

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





# Index

Contents	<u>Page</u>
Backup your config via Web interface	3
Backup your config via USB	4
Upgrading the Firmware	5
1. Web interface method	5
2. USB flash upgrade method	7
3. FTP upgrade method	9
List of Latest Firmware available	15
<b>Appendix A</b> - Determining 3G Router Firmware (MR/DR-250 Only)	16



## 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

← → C ☆ ① 192.168.2.200/default.asp



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".





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.

User : admin	Administration - Update Firmware
	Model: DR-270
Home	Firmware Version: 5282 \$ (Jan 08 2015 04:04:46)
Wizards	
Configuration	Select Firmware
Network	
Aldrins	
Remote Management	Select Firmware: Choose file No file chosen
Security	
Position	Do not navigate away from this page while the update is in progres
Applications	
Basic	Update
Python	
Management	
Network Status	
Connections	
Position	
Event Log	Please contact your local
Analyser	Westermo office for the latest
Top Talkers	Firmworo
Administration	Fiimwaie.
System Information	
File Management	
X.509 Certificate Management	
Backup/Restore	
Update Firmware	



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Firmware update complete. Click <u>here</u> 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.

Pleas	e contact your local Weste	ermo office for the latest Firmware.	
<ul> <li>← → · ↑ → USB I</li> <li>✓ Quick access</li> <li>✓ Downloads</li> <li>✓ Desktop</li> <li>✓ Documents</li> <li>✓ Pictures</li> <li>✓ TR-36B NR (-550 ×</li> <li>✓ 5.2.10.9 Flashwriter</li> <li>✓ 5246</li> <li>✓ DR firmware upgrace</li> </ul>	Drive (E:) Name Format USB Drive (E:) × Capacity: 3.74 GB × File system FAT32 (Default) ×	Date Right click on the drive Icon in Wir and select "Format". Ensure the fill type is set to "FAT32", select the "Quick format" option and then clic "Start". Now the files can be copied the USB stick	ndows e ck on d to
<ul> <li>westermo_tw_mrd-</li> <li>OneDrive</li> <li>This PC</li> <li>Desktop</li> <li>Documents</li> <li>Downloads</li> <li>Music</li> <li>Pictures</li> <li>Videos</li> <li>Windows8_OS (C:)</li> <li>USB Drive (E:)</li> <li>USB Drive (E:)</li> <li>Network</li> </ul>	Allocation unit size 4096 bytes  Restore device defaults  Volume label  Format options  Quick Format  Start  Close	Plug the USB stick into the router with router powered on, press the button twice in quick succession. In the reset button is on the bottom or router.	and reset Note of the



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).

Share with 🔻 New folder			·= • 🔳
Name	Date modified	Туре	Size
<b>boot.rom</b>	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
imr270.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
Share with   New folder			:== ▼
Name	Date modified	Туре	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
imr270.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

www.westermo.com



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

🔁 sft	sftp://admin@192.168.2.200 - FileZilla	_
File	e Edit View Transfer Server Bookmarks Help New version available!	
<u>111</u> -	- 1 - 2 - 4 - 4	
Host:	t: sftp://192.168.2.200 Username: admin Password: •••••• Port: Quickcon	nect 💌
Status:	us: Connecting to 192.168.2.200	
Status	us: Connected to 192.168.2.200	
Status	us: Retrieving directory listing	
Status:	us: Listing directory /	
Status:	us: Directory listing of "/" successful	

3. Now delete the \*.web (on the router) file by right clicking on the file and select "delete".

sftp://admin@192.16	sftp://admin@192.168.2.200 × sftp://admin@192.168.2.200 ×							
Local site: C:\Users\wnel\Desktop\DR-270-westermo-5.2.13.5\								
		212						
			Really delete 1 file from the server?					
	DR-270-westermo-5.2.13.5							
	Ipro Software							
Filename	Filesize Filetype	Last modified	Yes No Filesize Filetype Last modified Permissions	Owner/Gro				
퉬			5,144,081 File 08/01/2015 04:rwxrwxrwx	user users				
fpga.rbf	392,109 RBF File	19/01/2016 01:35:40	image4.c2 175,276 C2 File 08/01/2015 04:rwxrwxrwx	user users				
image.tmp	4,767,165 TMP File	19/01/2016 01:37:32	L5282w#w.web 978,609 WEB File 08/01/2015 04:rr	user users				
📄 logcodes.txt	21,416 TXT File	19/01/2016 01:35:42	LOGCODES.TXT 21,002 TXT File 08/01/2015 04: rwxrwxrwx	user users				
mr270.web	956,426 WEB File	19/01/2016 01:35:54	← manual.sb 26,826 SB File 08/01/2015 04:rwxrwxrwx	user users				
8 files. Total size: 8,586	,152 bytes		Selected 1 file. Total size: 978,609 bytes					

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.

Remote site: /			
±]] /			
			Change file attributes
			Please select the new attributes for the file "L5282w#w.web". Owner permissions
Filename	Filesize	Filetype	Read Write Execute
gobiact.sb image image4.c2	25,479 5,144,081 175,276	SB File File C2 File	Group permissions     Image: Constraint of the second s
L5282w#w.web	978,609 21,002 26,826	WEB File TXT File SB File	Public permissions     Image: Write   Image: Write
Selected 1 file. Total si	101 280 ize: 978,609 byt	File	Numeric value: 777
	Size Priority	Status	You can use an x at any position to keep the permission the original files have.
			OK Cancel

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)



4. 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.

Filename	Filesize	Filetype	Last modified				*	Filename		Filesize	Filetype	Last mo
fpga.rbf	392,109	RBF File	19/01/2016 01:35	:40				gobiact.sb		25,479	SB File	08/01/20
image.tmp	4,767,165	TMP File	19/01/2016 01:37	:32			Ξ	image4.c2		175,276	C2 File	08/01/20
📄 logcodes.txt	21,416	TXT File	19/01/2016 01:35	:42				LOGCODES.TXT		21,002	TXT File	08/01/20
mr270.web	956,426	WEB File	19/01/2016 01:35	:54				manual.sb		26,826	SB File	08/01/20
🚠 privpy.enc	61,524	Wireshark capt	19/01/2016 01:35	:40			-	mirror		101,280	File	15/11/20
Selected 1 file. Total si	ze: 4,767,165 by	/tes						51 files and 1 directo	ry. Tot	al size: 11	,138,220 bytes	
Server/Local file					Direction	Remote file			Size	Priority	Status	
💂 sftp://admin@192.	.168.2.200											
C:\Users\wnel\De	sktop\DR-270-	westermo-5.2.13.5\	image.tmp		>>	/image.tmp		4,70	57,165	Normal	Transferrin	9
00:00:10 elap	osed 00:00:	39 left 📃 19	9% 950,	272 bytes (98.2 KiB/s)								
Queued files (1) F	ailed transfers	Successful trans	fers (1)									

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.

Target file already exists	×
The target file already exists. Please choose an action. Source file: C:\Users\wnel\Desktop\DR-270-westermo-5.2.13.5\python.zip 1,736,922 bytes 19/01/2016 01:35:40 Target file: (or the proio	Action: Overwrite Overwrite if source newer Overwrite if different size Overwrite if different size or source newer Resume Rename
1,717,150 bytes 08/01/2015 04:20:10	<ul> <li>Always use this action</li> <li>Apply to current queue only</li> <li>Apply only to uploads</li> <li>OK Cancel</li> </ul>



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

PuTTY Configuration	8 ×
Category:	
Session	Basic options for your PuTTY session
Logging     Terminal     Keyboard     Bell     Features     Window     Appearance     Behaviour     Translation     Colours     Connection     Data     Proxy     Telnet     Rlogin     SSH     SSH     Serial	Specify the destination you want to connect to Host Name (or IP address) Port 192 168 2 2001 22
	Connection type: Raw Telnet Rlogin SSH Serial
	Load, save or delete a stored session Saved Sessions
	Default Settings Load Save Delete
	Close window on exit:
About Help	Open Cancel





6. 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	x
login as: admin admin@192.168.2.200's password:	
SN:298900	
Welcome. Your access level is SUPER	=
MR-270v2scan	
Please wait	
directok	
sbiosok	
mirrorok	
fpga.rbfok	
imageok, data ok	
image4.c2ok, data ok	
fw.txtok	
sregs.datok	
sregs.facok	
fw.facok	
config.da1ok	
CAcert.cerok	
cert01.pemok	
config.da0ok	
config.facok	-

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

🛃 192.168.2.200 -	PuTTY					X
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	oĸ					
OF						
OK						
MR-270v2move	sbios1 s	bios				-
OK	0,2002 0					-
						-



8. 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	-			-			1	x
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,	80	Jan	2015	CRC	ca84		
fw.txt	1104 rws	17:09:19,	15	Nov	2013	CRC	99f1		
<pre>sregs.dat</pre>	4096 rws	17:09:19,	15	Nov	2013	CRC	08b2		
<pre>sregs.fac</pre>	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,	80	Jan	2015	CRC	0b0a		
logcodes.txt	21416 rws	14:30:24,	13	Sep	2017	CRC	4c2a		
activate.sb	33685 rws	04:20:10,	80	Jan	2015	CRC	a314		
prlupdate.sb	31523 rws	04:20:10,	80	Jan	2015	CRC	11be		

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



Robust Industrial Data Communications - Made Easy

User : admin	Administration - System 1	Administration - System Information				
	Model:	DR-270				
Home	Ethernet 0 MAC Address:	00:04:2D:04:8F:94				
Wizards	Serial:	298900				
Configuration						
Network	Firmware Version:	5.2.13.5 (Jan 19 2016 02:37:02)				
Alarms	SBIOS Version:	7.56u				
System	Build Version:	LW				
Remote Management	HW Version:	2202a				
Security						
Position	CPU Utilization:	1% (Min: 1%, Max: 14%, Avg: 2%)				
Applications	Up Time:	15 seconds				
Basic	Date and Time:	13 Sep 2017 14:47:52				
Python	Total Memory:	65536 KB				
Management	Used Memory:	47362 KB				
Network Status	Free Memory:	18174 KB				
Connections	free fieldory.	1017 110				
Position	Mobile Module:	GOBLUMTS				
Event Log	SW Onts:	0x140.0x0				
Analyser	SW Opts:					
Top Talkers	Switch Mode	Port Isolate				
Administration	Switch Mode.	FULTSUALE				
System Information	Refresh					
File Management	- Kon Con					

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



## List of Latest Firmware available

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

v5212

<u>DR-260</u>

v5246

## DR270 / MR-260

V5.2.14.3

Please contact your local Westermo office for the latest Firmware.

www.westermo.com



## 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
modemcc 0 info_asy_add 5	modemcc 0 info_asy_add 6

DR-250 Novatel	DR-250 Globetrotter
modemcc 0 info_asy_add 8	modemcc 0 info_asy_add 9



# **Revision history for version 1.0**

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





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