

TECH NOTE 002

WeOS Upgrade

The comprehensive guide



Table of Contents

Aim	3
<i>Introduction</i>	3
The WeOS Firmware	4
<i>The .pkg File</i>	4
<i>All WeOS Feature Releases so far in Chronological Order</i>	4
1. Determining Firmware Versions	5
2. Choose Upgrade Procedure	6
<i>WEB Upgrade Using CGI</i>	7
<i>WEB Upgrade Using FTP/TFTP</i>	8
<i>Notes on Upgrading from CLI</i>	9
<i>CLI Upgrade Using FTP/TFTP</i>	10
<i>CLI Upgrade Using USB</i>	11
3. Multiple Version Upgrade Procedures	12
<i>Multiple Version Upgrade with Factory Default Configuration</i>	12
<i>Multiple Version Upgrade Keeping the Configuration</i>	13
Upgrading Early RedFox Units Using WeOS 4.0.0	14
Boot Loader Upgrade	15
Downgrade	16
Insufficient RAM-memory for Upgrade	17
Appendix	18
<i>Setting up a TFTP Server</i>	18
<i>Configuration Saving</i>	19
<i>Save the Configuration from the CLI</i>	19
<i>Save the Configuration from the WEB Interface</i>	19
<i>Configuration Backup</i>	20
<i>Backup the Configuration from the WEB Interface</i>	20
<i>Backup the Configuration from the CLI</i>	20
<i>Configuration Restore</i>	21
<i>Restore the Configuration from the WEB Interface</i>	21
<i>Restore the Configuration from the CLI</i>	21
<i>Factory Reset</i>	22
<i>Factory Reset from the CLI</i>	22
<i>Factory Reset from the WEB Interface</i>	22

Aim

This document will handle all types of upgrade procedures supported by WeOS and how to correctly execute an upgrade based on different scenarios.

Introduction

The Westermo Operating System (WeOS) was first released in 2009 with version 4.0.0. Fifteen feature releases later and with a whole lot of new functionality added since then, it becomes more important to know how to correctly upgrade WeOS units to ensure proper configuration functionality between the releases.

WeOS are able to support configuration syntax changes from one feature release to the next. This is so that the old syntax from the previous release can be parsed correctly into the new release. In this way a WeOS unit can be upgraded one step without having to be reconfigured after the upgrade.

For example when upgrading from 4.12.1 to 4.13.4 no reconfiguration of the unit is needed for configuration compatibility between the firmware versions.

A feature release is defined by the figure in the middle of the version number e.g. 4.6.x, 4.12.x, 4.13.x etc. See the full list of all WeOS feature releases on the next page. No special considerations concerning the configuration compability needs to be taken when upgrading within a feature release e.g. 4.13.1 to 4.13.4.

Taking into account the above information precautions are needed if an upgrade has to be made in more than one step and at the same time keep the configuration intact e.g. upgrading from 4.8.2 to 4.13.4. This procedure is described in detail in the Multiple Version Upgrade chapter.

Boot loader upgrades are an exception to this as it can be upgraded more than one step at the time, read more about this in the Boot Loader Upgrade chapter.

Downgrading the firmware is generally not recommended but sometimes it might be necessary and how to do this is described in the Downgrade chapter.

In the Appendix section the procedures associated with upgrade process are described.

The first part of the document will describe how to make proper preparations for the upgrade and the different ways an upgrade can be executed in WeOS.

Please Note! Always look through the Release Notes, it will describe the new features, fixed issues and known issues of a firmware release. Any problem reporting should be based on the latest official WeOS release.

All examples and screen dumps in this document are made with WeOS version 4.13.4.

The WeOS Firmware

The latest firmware release is available from the Westermo homepage at www.westermo.com

Also all previously released versions are available here in the history files.

The .pkg File

Before WeOS version 4.13.x all firmware files were distributed as separate .img and .bin files.

The .img is the WeOS firmware file and the .bin file is the boot loader firmware.

All WeOS product groups had its own set of these files named after its group.

RedFox:	rwXXXX.img	xscale-redboot-YYY.bin
Lynx and Viper:	lwXXXX.img	imx27-redboot-ZZZ.bin
Wolverine:	wwXXXX.img	imx27-redboot-ZZZ.bin
Falcon:	fwXXXX.img	imx27-redboot-ZZZ.bin

From WeOS 4.13.x this was changed to a unified file containing all the WeOS product's firmware and boot loader images. It does not matter if there is a boot loader upgrade or a firmware upgrade that needs to be done, only one file is needed, the .pkg file.

When upgrading from a firmware version previous to 4.13.x to versions above 4.13.x there always have to be an intermediate step to 4.13.x to turn the upgrade procedure to the .pkg type of upgrade. See the Multiple Version Upgrade section for more details.

The upgrade procedure is the same no matter if it is done with .img, .bin or a .pkg file.

Always upgrade to the latest patch release available also when upgrading multiple firmware steps, see the list below.

All WeOS Feature Releases so far in Chronological Order

- | | |
|---------------------------------|------------------------|
| 00) 4.0.0 .img | 14) 4.14.2 .pkg |
| 01) customer specific release | 15) 4.15.3 .pkg |
| 02) 4.2.1 .img | 16) 4.16.0 .pkg |
| 03) 4.3.0 .img | 17) 4.17.1 .pkg |
| 04) 4.4.0 .img | 18) 4.18.1 .pkg |
| 05) 4.5.1 .img | 19) 4.19.2 .pkg |
| 06) 4.6.2 .img | 20) 4.20.0 .pkg |
| 07) customer specific release | |
| 08) 4.8.2 .img | |
| 09) 4.9.2 .img | |
| 10) customer specific release | |
| 11) 4.11.2 .img | |
| 12) 4.12.1 .img | |
| 13) 4.13.4 .img and .pkg | |

1. Determining Firmware Versions

WeOS have a primary and a backup firmware and also a boot loader firmware, which is handled later in the Boot Loader Upgrade chapter.

The primary firmware contains the main system software which is used by the switch at normal startup.

The backup firmware is loaded in case an error (such as a check-sum error) occurs while loading the primary firmware.

Please Note! It is strongly recommended to use the same version on both the primary and backup firmware. This is to ensure the same interpretation of the configuration file if a failover to the backup firmware is needed.

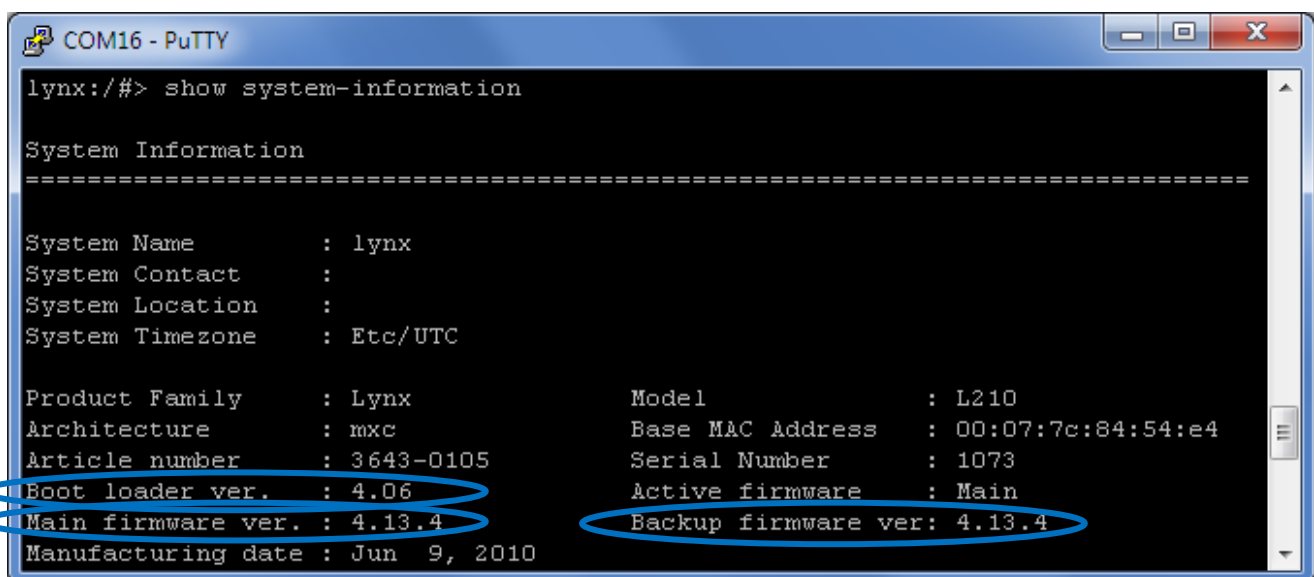
The firmware versions used by the switch can be seen in the WEB interface by going to Status -> System -> Details:



Lynx v4.13.4 | lynx@

System	
Hostname	lynx
Location	
Contact	
Uptime	0 days, 0 hours, 0 minutes, 33 seconds
Base Mac Address	00:07:7c:84:54:e4
System Default Gateway Address	N/A
Article Number	3643-0105
Main Firmware Version	4.13.4
Build Details	\\ Westermo WeOS v4.13.4 4.13.4 -- Jan 17 11:54 CET 2014
Backup Firmware Version	4.13.4
Boot Loader Version	4.06

and in the CLI using the `show system-information` command:



```
lynx:/#> show system-information

System Information
=====
System Name       : lynx
System Contact    :
System Location   :
System Timezone   : Etc/UTC

Product Family    : Lynx           Model       : L210
Architecture      : mxc           Base MAC Address : 00:07:7c:84:54:e4
Article number    : 3643-0105      Serial Number  : 1073
Boot loader ver.  : 4.06           Active firmware : Main
Main firmware ver. : 4.13.4       Backup firmware ver: 4.13.4
Manufacturing date : Jun 9, 2010
```

2. Choose Upgrade Procedure

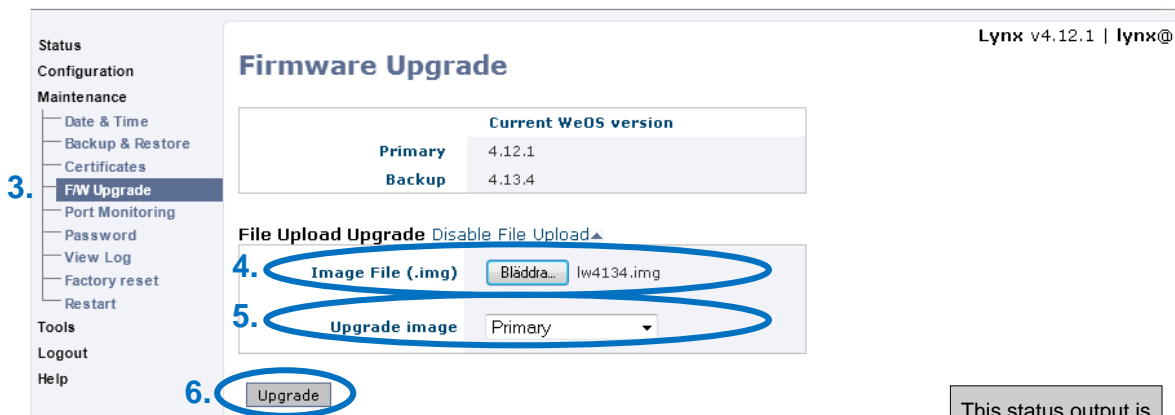
WeOS can be upgraded from the CLI and from the WEB interface using FTP or TFTP. WEB interface upgrade also allows for CGI upload from the WEB browser directly so no external FTP or TFTP servers are needed. A USB upgrade is also supported from the CLI.

WEB Upgrade Using CGI

Upgrading from the WEB interface using CGI does not require any additional measures as long as the WEB interface can be reached for configuration.

To upgrade using WEB and CGI upload use these steps:

- 1) Make a backup copy of the configuration, see appendix for instructions.
- 2) Do this procedure first for the Backup firmware, then for the Primary firmware.
- 3) Go to Maintenance -> F/W Upgrade -> and click Enable File Upload.
- 4) Choose the firmware file to upgrade to.
- 5) State if it is the Backup or Primary firmware that should be upgraded.
- 6) Start the upgrade by clicking the Upgrade button.
- 7) After the upgrade has completed it is possible to verify that the correct firmware version is active by going to Status -> System -> Details, see the chapter Determining Firmware Versions
- 8) Complete the process by saving the configuration, see appendix for instructions.



Flashing!

Wait until flashing is finished.

```
Checking cgi_upload.76X227 ...
Type: CramFS
ID: OK (Lnx2)
Size: OK
CRC: OK 0xDC73D8CD
Flashing currently active MTD partition, reboot is forced.
Flashing /dev/mtd1 ...
.....
.....
.....
.....
.....
.....
.....
.....
.....
Updating RedBoot directory with new CRC ...
.....
```

Flashing completed OK!

Rebooting

Wait 15 seconds, then go to the [startpage](#) if not redirected.

This status output is from the pre 4.13.x releases.

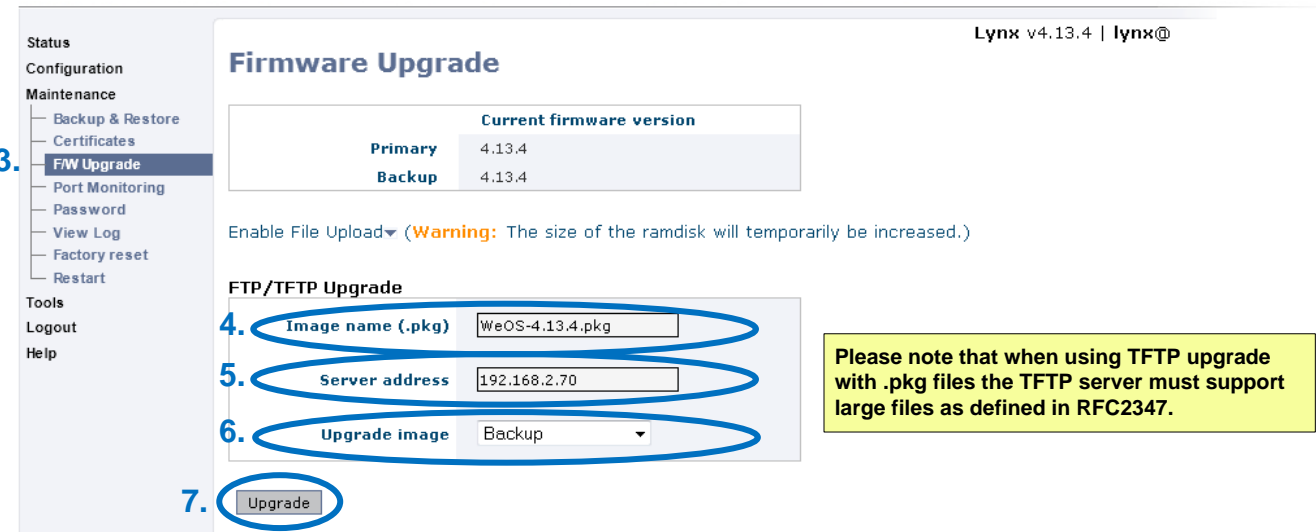
After the upgrade has finished successfully the WeOS unit will reboot.

WEB Upgrade Using FTP/TFTP

When upgrading from a FTP/TFTP server the WeOS unit will download its firmware file from the server, so any firewalls or routers in the path must allow this traffic to pass.

To FTP/TFTP upgrade from the WEB follow these steps:

- 1) Make a backup copy of the configuration, see appendix for instructions.
- 2) Do this procedure first for the Backup firmware, then for the Primary firmware.
- 3) Go to Maintenance -> F/W Upgrade -> FTP/TFTP Upgrade.
- 4) Add the firmware file to be downloaded for the upgrade.
- 5) State the IP-address of the FTP or TFTP server used.
- 6) Choose if it is the Backup or Primary firmware that shall be upgraded.
- 7) Click the Upgrade button to start upgrading.
- 8) After the upgrade has completed it is possible to verify that the correct firmware version is active by going to Status -> System -> Details, see the chapter Determining Firmware Versions
- 9) Complete the process by saving the configuration, see appendix for instructions.



3. F/W Upgrade

4. Image name (.pkg) WeOS-4.13.4.pkg

5. Server address 192.168.2.70

6. Upgrade image Backup

7. Upgrade

Please note that when using TFTP upgrade with .pkg files the TFTP server must support large files as defined in RFC2347.

Flashing!

Wait until flashing is finished.

```
Connecting to 192.168.2.70:21 (192.168.2.70:21)
wget: can't connect to remote host (192.168.2.70): Connection refused
Failed FTP download, trying TFTP ...
Connecting to 192.168.2.70 (192.168.2.70:69)
WeOS-4.13.4.pkg:
```

```
0% 25% 50% 75% 100%
|-----+-----+-----+-----|
|=====|
```

Checking download ...

```
Checking lw4134.img ...
Type: CramFS
ID: OK (Lnx2)
Size: OK
CRC: OK 0xDC73D8CD
```

```
Flashing /dev/mtd2 ...
0% 25% 50% 75% 100%
|-----+-----+-----+-----|
|=====|
```

```
Updating RedBoot directory with new CRC ...
0% 25% 50% 75% 100%
|-----+-----+-----+-----|
|=====|
```

Done.
Unpacking weos (from /upgrade/download)...

Setting up weos (4.13.4-1)...

Rebooting

Wait 26 seconds, then go to the [startpage](#) if not redirected.

The WeOS unit will first try FTP and then TFTP if no FTP server is available.

This status output is from the 4.13 release.

After the upgrade has finished successfully the WeOS unit will reboot.

Notes on Upgrading from the CLI

There are three possible ways to upgrade the firmware from the CLI, by using FTP, TFTP or USB and they all use the upgrade command:

```
upgrade <pri|sec|boot> <[URI://][ADDRESS[:PORT]]/FILE | ADDRESS FILE>
```

For more detailed information about this command use *help upgrade* from the CLI prompt.

When upgrading from the CLI several upgrades can be made before a reboot is forced. This is different from the WEB upgrade where a reboot is forced after each upgrade performed.

When upgrading in the sequential order described below the unit will not reboot until the Primary firmware is upgraded.

Please Note! That the output from *show system-information* will not show any changes until a reboot is made.

Please Note! In the CLI the Backup firmware is named Secondary firmware.

- 1) Upgrade the Boot loader firmware if necessary, see the Boot Loader Upgrade chapter first!
- 2) Upgrade the Backup (secondary) firmware.
- 3) Upgrade the Primary firmware and a reboot will follow this command.

CLI Upgrade Using FTP/TFTP

When upgrading from a FTP or TFTP server the WeOS unit will download its firmware file from the server, so any firewalls or routers in the path must allow this traffic to pass.

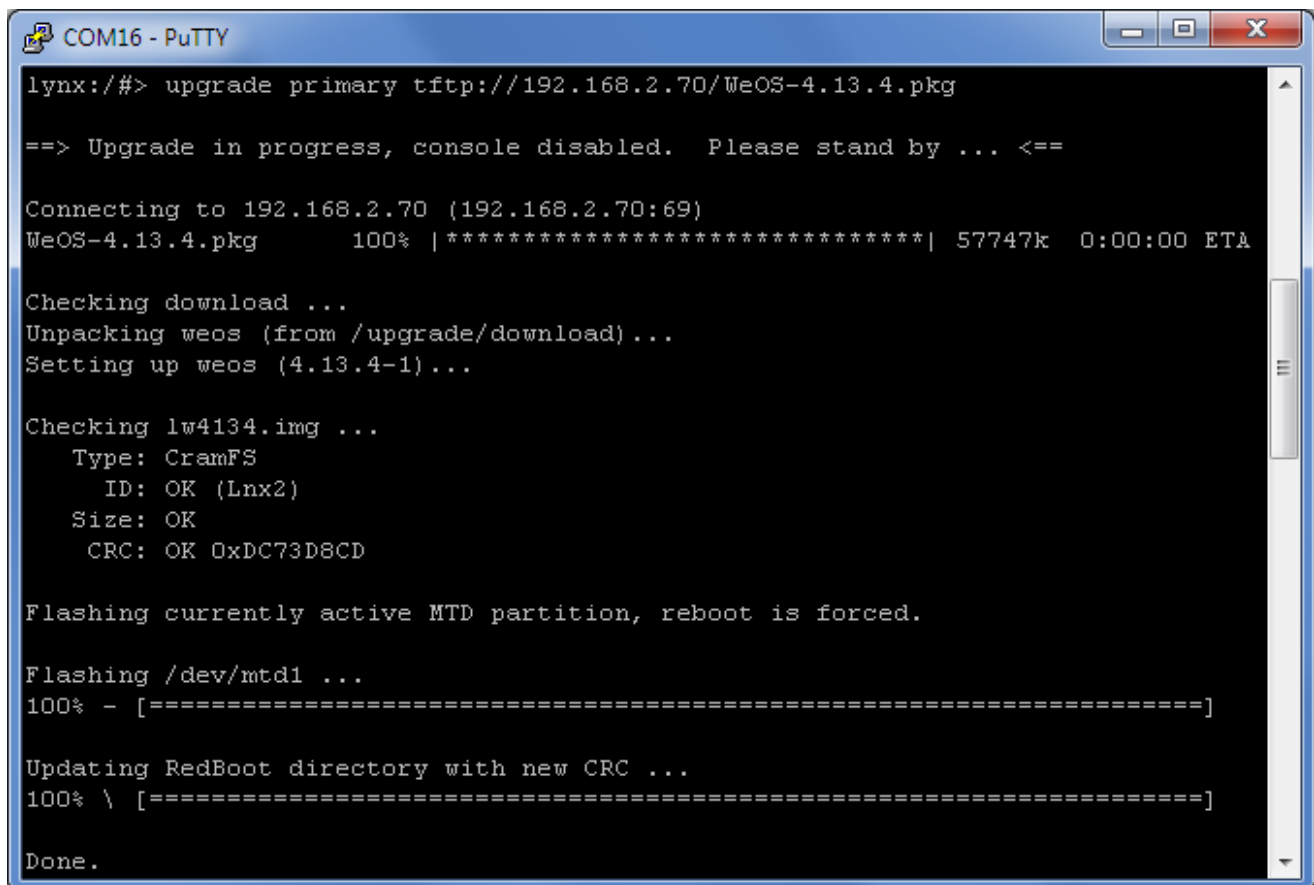
Execute the FTP/TFTP upgrade using these steps:

- 1) Make a backup copy of the configuration, see appendix for instructions.
- 2) Make sure the FTP/TFTP server is ready, see appendix for tftp instructions.
- 3) Execute the upgrade command for the Backup (secondary) firmware, e.g.
`upgrade secondary tftp://192.168.2.70/WeOS-4.13.4.pkg`
- 4) Execute the upgrade command for the Primary firmware, e.g.
`upgrade primary tftp://192.168.2.70/WeOS-4.13.4.pkg`
- 5) After the upgrade has completed it is possible to verify with the `show system-information` command that the correct firmware version is active, see the chapter Determining Firmware Versions
- 6) Complete the process by saving the configuration, see appendix for instructions.

Examples:

```
upgrade secondary ftp://192.168.2.70/lw4134.img
```

```
upgrade primary tftp://192.168.2.70/WeOS-4.13.4.pkg
```



```
COM16 - PuTTY
lynx:/#> upgrade primary tftp://192.168.2.70/WeOS-4.13.4.pkg
==> Upgrade in progress, console disabled. Please stand by ... <==

Connecting to 192.168.2.70 (192.168.2.70:69)
WeOS-4.13.4.pkg      100% |*****| 57747k  0:00:00 ETA

Checking download ...
Unpacking weos (from /upgrade/download)...
Setting up weos (4.13.4-1)...

Checking lw4134.img ...
  Type: CramFS
   ID: OK (Lnx2)
  Size: OK
  CRC: OK 0xDC73D8CD

Flashing currently active MTD partition, reboot is forced.

Flashing /dev/mtd1 ...
100% - [=====]

Updating RedBoot directory with new CRC ...
100% \ [=====]

Done.
```

CLI Upgrade Using USB

When upgrading using USB the USB-stick must be prepared according to the following:

- Be partitioned
- Be formatted as VFAT or FAT32 on the first partition

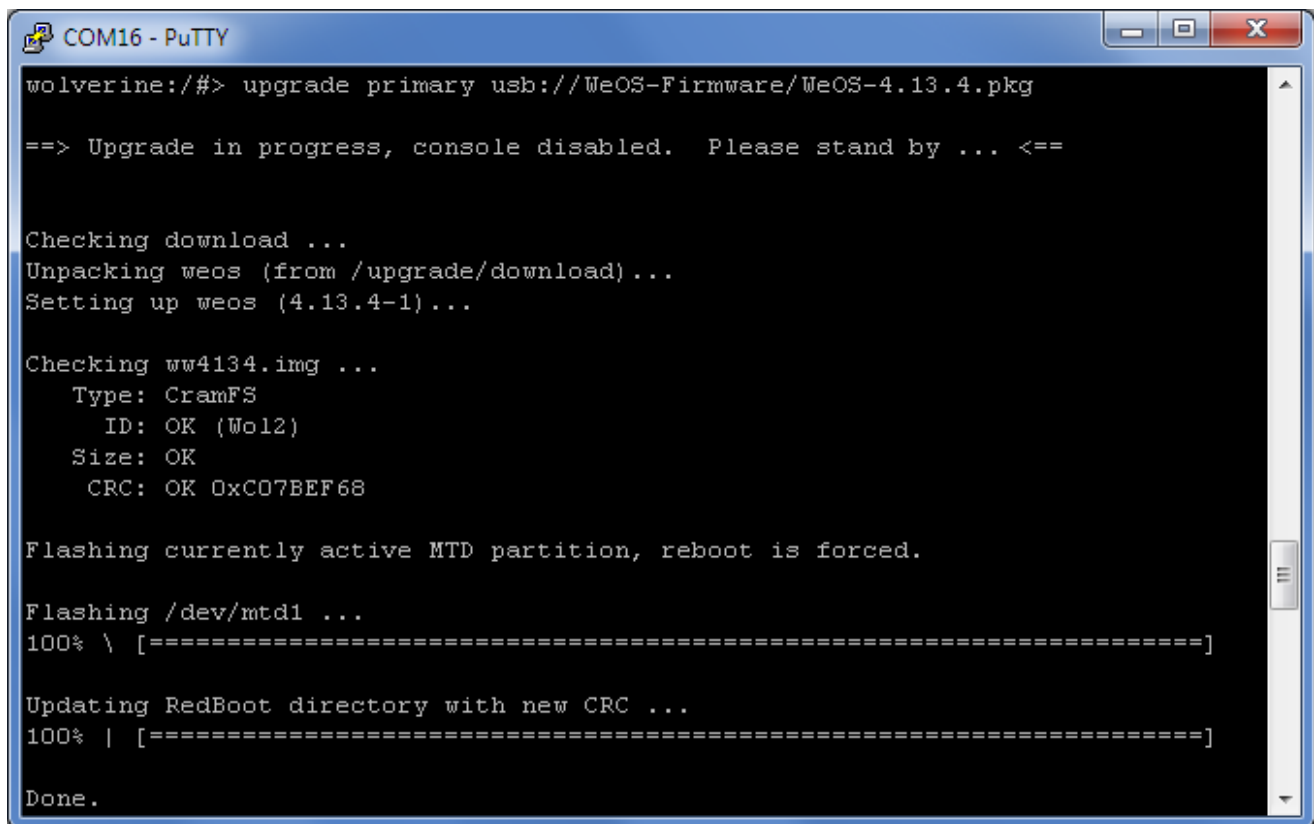
Otherwise WeOS might not be able to read the firmware file from the USB-stick.

To execute the USB upgrade use these steps:

- 1) Make a backup copy of the configuration, see appendix for instructions.
- 2) Make sure the USB-stick is prepared, loaded with the firmware file and inserted into the unit.
- 3) Execute the upgrade command for the Backup (secondary) firmware, e.g.
upgrade secondary usb://WeOS-Firmware/WeOS-4.13.4.pkg.
- 4) Execute the upgrade command for the Primary firmware, e.g.
upgrade primary usb://WeOS-Firmware/WeOS-4.13.4.pkg.
- 5) After the upgrade has completed it is possible to verify with the *show system-information* command that the correct firmware version is active, see the chapter Determining Firmware Versions
- 6) Complete the process by saving the configuration, see appendix for instructions.

Example:

```
upgrade primary usb://WeOS-Firmware/WeOS-4.13.4.pkg
```



```
COM16 - PuTTY
wolverine:/#> upgrade primary usb://WeOS-Firmware/WeOS-4.13.4.pkg

==> Upgrade in progress, console disabled. Please stand by ... <==

Checking download ...
Unpacking weos (from /upgrade/download)...
Setting up weos (4.13.4-1)...

Checking ww4134.img ...
  Type: CramFS
  ID: OK (Wol2)
  Size: OK
  CRC: OK 0xC07BEF68

Flashing currently active MTD partition, reboot is forced.

Flashing /dev/mtd1 ...
100% \ [=====]

Updating RedBoot directory with new CRC ...
100% | [=====]

Done.
```

3. Multiple Version Upgrade Procedures

WeOS supports configuration compatibility when upgrading to the next feature release, see the Introduction section for the feature release definition.

When a WeOS unit must be upgraded several feature releases and keeping the configuration intact, steps must be taken in order to ensure that the configuration is compatible with the new firmware version.

Always upgrade to the latest patch release available, see list under section the WeOS Firmware.

Example: upgrading from 4.17.0 includes these steps 4.17.0 -> 4.17.1 -> 4.18.1 -> 4.19.2 -> 4.20.0.

There are two ways to upgrade multiple firmware versions, either with a cleared configuration i.e. factory defaulting the unit after upgrade or upgrade keeping the configuration compatible between the firmware versions by upgrading step by step.

Multiple Version Upgrade with Factory Default Configuration

The quickest upgrade procedure when upgrading several WeOS releases is to do a Factory Reset after the upgrade has finished. In this way the upgrade can be done in one step going directly to the desired firmware version. Although it also means that all configuration settings on the unit will be erased so a new configuration must be made on the new firmware version.

Please Note! When upgrading multiple versions, upgrade first the Primary firmware and then the Backup firmware, as the Backup firmware do not have to consider the configuration aspects of the upgrade

Please Note! From 4.14.x only the .pkg file upgrade is supported. So when upgrading from any release previous 4.13.x all upgrades must first be to 4.13.4 in order to get the .pkg upgrade support.

To upgrade in this way follow these steps:

- 1) For releases previous to 4.13.x upgrade the Primary firmware directly to 4.13.4 using one of the methods described in the Choose Upgrade Procedure chapter, e.g. 4.6.2 -> 4.13.4 with the .img file.
- 2) Then upgrade the Primary firmware directly to the firmware version above 4.13.x that is wanted using one of the methods described in the Choose Upgrade Procedure chapter, e.g. 4.13.4 -> 4.14.2 with the .pkg file.
- 3) Upgrade the Backup firmware directly to the new firmware version, e.g. 4.6.2 -> 4.14.2.
- 4) When the upgrade has finished perform a Factory Reset so all configuration settings are reset and the new factory default settings are activated.
- 5) Redo the configuration on the new firmware version.

Multiple Version Upgrade Keeping the Configuration

To keep the configuration from an old firmware compatible with a new firmware when upgrading WeOS over multiple versions, the upgrade must be done in a step by step manner. Going from feature release to feature release will ensure configuration compatibility.

At each step of a feature release upgrade, previously the configuration had to be saved in the new firmware format. However from WeOS feature release 4.15.0 the configuration is saved automatically so no extra step is needed for this.

See the Introduction section for the definition of a feature release.

Please Note! When upgrading multiple versions, upgrade first the Primary firmware and then the Backup firmware, as the Backup firmware do not have to consider the configuration aspects of the upgrade.

In order to keep the configuration intact, upgrade using these steps:

- 1) Upgrade the Primary firmware to the latest patch release available, if needed.
- 2) Then upgrade the Primary firmware to the latest patch release of the next feature release in the list using one of the methods described in the Choose Upgrade Procedure chapter.
- 3) When the upgrade has finished save the configuration via CLI or WEB (only needed for WeOS versions older than 4.15.0), see appendix.
- 4) Repeat the procedure until the version needed is reached.
- 5) Then upgrade the Backup firmware directly to the new firmware version.

Example:

- 1) Upgrade Primary firmware 4.9.0 -> 4.9.2 using the .img file.
- 2) Upgrade Primary firmware 4.9.2 -> 4.11.2 using the .img file.
- 3) Save the configuration.
- 4) Upgrade Primary firmware 4.11.2 -> 4.12.1. using the .img file.
- 5) Save the configuration.
- 6) Upgrade Primary firmware 4.12.1 -> 4.13.4. using the .img file.
- 7) Save the configuration.
- 8) Upgrade Primary firmware 4.13.4 -> 4.14.2. using the .pkg file.
- 9) Save the configuration.
- 10) Upgrade Primary firmware 4.14.2 -> 4.15.3. using the .pkg file.
- 11) Save the configuration.
- 12) Upgrade Primary firmware 4.15.3 -> 4.16.0. using the .pkg file (no need to save).
- 13) Upgrade Primary firmware 4.16.0 -> 4.17.1. using the .pkg file (no need to save).
- 14) Upgrade Backup firmware 4.9.2 -> 4.17.1 using the .pkg file, in this case the unit understands .pkg files as it's Primary firmware is already upgraded to 4.17.1

Through this procedure the configuration of the unit is now kept compatible all the way from 4.9.0 to latest patch release of the latest feature release.

Upgrading Early RedFox Units Using WeOS 4.0.0

Early RedFox units (Industrial and Rail) delivered with WeOS 4.0.0, comes with a flash memory partition unsuitable for the larger firmware image size of WeOS 4.3.x and later.

If the RedFox unit have an article number and a serial number that fits the table below a partition table upgrade is needed, otherwise this section can be ignored:

Model	(Article number)	Serial number
RFI-18-F4G-T4G	3641-3300	< 1190
RFI-14P-F4G	3641-3200	< 1180
RFI-10P	3641-3110	< 1220
RFI-18P	3641-3100	< 1111

To find out the units model, article number and the serial number go to Status -> System -> Details in the WEB interface or issue the command *show system-information* in the CLI.

Please Note!

Updating the flash partition table will corrupt your system!

Configuration files, certificates and backup image will be destroyed.

Please Note!

Although this update facility has been tested extensively by Westermo there are no guarantees it will work flawlessly for all use cases.

Therefore, we do not recommend this action on active running units in the field. Instead, replace the unit with a spare one first.

Update the flash table using these steps:

- 1) Backup your .cfg files, startup-config and any certificate files to a USB-stick or remote (T)FTP/SCP server.
- 2) If you are running WeOS version 4.2.1 or later proceed directly to the next step. If you are running WeOS 4.0.0, you must first upgrade your primary firmware to a later release, e.g., 4.2.1 or 4.3.0, see the other sections of this document on how to upgrade correctly.
- 3) Access the CLI via the console port, run the *flash-table-update* command, and wait for it to finish. The unit reboots when it has completed the update.
- 4) Restore configuration files, any necessary certificates and the system backup image.

The *flash-table-update* command is only available on WeOS 4.2.0 and later, and is only visible if you have a RedFox with the old partition table.

Boot Loader Upgrade

Please Note! Unless the release notes explicitly recommend it, there is no need to upgrade the boot loader.

The boot loader firmware can only be upgraded from the CLI using the upgrade command:
`upgrade <pri|sec|boot> <[URI://][ADDRESS[:PORT]]/FILE | ADDRESS FILE>`

The current version (updated at boot) is visible in the output from the `show system-information` command, see the chapter Determining Firmware Versions

The boot loader firmware does not follow the WeOS firmware version numbers, it has its own version numbering scheme and it is CPU platform specific, see the section The WeOS Firmware.

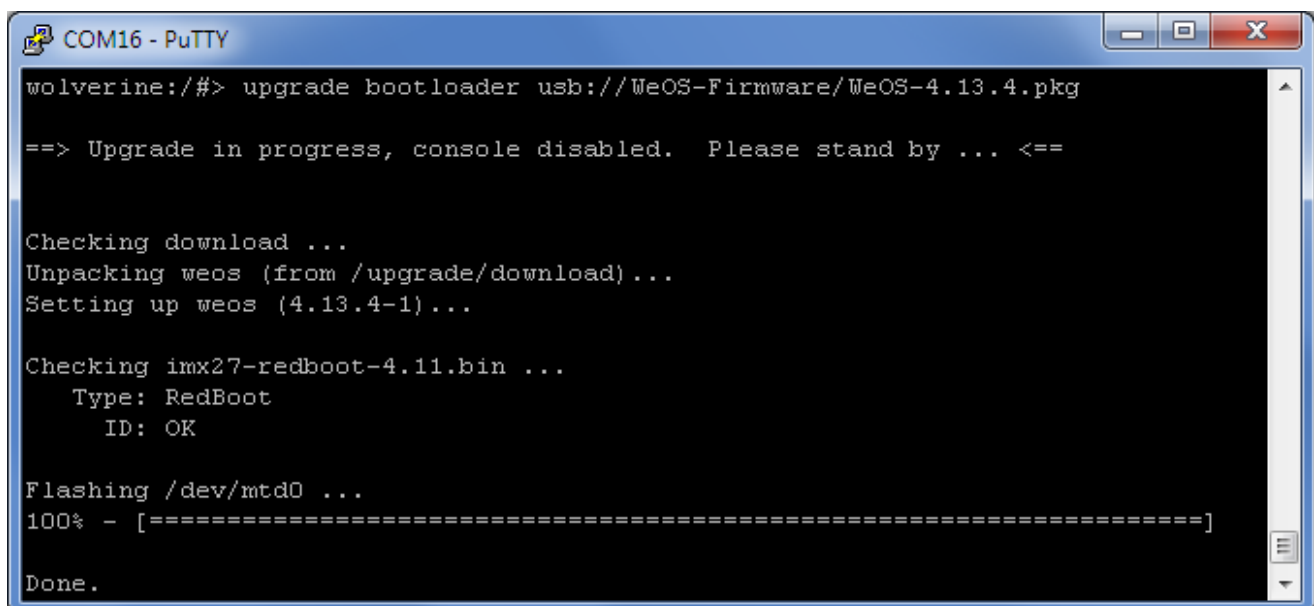
To execute the boot loader upgrade use these steps:

- 1) Make a backup copy of the configuration, see appendix for instructions.
- 2) Chose upgrade procedure FTP, TFTP or USB and make sure everything is set.
- 3) Excecute the upgrade command.
- 4) Reboot the unit.
- 5) After the reboot has completed it is possible to verify with the `show system-information` command that the correct boot loader version is active, see the chapter Determining Firmware Versions

Example:

```
upgrade bootloader ftp://192.168.2.70/imx27-redboot-4.11.bin
```

```
upgrade bootloader usb://WeOS-Firmware/WeOS-4.13.4.pkg
```



```
COM16 - PuTTY
wolverine:/#> upgrade bootloader usb://WeOS-Firmware/WeOS-4.13.4.pkg

==> Upgrade in progress, console disabled. Please stand by ... <==

Checking download ...
Unpacking weos (from /upgrade/download)...
Setting up weos (4.13.4-1)...

Checking imx27-redboot-4.11.bin ...
  Type: RedBoot
  ID: OK

Flashing /dev/mtd0 ...
100% - [=====]

Done.
```

Downgrading

Although downgrading is discouraged it might sometimes be necessary.

The downgrade process is much more complex than upgrading as the new firmware version will contain several new features that the old firmware is not aware of.

Therefore it is not possible to downgrade with the configuration completely compatible.

This is why it is so important to backup the configuration before upgrading so a downgrade can be made without having to reconfigure the unit. See the upgrade sections for details on how to upgrade.

Downgrading is performed using these steps:

- 1) Make sure there is a backed up configuration for the firmware version the unit is to be downgraded to or be prepared to do a Factory Reset of the unit after downgrade.
- 2) Execute the downgrade in the same way as the upgrade is performed (but with an older firmware), see the upgrade sections for details. Example 4.14.2 -> 4.12.1 and please note, as it is not possible to keep the configuration intact, downgrading in steps is of no use in this case.
- 3) When the downgrade is finished perform a Factory Reset of the unit to make sure it has the factory default settings of the firmware downgraded to, see appendix for details.
- 4) If desired restore a configuration file saved in the firmware version downgraded to e.g. 4.12.1, see appendix for details.

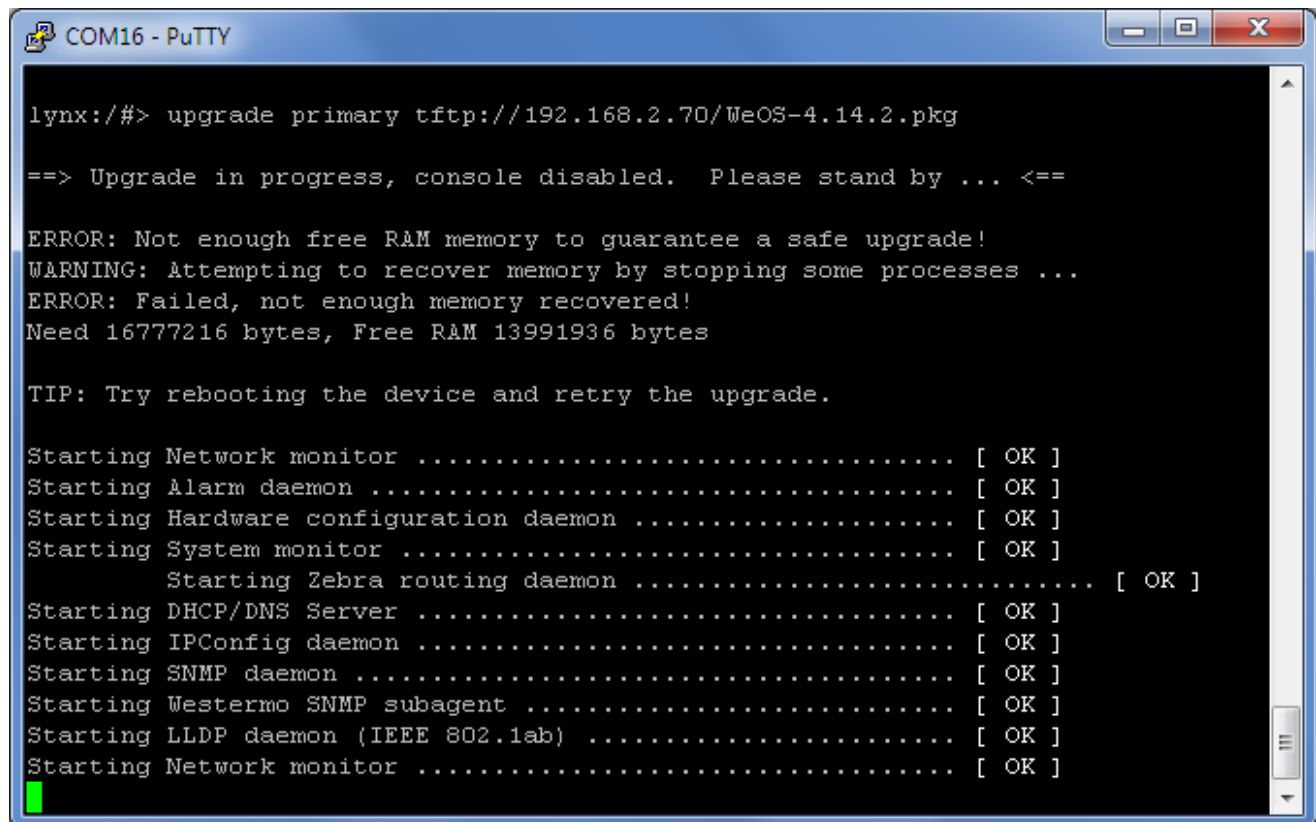
Insufficient RAM-memory for Upgrade

When a WeOS unit is to be upgraded a RAM-disk will be created in RAM memory where the firmware image is stored. In some rare cases there might not be enough memory left in RAM for the RAM-disk to be created. This could happen if a firmware version is used where there is a memory leakage, see release notes for information.

In such a case the unit will first try to disable some functions that is not needed for the upgrade and then it will try to create the RAM-disk again and if that is successful the upgrade can continue.

But if there is still not enough memory available the upgrade will fail. See picture below.

In this case first try to reboot the unit to clear RAM of unnecessary allocations and then try the upgrade again.



```
COM16 - PuTTY
lynx:/#> upgrade primary tftp://192.168.2.70/WeOS-4.14.2.pkg
==> Upgrade in progress, console disabled. Please stand by ... <==
ERROR: Not enough free RAM memory to guarantee a safe upgrade!
WARNING: Attempting to recover memory by stopping some processes ...
ERROR: Failed, not enough memory recovered!
Need 16777216 bytes, Free RAM 13991936 bytes

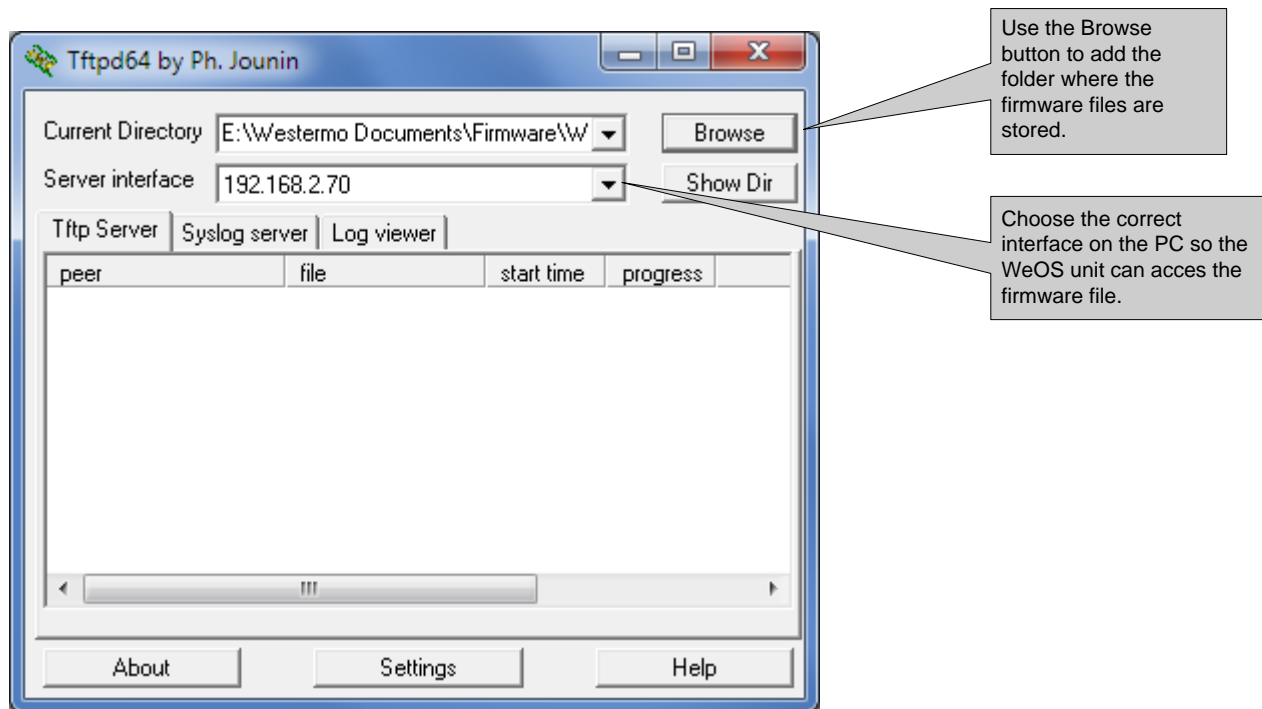
TIP: Try rebooting the device and retry the upgrade.

Starting Network monitor ..... [ OK ]
Starting Alarm daemon ..... [ OK ]
Starting Hardware configuration daemon ..... [ OK ]
Starting System monitor ..... [ OK ]
Starting Zebra routing daemon ..... [ OK ]
Starting DHCP/DNS Server ..... [ OK ]
Starting IPConfig daemon ..... [ OK ]
Starting SNMP daemon ..... [ OK ]
Starting Westermo SNMP subagent ..... [ OK ]
Starting LLDP daemon (IEEE 802.1ab) ..... [ OK ]
Starting Network monitor ..... [ OK ]
```

Appendix

Setting up a TFTP Server

The TFTP server software can be downloaded from <http://tftpd32.jounin.net>. This particular server does not have to be installed on the computer it will be run from.



Please Note! Do not forget to adapt the firewall for the PC that shall run the TFTP server so the WeOS unit can download it's firmware file from it.

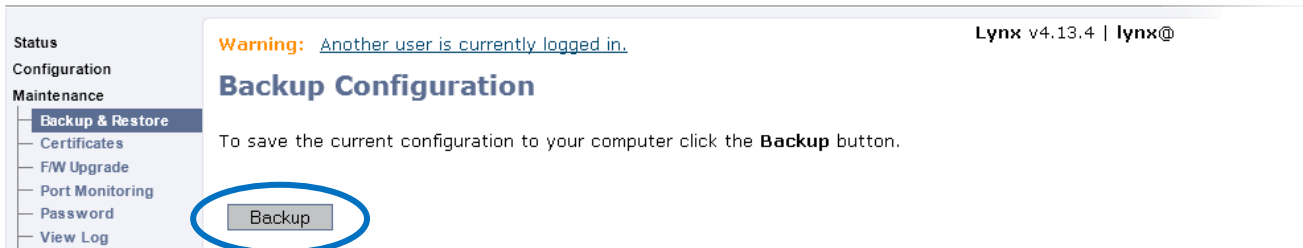
Configuration Backup

A WeOS unit's configuration can be backed up from either the CLI or the WEB interface.

Backup the Configuration from the WEB Interface

The configuration can be backed up by going to:

Maintenance -> Backup & Restore and clicking the Backup button in the WEB interface.



Backup the Configuration from the CLI

The copy command is used for configuration backup from the CLI.

```
copy [force] [URI://]<from> [URI://]<to>
```

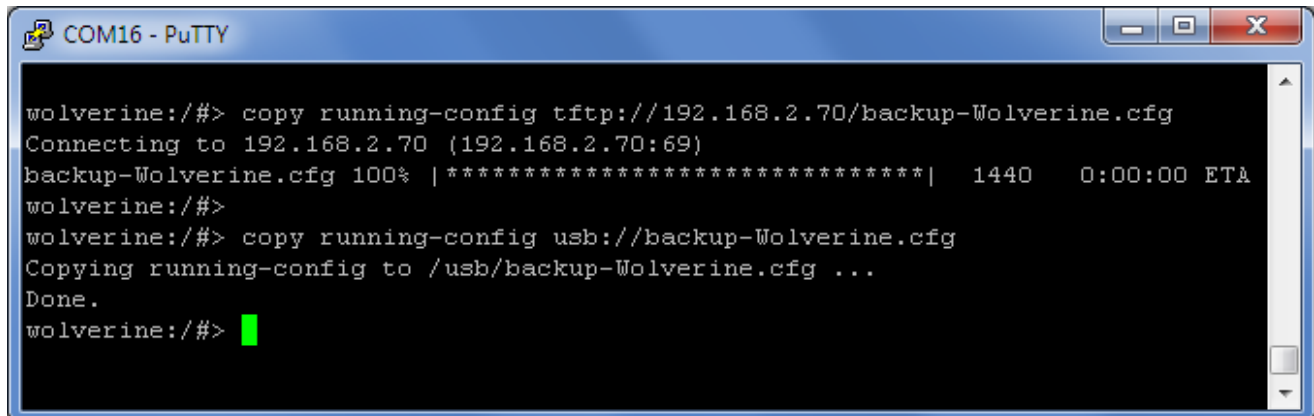
Use *help copy* from the prompt for more information about the copy command.

The configuration can be saved to the following storage places FTP, TFTP, SCP or USB.

Examples:

```
copy running-config tftp://192.168.2.70/backup-Wolverine.cfg
```

```
copy running-config usb://backup-Wolverine.cfg
```



Configuration Restore

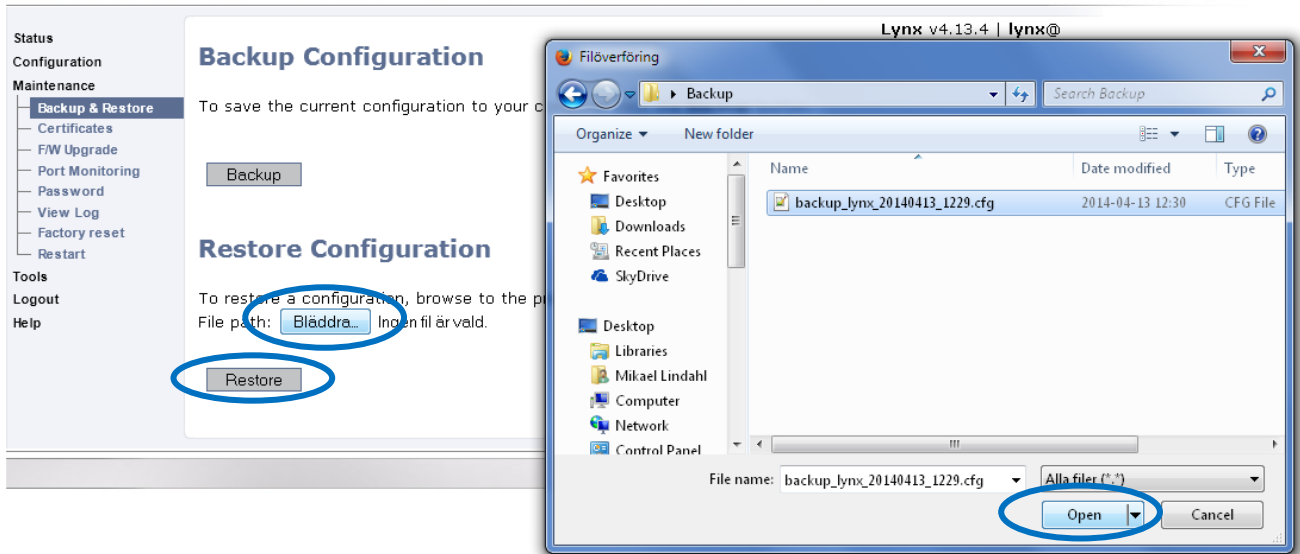
A WeOS unit's configuration can be restored from either the CLI or the WEB interface.

Restore the Configuration from the WEB Interface

The configuration can be restored in the WEB interface by going to:

Maintenance -> Backup & Restore, click the Browse button and choose the configuration file to be restored. Execute by clicking the Restore button.

Verify the configuration by browsing the WEB interface.



Restore the Configuration from the CLI

The copy command is used for configuration restore from the CLI.

```
copy [force] [URI://]<from> [URI://]<to>
```

Use *help copy* from the prompt for more information about the copy command.

The configuration can be restored from the following storage places FTP, TFTP, SCP or USB. Copy the configuration file to the running-config first to make sure the copy procedure went well and all settings are correct, then copy it to the startup-config.

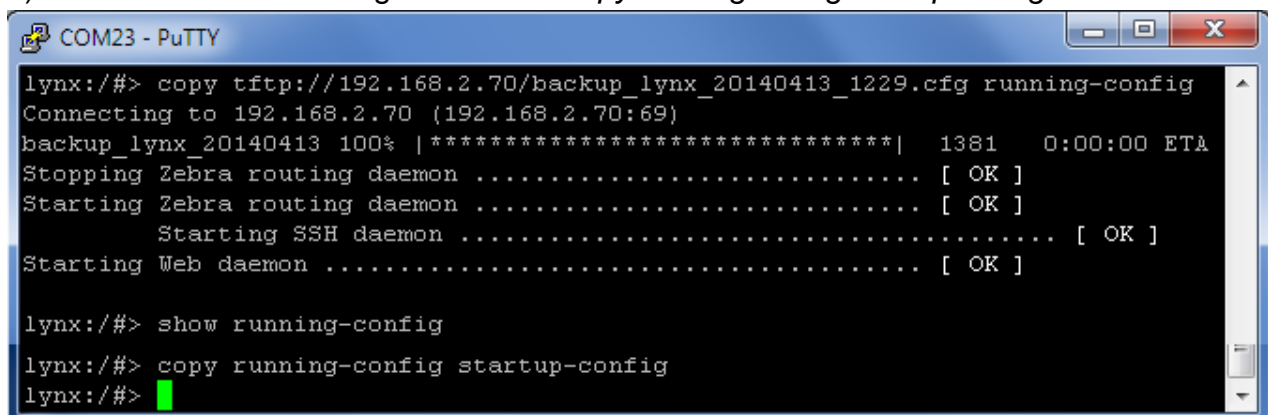
Restore a configuration using these steps:

1) Use the copy command e.g.

```
copy tftp://192.168.2.70/backup_lynx_20140413_1229.cfg running-config
```

2) Verify the configuration by executing *show running-config*

3) Save the restored configuration with *copy running-config startup-config*



Factory Reset

A WeOS unit can be set to factory default from either the CLI or the WEB interface.

Factory Reset from the CLI

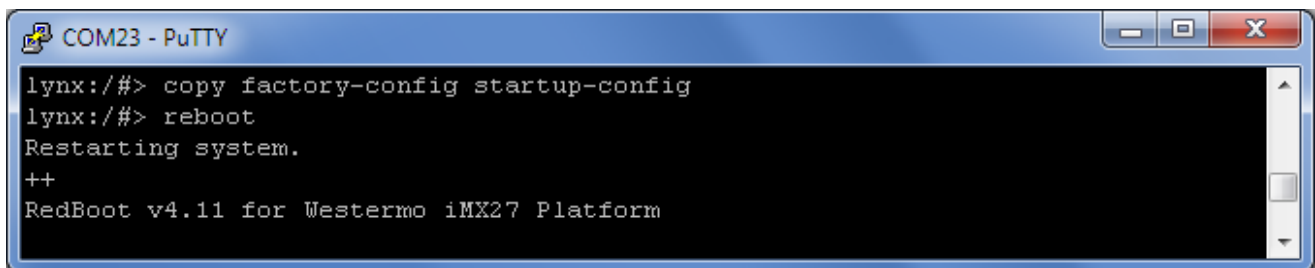
Perform a Factory Reset from the CLI using the copy command.

`copy [force] [URI://]<from> [URI://]<to>`

Use `help copy` from the prompt for more information about the copy command.

Issue a Factory Reset using these commands:

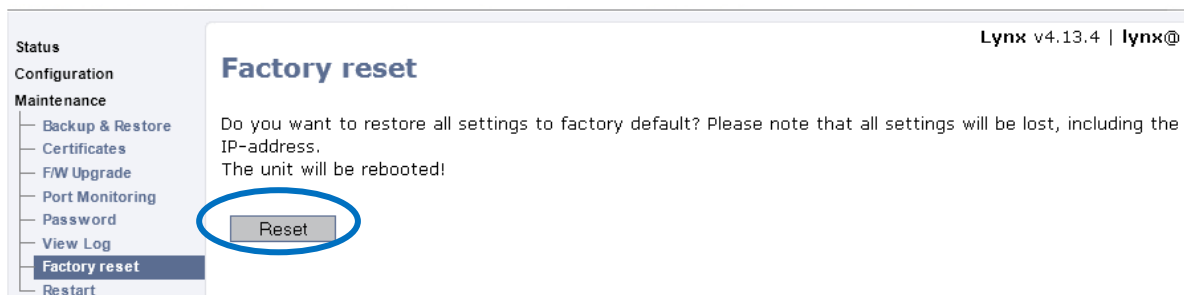
- 1) `copy factory-config startup-config`
- 2) `reboot`



```
COM23 - PuTTY
lynx:/#> copy factory-config startup-config
lynx:/#> reboot
Restarting system.
++
RedBoot v4.11 for Westermo iMX27 Platform
```

Factory Reset from the WEB Interface

To execute a Factory Reset from the WEB interface go to Maintenance -> Factory reset and click the Reset button.



Revision history for version 1.0

Revision	Rev by	Revision note	Date
00	ML	First Release	20140425
01	ML	Updated information regarding multiple version upgrade	20170119
02			
03			
04			
05			
06			
07			

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