



IbexOS Release Notes

Release 6.11.5-0

Westermo Network Technologies AB

September 30, 2024

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1 General Information

Company

Westermo Network Technologies AB

Contact Support

www.westermo.com

Release Number

6.11.5-0

Software Build Number

051177bce0360a521ecc23349a822e79c560b6e3

Date of this build

September 30, 2024

2 Release Highlights

2.1 6.11.5-0

- Session-Management: Fix leaking of session information
 - *Security Advisory: Westermo-24-12: IbexOS Web Interface/WebAPI Session hijacking*
- Cellular: Add support for FOTA (Firmware Over The Air) upgrade of the cellular radio firmware

3 Further Changes

3.1 6.11.5-0

- System: Fix major memory leak in switching engine (802.11ax products only)
- Wireless: Fix automatic MAC generation for multi BSSID (802.11ax products only)
- Wireless: T2Gv1 is no longer supported. Please use T2Gv2 or T2Gv3
- User Interface: Remove wifi analyzer app (802.11n products only)

4 Limitations

- When the device is reconfigured to Mesh with SAE as encryption, the device has to be rebooted after applying the configuration (802.11n products only)
- Multi-SSID with DFS channels does not work (802.11n products only)
- It is recommended to operate the wave 1 card (radio1) with a maximum of 60 active clients. (802.11ac products only)

5 Configuration Parameter Changes

The following configuration items have been added, changed, removed, deprecated or obsoleted:

- rpcCellFotaUpgrade (added)
- setCellFotaUrl (added)
- hwCellFwVersionPreferred (added)
- cfgWlanInfaceInactivityTimeout (changed)
- cfgWlanHoProfile (changed)
- cfgVpnOpenvpnRemote (changed)
- cfgWlanHoScanRateLimitTime (obsoleted)
- cfgWlanHoScanRateLimitTries (obsoleted)

6 Supported Cellular Firmware

This release supports and has been tested with the following cellular firmwares:

6.1 Ibex-RT-330, Ibex-RT-630

- EM12GPAR01A20M4G_01.003.01.003
- EM12GPAR01A21M4G_01.200.01.200

6.2 Ibex-RT-330-5G, Ibex-RT-630-5G

- RM520NGLAAR03A01M4G_01.202.01.202
- RM520NGLAAR03A03M4G_01.201.01.201

Other cellular firmware versions are not supported.

7 Changed Configuration Parameter Descriptions

7.1 MIB Reference: WESTERMO-SW6-MIB

7.1.1 `cfgVpnOpenvpnRemote`

Remote Host Name or IP Address

The OpenVPN client tries to connect to a server at the given remote host name or IP address.

The remote option will be omitted from the OpenVPN config file when set to 'none'. This allows to specify your own remote entries via the custom options (see `cfgVpnOpenvpnCustomOptions`).

<i>Type</i>	DisplayString
<i>Range</i>	4 - 255
<i>Access</i>	readwrite
<i>OID</i>	1.3.6.1.4.1.16177.1.400.1.1.1003.1.1.1.5

7.1.2 `cfgWlanInactivityTimeout`

Allowed idle time before station is removed

If a station does not send anything in `ap_max_inactivity` seconds, an empty data frame is sent to it in order to verify whether it is still in range. If this frame is not ACKed, the station will be disassociated and then deauthenticated. This feature is used to clear the station table of old entries when the STAs move out of range.

Applies to AP.

<i>Range</i>	15 - 65535
<i>Access</i>	readwrite
<i>OID</i>	1.3.6.1.4.1.16177.1.400.1.1.3.2.1.23

7.1.3 `cfgWlanHoScanRateLimitTime`

****OBSOLETE:** Scan Rate Limit Time**

This option used to be active when `cfgWlanHoProfile` was set to `t2gv1(1)`. `t2gv1(1)` is no longer supported.

<i>Range</i>	4 - 65535
<i>Access</i>	noaccess
<i>OID</i>	1.3.6.1.4.1.16177.1.400.1.1.3.3.1.12

7.1.4 `cfgWlanHoScanRateLimitTries`

****OBSOLETE:** Scan Rate Limit Tries**

This option used to be active when `cfgWlanHoProfile` was set to `t2gv1(1)`. `t2gv1(1)` is no longer supported.

<i>Range</i>	1 - 255
<i>Access</i>	noaccess
<i>OID</i>	1.3.6.1.4.1.16177.1.400.1.1.3.3.1.13

7.1.5 `cfgWlanHoProfile`

Handoff Profile

A description of available handoff profiles in terms of use case, functionality and associated parameters.

t2gv2(2) Train to Ground v2 (background scan)

Performs a background scan that optimizes operation in ISO-frequency systems. If neighbor reporting is enabled on the AP `cfgWlanIfaceNeighbourReport`, the STA will scan directly. Intended for operation with third-party products.

- Encryption: psk/eap/sae (WPA2/WPA3)
- Scanning: Background
- Neighbour reporting: Frequency
- Associated Parameters: `cfgWlanHoScanningLevel`

t2gv2fg(3) Train to Ground v2 (foreground scan)

Performs a foreground scan that optimizes operation in multi-frequency systems. If neighbor reporting is enabled on the AP `cfgWlanIfaceNeighbourReport`, the STA will scan directly. Intended for operation with third-party products.

- Encryption: psk/eap/sae (WPA2/WPA3)
- Scanning: Foreground
- Neighbour reporting: Frequency
- Associated Parameters: `cfgWlanHoScanningLevel`

t2gv3(4) Train to Ground v3 (RSSI low/high, Distance near/far)

If neighbor reporting is enabled on the AP `cfgWlanIfaceNeighbourReport`, the STA will scan directly and set the handoff parameters according to the received AP values. Otherwise, or if a neighbour report is lost, the handoff values for RSSI and Distance defined on the STA are used as backup. To enable distance handoff, the measurement period must be set.

Note: The RSSI handoff in t2gv3(4) is only active if a `cfgWlanHoLevelLow` greater than 0 is defined.

- Encryption: psk/eap/sae (WPA2/WPA3)
- Scanning: Foreground
- Neighbour reporting: Frequency, RSSI low/high, Distance near/far
- Associated Parameters: `cfgWlanHoLevelLow`, `cfgWlanHoLevelHigh`, `cfgWlanHoDistanceNear`, `cfgWlanHoDistanceFar`, `cfgWlanHoDistanceMeasurementPeriod`

Applies to STA and AP. 802.11n products only.

<i>Enumeration</i>	t2gv2 (2), t2gv2fg (3), t2gv3 (4)
<i>Access</i>	readwrite
<i>OID</i>	1.3.6.1.4.1.16177.1.400.1.1.3.3.1.3

7.1.6 rpcCellFotaUpgrade

FOTA Upgrade Cellular Module

The Firmware Over The Air (FOTA) upgrade for the cellular module checks for the availability of a new firmware package and installs it.

Check the `hwCellFwVersionPreferred` status if a firmware upgrade is required.

By default the firmware package is downloaded from a Westermo web service. If the device operates in a private network without internet access, the URL `setCellFotaUrl` must be set to override the public domain with a local web server.

Please contact support for instructions on how to set up the web server and obtain the required fw packages.

NOTE: The FOTA upgrade requires a cellular connection. The firmware download may incur additional data subscription charges.

Writing **upgrade(1)** to this parameter will download the firmware and put the module into download mode. The upgrade will start automatically if the download is successful. During the download and upgrade, remote access is not available. The unit will reboot automatically and connectivity will be restored.

The parameter returns **error(-1)** if the download fails. After the reboot the parameter will return **nop(0)**. To check that the firmware upgrade is complete, `hwCellFwVersionPreferred` should return **true(1)**.

****IMPORTANT:** Do not turn off the unit during the cellular firmware is being upgraded. The upgrade may take several minutes and remote access will be restored when it is complete. If there is a power failure during the upgrade, the module will attempt to restore the previous firmware.

<i>Enumeration</i>	error (-1), nop (0), upgrade (1)
<i>Access</i>	readwrite
<i>OID</i>	1.3.6.1.4.1.16177.1.400.1.3.101.4

7.1.7 setCellFotaUrl

Cellular FOTA URL

By default the firmware package is downloaded from a Westermo web service. If the device operates in a private network without internet access, the URL must be set to override the public domain with a local web server.

Please contact support for instructions on how to set up the web server and obtain the required fw packages. The package name must be in the specified format, the URL points to the package folder.

Example:

- `http://192.168.1.1/path/to/upgrade/packages/`

<i>Type</i>	DisplayString
<i>Range</i>	1 - 255
<i>Access</i>	readwrite
<i>OID</i>	1.3.6.1.4.1.16177.1.400.1.4.50.3

7.1.8 hwCellFwVersionPreferred

Cellular Module Firmware Version Preferred State

The parameter returns **true(1)** if the latest cellular firmware is installed. Otherwise it returns **false(0)** if a firmware upgrade is available.

<i>Enumeration</i>	false (0), true (1)
<i>Access</i>	readonly
<i>OID</i>	1.3.6.1.4.1.16177.1.400.1.5.50.7