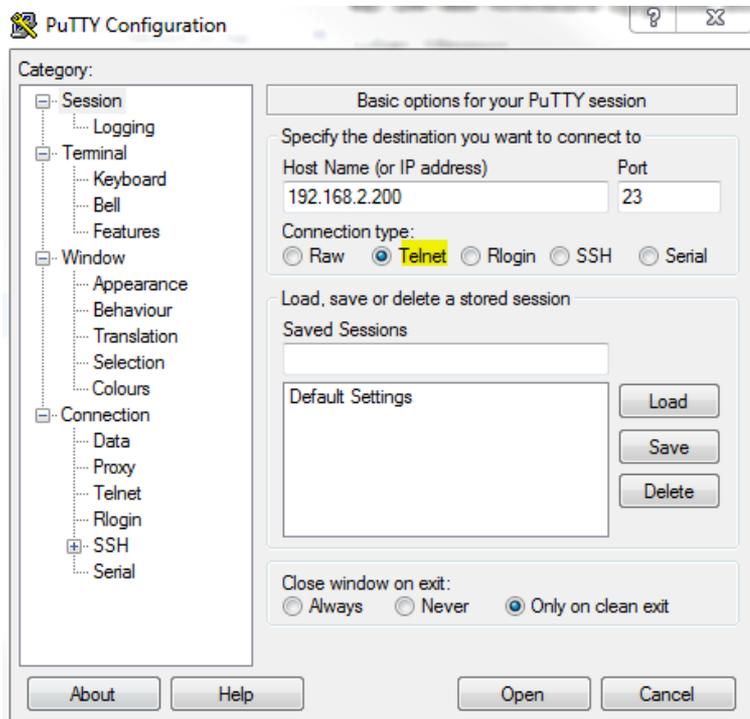
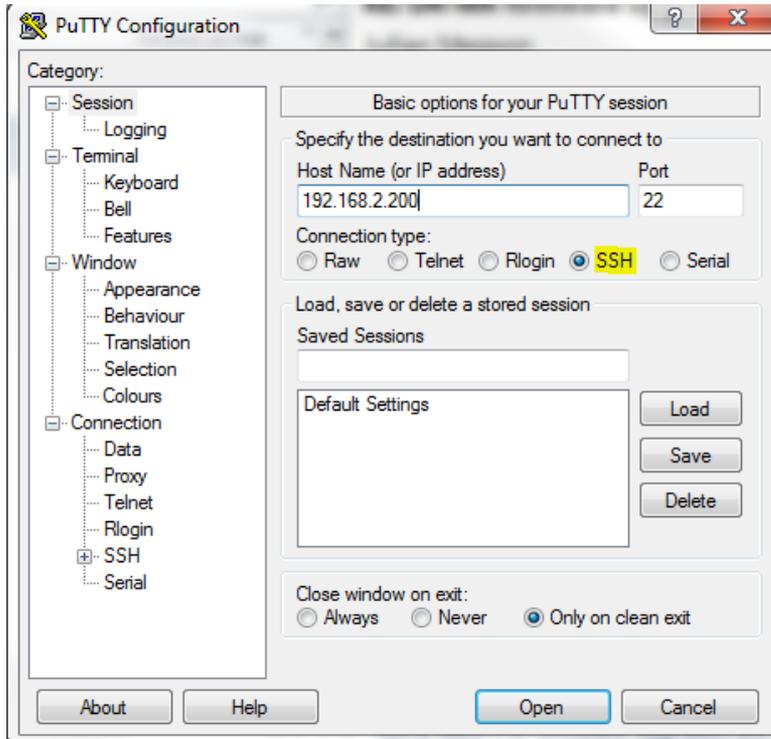
Below the panels, a progress bar shows the transfer of 'image.tmp' (4,767,165 bytes) to '/image.tmp' on the remote server. The progress is at 19.9% (950,272 bytes transferred at 98.2 KIB/s).

Simply drag and drop each file into the router directory. Wait for each file to complete before attempting to copy another file across.

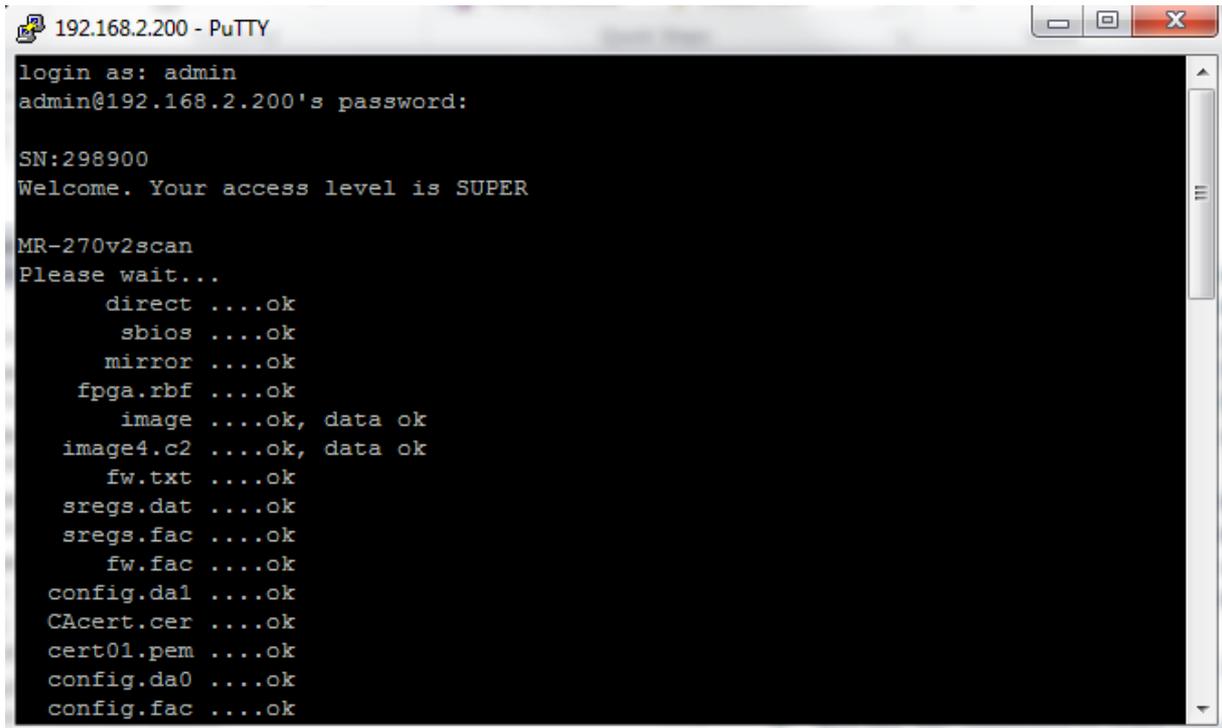
You may also be prompt with a message "Target file already exists". Please select "Overwrite if source newer" and click ok. The file/folder should now be replaced.



5. After the files have been uploaded, open a CLI session over Telnet or SSH to the router.

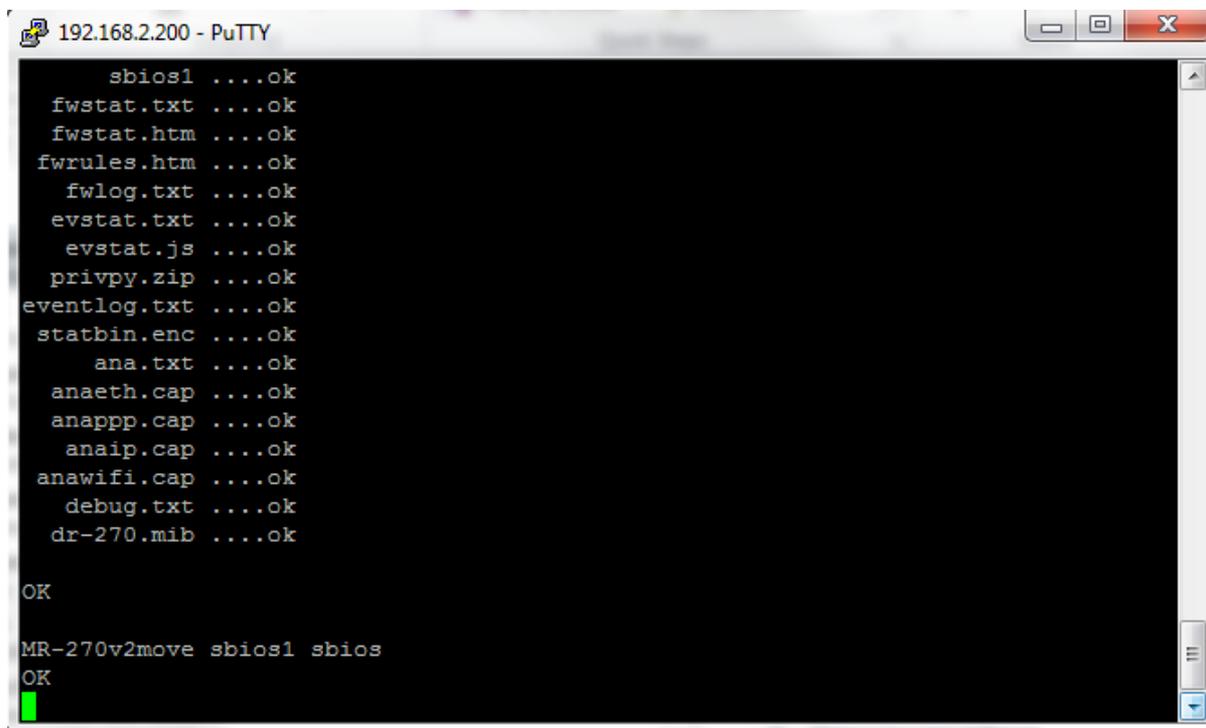


- Run the command 'scan'. This will check all files and indicate if any of the files have a **Bad CRC**. If there are any Bad CRC's, upload the relevant file again. If you continue to get **Bad CRC**'s then the file is corrupted and they will need to contact us. Do NOT reboot.



```
192.168.2.200 - PuTTY
login as: admin
admin@192.168.2.200's password:
SN:298900
Welcome. Your access level is SUPER
MR-270v2scan
Please wait...
    direct ....ok
    sbios ....ok
    mirror ....ok
    fpga.rbf ....ok
    image ....ok, data ok
    image4.c2 ....ok, data ok
    fw.txt ....ok
    sregs.dat ....ok
    sregs.fac ....ok
    fw.fac ....ok
    config.da1 ....ok
    CAcert.cer ....ok
    cert01.pem ....ok
    config.da0 ....ok
    config.fac ....ok
```

- If the Scan shows all the files are OK, Run the command 'move sbios1 sbios'.



```
192.168.2.200 - PuTTY
    sbios1 ....ok
    fwstat.txt ....ok
    fwstat.htm ....ok
    fwrules.htm ....ok
    fwlog.txt ....ok
    evstat.txt ....ok
    evstat.js ....ok
    privpy.zip ....ok
    eventlog.txt ....ok
    statbin.enc ....ok
    ana.txt ....ok
    anaeth.cap ....ok
    anappp.cap ....ok
    anaip.cap ....ok
    anawifi.cap ....ok
    debug.txt ....ok
    dr-270.mib ....ok
OK
MR-270v2move sbios1 sbios
OK
```

- Run the 'Dir' command to make sure that the sbios1 file is now called sbios (it should have the current date and time applied to it).

```

192.168.2.200 - PuTTY
OK
MR-270v2dir
  user      0 rod  14:44:00, 13 Sep 2017
  direct   101280 ros  17:09:19, 15 Nov 2013 CRC  ???
  sbios    262144 ros  14:41:38, 13 Sep 2017 CRC  f9ce
  mirror   101280 ros  17:09:19, 15 Nov 2013 CRC  ???
  fpga.rbf 392109 rws  14:29:57, 13 Sep 2017 CRC  934c
  image    4767165 rws  14:30:13, 13 Sep 2017 CRC  552b
  image4.c2 175276 rws  04:20:10, 08 Jan 2015 CRC  ca84
  fw.txt   1104 rws  17:09:19, 15 Nov 2013 CRC  99f1
  sregs.dat 4096 rws  17:09:19, 15 Nov 2013 CRC  08b2
  sregs.fac 4096 ros  17:09:19, 15 Nov 2013 CRC  08b2
  fw.fac   1104 ros  17:09:19, 15 Nov 2013 CRC  99f1
  config.da1 14811 rws  17:09:19, 15 Nov 2013 CRC  4b0d
  CAcert.cer 1371 rws  17:09:19, 15 Nov 2013 CRC  6764
  cert01.pem 3285 rws  17:09:19, 15 Nov 2013 CRC  5173
  config.da0 2273 rws  08:54:43, 11 Sep 2017 CRC  ea7a
  config.fac 13015 ros  17:09:19, 15 Nov 2013 CRC  c5ed
  manual.sb 26826 rws  04:20:10, 08 Jan 2015 CRC  0b0a
  logcodes.txt 21416 rws  14:30:24, 13 Sep 2017 CRC  4c2a
  activate.sb 33685 rws  04:20:10, 08 Jan 2015 CRC  a314
  prlupdate.sb 31523 rws  04:20:10, 08 Jan 2015 CRC  11be
  
```

Once all the files have been copied over successfully and there are no Bad CRC messages, please reboot the router.



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**Administration**

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**Administration - System Information**

Model:	DR-270
Ethernet 0 MAC Address:	00:04:2D:04:8F:94
Serial:	298900
Firmware Version:	5.2.13.5 (Jan 19 2016 02:37:02)
SBIOS Version:	7.56u
Build Version:	LW
HW Version:	2202a
CPU Utilization:	1% (Min: 1%, Max: 14%, Avg: 2%)
Up Time:	15 seconds
Date and Time:	13 Sep 2017 14:47:52
Total Memory:	65536 KB
Used Memory:	47362 KB
Free Memory:	18174 KB
Mobile Module:	GOBI UMTS
SW Opts:	0x140 0x0
SW Cnts:	5 0 0 0 4 0 244 0 0 17 0 0 0 0 0 0 0 0 0 0
Switch Mode:	Port Isolate

Log back into the router to verify the upgrade has been successful.

## List of Latest Firmware available

### DR-250A / DR-250A+3G / MR200 /MR-250

v5212

### DR-260

v5246

### DR270 / MR-260

V5.2.14.3

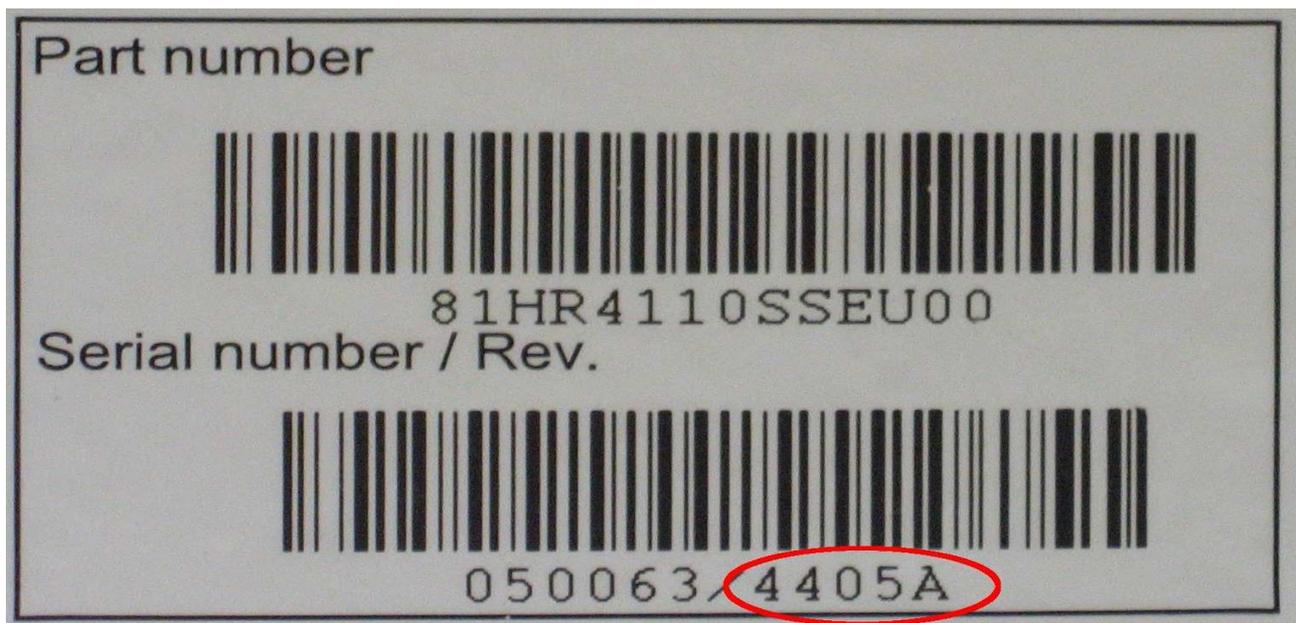
Please contact your local Westermo office for the latest Firmware.

## Appendix A - Determining 3G Router Firmware

3G MR-250 & DR-250 Only

### Introduction

Most of the MR-250 and DR-250H0A or DR-250HPA routers have the Novatel 3G wireless card installed. Since July 2008 these routers have also been supplied using Globetrotter 3G wireless cards. This change means different hardware which is shown on the product label but also different firmware and config files are required.



A or B - Novatel firmware required

C or E- Globetrotter firmware required

## **Software Commands**

It is always best to check from software for the actual type of installed card. There are many ways to check but these are the three main options:

- Power up the router and look at the Eventlog from the management web page or using the serial command 'type eventlog.txt' and within the text there will be a reference to either Novatel or Globetrotter
- Type the command 'modemstat ?' from either Execute a command in the management web page or using a serial connection and the Manufacturer will show either Novatel or Option N.V. for Globetrotter
- Type the command 'usb show' from either Execute a command in the management web page or using a serial connection and the type of card installed (Novatel or Globetrotter) will show on one of the USB connections.

Once the type of card has been determined then the correct firmware can be loaded. The firmware is clearly labelled as being for a Novatel or Globetrotter type of router.

## Config Files

There is a small difference between the way the Novatel and Globetrotter cards are configured and because of this it is not possible to take the config.fac, config.da0 or config.da1 files from a Novatel router and use them in a Globetrotter router or from Globetrotter into a Novatel router without making the change listed below in the routers config files:

MR-250 Novatel	MR-250 Globetrotter
<u>modemcc 0 info_asy_add 5</u>	<u>modemcc 0 info_asy_add 6</u>

DR-250 Novatel	DR-250 Globetrotter
<u>modemcc 0 info_asy_add 8</u>	<u>modemcc 0 info_asy_add 9</u>

## Revision history for version 1.0

Revision	Rev by	Revision note	Date
00			
01			
02			
03			
04			
05			
06			
07			



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**Other Offices**



*For complete contact information, please visit our website at [www.westermo.com/contact](http://www.westermo.com/contact) or scan the QR code with your mobile phone.*