

# LANCOM Release Notes for GS-23xx



## 3.32 RU7

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LANCOM Systems GmbH  
Adenauerstrasse 20 / B2  
52146 Wuerselen  
Germany

Internet: <http://www.lancom-systems.com>

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## 1. Preface

LCOS SX is the operating system for all LANCOM switches. In the context of the hardware given by the products the at a time latest LCOS SX version is available for all LANCOM switches and is available free of charge for download from LANCOM Systems.

This document describes the innovations within LCOS SX software release 3.32 RU7, as well as the improvements since the previous version.

Before upgrading your device to a new firmware it is essential to **backup your device's configuration**.

Due to extensive features it is **not possible to downgrade** to a previous firmware without using the backup configuration.

Please note that different firmware files might be available for your device.

## 2. Advices for firmware update

### Advice for firmware update to LCOS SX 3.32

Updating from version 2.83 or older will reprogram the device's flash memory once. Thus, the update may take up to 15 minutes, depending on the device.

**Never disconnect the device from power supply while updating the firmware.** In this case the device won't start again.

### For LANCOM Switch types GS-2326(+)/GS-2326P, GS-2352 and GS-2310P

Switches running LCOS SX 2.83 or older have to be updated to LCOS SX 3.17 first before being updated to LCOS SX 3.32.

### For LANCOM GS-2352P

Switches running LCOS SX 2.83 or older have to be updated to LCOS SX 3.04 first before being updated to LCOS SX 3.32.

### 3. New features, improvements, and history

Devices delivered with LCOS SX 3.30 or higher automatically connect to the LANCOM Management Cloud (LMC). This functionality provides zero-touch installation for new devices. In case you do not want to use the LMC, this feature can be disabled at any time on the device's WEBconfig under > Configuration > LMC. You can manually re-enable the usage of the LMC whenever you want.

#### LANCOM GS-23xx improvements 3.32.0222 RU7

##### Bugfixes / improvements

- > With MAC-based 802.1X authentication against a RADIUS server, a client was authenticated although the RADIUS authentication was answered with a 'RADIUS Reject' and 'EAP Success'. However, the 'Success' type EAP packet only refers to successful EAP communication.  
The switch only interpreted the EAP part, but not the contents of the RADIUS packet (the 'RADIUS Reject'). Therefore a client that was not known on the RADIUS server was also successfully authenticated.
- > The switch is now able to transmit the RADIUS attributes 'NAS Identifier' and 'Service Type=Call Check'.
- > The maximum length of an SSH hostkey has been extended from 1024 bits to 2048 bits.
- > A MAC-based 802.1X authentication against a RADIUS server was passed as a RADIUS request without EAP components and with the MAC address as user name.
- > When using 802.1X authentication with the 'Single 802.1X,' 'Multi 802.1X' and 'MAC-based Auth.' modes, the MAC addresses were not transferred to the MAC address table after the terminal devices successfully logged in.

## LANCOM GS-23xx improvements 3.32.0221 SU6

### Bugfixes / improvements

- Special user input via the web interface was not validated correctly. This could provoke a sudden restart of the device.

## LANCOM GS-23xx improvements 3.32.0210 RU5

### Bugfixes / improvements

- When operating LANCOM switches of the GS-23xx series, it could happen that devices lost their serial number and MAC address after a restart and were also unable to obtain an IP address. The devices continued to operate, but the affected switches could no longer be reached via their IP address.

## LANCOM GS-23xx improvements 3.32.0208 RU4

### New features

- In the 'Authentication Method Configuration' it is now possible to configure the protocols HTTP and HTTPS separately.
- Simplification of the VLAN port marking
- A warning is now displayed in the 'System Log Configuration' for insecure 'SNMPv2 Get community' configuration.

### Bugfixes / improvements

- The passwords stored in the configuration files are now stored encrypted.
- When using 802.1X with the 'Mac-based Auth.' authentication mode, the 'RADIUS-Assigned VLAN Enabled' feature could not be enabled.  
A new 'MAC-based single Auth.' authentication mode has been implemented to allow the use of the 'RADIUS-Assigned VLAN Enabled' feature.
- Although access to the web interface was blocked in the configuration, the login page of the web interface was displayed when an access attempt was made. However, a login was not possible.
- After disabling 'Web' in the 'Authentication Method Configuration', port 80 was displayed as open, but access to the web interface was not possible.
- When using the feature 'Port Based 802.1X' and the VLAN mode 'Trunk' a connected device could be authenticated, but a data transmission was not possible.
- In the SNMP MIB of a LANCOM GS-2310(P)(+), 13 ports were listed in the LLDP tree when LACP was active, although the switch only has 12 ports.

- If a Voice VLAN was configured on the switch, the MAC address of individual connected network devices was sporadically no longer included in the MAC address table after the 'Voice VLAN Aging Time' had expired. This caused these devices to no longer being able to communicate in the network. Only devices in VLANs that did not correspond to the Voice VLAN were affected.
- When setting a static MAC table entry in the menu 'Filtering Data Base / Configuration', the switch restarted abruptly.
- If a port-based VLAN was configured and an additional configuration for MAC-based VLAN was added, only the MAC-based settings worked; the advanced settings were ignored.
- The (admin) password, user name and privilege level could not be configured via SNMP using the existing admin account.
- The 'Limit Control' function in the 'Security / Port Security' menu could only be activated via the web interface. If an attempt was made to activate the function via the console, the error message "Port Security Limit Control Configuration of easyport must be preserved" was displayed.
- On the console, there was no way to enable multiple protocols to access the switch simultaneously (e.g. SNMP & TELNET/SSH). Either all protocols could be activated at once or only one protocol could be activated.

## LANCOM GS-23xx improvements 3.32.0135 SU3

### Bugfixes / improvements

- The random generator for generating SSH keys did not generate enough different host keys.  
To make sure that after upgrading to firmware LCOS SX 3.32 SU3 enough different SSH host keys are available in the switch, you need to do the following:
  - Open the switch's web interface.
  - Navigate to the menu 'Security / SSH'.
  - Click on the button 'Regenerate hostkey'.
  - In the menu 'Maintenance / Save/Restore' save the configuration with the option 'Save Start'.
  - Restart the switch with the option 'Maintenance / Restart Device'.New SSH host keys are generated when the switch is restarted.  
See also <https://support.lancom-systems.com/knowledge/x/AoCCAq>.

## LANCOM GS-23xx improvements 3.32.0114 RU2

### Bugfixes / improvements

- Switches which were connected to the LANCOM Management Cloud (LMC) could in seldom cases experience an SSL connection error which resulted in devices which could no longer be managed by the LMC. Only the monitoring was functional.
- If the LANCOM switch detected a network loop, until now only the timestamp and blocked port have been logged to a syslog message. The network loop detection now additionally logs the number of the second involved port, and also shows an information about which port was the sender and which one was the receiver of the loop protection frame.

## LANCOM GS-23xx improvements 3.32.0110 RU1

### New features

- Extension of the device logs
- Extension of PoE Detection (Legacy Mode)
- New switch for sFlow (Always On)

### Bugfixes / improvements

- If a fixed IP address was assigned to a switch managed by LMC using an add-in script, this resulted in a sudden restart of the switch.
- The LANCOM switches transmitted MAC addresses (e.g. from supplicants with 802.1X on a RADIUS server) exclusively using small letters (e.g. 00-10-a4-23-19-c0). However, according to RFC-3580, upper case letters must be used (e.g. 00-10-A4-23-19-C0), which is now the case.
- If you created a script saving from a switch of type LANCOM GS-2352x, in which a PVID is entered for 26 ports, this script saving could not be loaded into the device.
- If the LLDP function was used for automatic device recognition on a LANCOM GS-23xx series switch managed in the LMC, the switch could restart abruptly.
- The automatic conversion of the time to Central European Summer Time (CEST) was one week too early.
- A ping to the IP address of a GS-2352(P) was not answered by the switch if a management VLAN other than 1 was used.
- When transferring a GS-23xx to the LANCOM Management Cloud, "Forbidden VLANs" were not transferred to the LMC configuration.
- Debug information for analyzing a sudden restart ("watchdog") could not be read out completely via SSH and Telnet.
- An open SSH, Telnet or Web session on a switch managed via the LMC was not terminated immediately if a new main device password was rolled out to the switch via the LMC.

- A reboot event triggered via SNMP or the LMC was not written to the syslog.
- The pairing of a switch with the LMC via LANconfig using an activation code was not successfully completed. As a result, the switch was in an endless loop. The identical process via the web interface or the claiming via PIN, however, worked.
- The configuration item “Unregistered ICMPv6 Flooding” under MLD-Snooping was without function on models of the GS-2328 and GS-2352 series.
- Due to a too small internal data buffer, too large TLV (Type-Length-Value) packets were discarded. As a result, the authentication of a client via 802.1X to a RADIUS server failed.
- A faulty sFlow configuration caused a switch to send “Counter Samples” instead of “Flow Samples” after some time and the sFlow Collector no longer received any data.
- If the web interface of the switch was prompted via an IPv6 address, the online help display did not work.
- A GS-2310(P) provided the same port ID for both CU and SFP ports 9 and 10 when queried via SNMP. Now the port IDs 9A and 10A for the CU ports and 9B and 10B for the SFTP ports are delivered.

## LANCOM GS-23xx improvements 3.32.0012 Rel

### New features

- Scripting ability via the LANCOM Management Cloud
- Added a hint for a not yet saved configuration to the configuration interface
- For SSL and TLS configurations, the minimum SSL and TLS versions to be applied are now selectable from a drop down list.

### Bugfixes / improvements

- If STP was activated on the switch ports, and this configuration was saved as “Start configuration”, it could happen that after a cold boot the displayed uptime value in the menu “configuration > port status” was stated with 2627 days.
- A main device password which was configured via the LANCOM Management Cloud was not included in an \*.xml configuration file export.
- No online help was available for the switch’s system information “LMC pairing state”, “LMC control state”, “Largest free mem block”, and “Free memory”, as well as for the functions “Configuration save” and “Configuration upload”.
- When saving a configuration to an \*.xml file, PoE configuration parameters for “Power delay”, “Auto checking” and “Scheduling” were missing.
- Switch ports with configured 802.1X Single-/ multi mode port authentication were blocked after 4-6 minutes and re-released after a further 4-6 minutes. The port status was always (even with blocked status) shown as “Authorized”.
- The automatic completion of “show” commands using the tab key failed on the command line due to the spelling of the command “show-3rd-party-licenses” for all managed switches.

- In the web configuration the error string of an error message was not scaled to the size of the message area.
- It was possible that no IPv6 packets were transmitted on particular ports of the GS-2352x switches.
- Descriptions for configuration options for individual switch types were missing in the online help for the function “Configured link speed” (in the menu “Port configuration”).
- When using the function MAC-based authentication for connected access points, a change of the switch ports due to Wi-Fi roaming caused a sudden switch restart, if the MAC address of the Wi-Fi clients was deposited on the RADIUS server.
- When using multiple switches with activated RSTP in a ring structure, and simultaneously activated DHCP snooping 100% CPU load was generated on a big amount of clients (more than 500).
- Communication problems with IPv6 packets could occur with activated MLD snooping, if the network connection to the client was cut and reconnected afterwards. A high amount of packet losses could occur when using IPv6, too.
- General stability improvements

## LANCOM GS-23xx improvements 3.30.0450 RU4

### New features

- Display of the current memory consumption on the GUI and CLI
- Device configuration files can now be exported and imported encrypted.
- Persistent boot- and event log

### Bugfixes / improvements

- Although the cable LANCOM SFP-DAC10 was displayed accurately in the SFP information, LANCOM GS-2310(P)+ series devices could not establish a link.
- When writing back a configuration from the LMC to a switch, an SNMPv3 user password was overwritten with 8 asterisks (\*\*\*\*\*).
- Only 94 different clients (MAC addresses) could access the switch management at the same time. If one more client tried to access the switch, its web interface was not accessible.
- With LANCOM SFP-CO1 copper modules, the status of the numerically smaller port was displayed with “up” instead of “down” in case of a loop.
- If authentication data of a switch user account were created or modified, the LMC overwrote the existing password using the appropriate user name. The administrator account of the switch was not affected by this.
- A malfunction within the DHCP snooping function created a false linkage in the switch’s internal IP address list, which caused a list-internal LOOP. This caused internal services being executed endlessly when working the list. This led to a 100 % CPU load and blocked any further services from executing (e.g. packet flow).
- If a configuration was written to the switch by LMC or SNMP, not all possible action values for ARP spoofing could be set. This prevented the configuration from being written to the switch.



## LANCOM GS-23xx improvements 3.30.0417 RU3

### New features

- › Support for the new SFP copper module LANCOM SFP-CO1
- › Support for the new Direct attach cable LANCOM SFP-DAC10 for all switch models with 10G-ports
- › New function "Password Policy" (minimum requirements to a secure password)

### Bugfixes / improvements

- › Fixed a misbehavior related to the management accessibility
- › Improvements in usage of the LANCOM Management Cloud
- › General stability improvements

## LANCOM GS-23xx improvements 3.30.0324 RU2

### Bugfixes / improvements

- › New monitoring entries could not be created in the LANCOM Management Cloud if the appropriate table did not contain any entries yet.
- › If no DHCP server was found within the network for a DHCP-configured LANCOM switch, the fallback to the default IP address failed (172.23.56.250).
- › If the trace "lmc-control-data" was executed on a serially connected LANCOM switch, the trace output displayed faulty information.

## LANCOM GS-23xx improvements 3.30.0321 RU1

### Bugfixes / improvements

- › A firmware upgrade which was triggered by the LANCOM Management Cloud (LMC) works reliable again.
- › The entries under 'TACACS+ Authentication Server Configuration' could not be deleted via LANCOM Management Cloud (LMC).
- › If a pairing between a LANCOM switch type GS-23xx and the LMC was performed, and the device did a restart while pairing, the pairing process was not completed after the device restart.
- › If the management VLAN ID of a LANCOM GS-2352(P) was not '0', the device could not be found by LANconfig, if IGMP snooping was enabled.
- › Though more than one IPv6 management addresses were announced in LLDP, the dialogue "LLDP > LLDP Neighbours" showed only the first IPv6 management address.
- › The link to a second management address of another device, which was learned via LLDP, could not be invoked.
- › The SNMP output of "dot1qVlanStaticEgressPorts" of the Q-Bridge MIB was done decimal. This was now changed to an SNMP output as octet string.

- › A request of the port status via HTTP/S under Security > Port Security > Port Status -> Port lead to a non-availability of the switch management (via management IP), if this function was activated, and many MAC addresses were listed for the requested port.
- › Adding a hostname under 'TACACS+ Authentication Server Configuration' lead to a sudden restart of the switch after confirmation of the changes.

## LANCOM GS-23xx improvements 3.30.0204 Rel

### Bugfixes / improvements

- › Possible memory losses when using SNMP and SSH have been fixed.
- › Random disconnects when using SSH were fixed.
- › The activation of Voice VLAN no longer leads to the static entry of dynamic MAC addresses in the MAC address table.

## LANCOM GS-23xx improvements 3.30.0115 RC1

### New features

- › Support for the LANCOM Management Cloud (LMC)
- › It is now possible to invoke a cold boot of the device from the configuration interface as well as via command line.
- › Syslog is now able to store up to 1.000 syslog messages. The entries of the syslog table can now be sorted by time of day.
- › Thanks to enhancements within the SNMP MIB structure (private MIB) it is now possible to configure AAA, IGMP snooping, SNMPv2/v3, NAS, private based VLAN, and MAC based VLAN.
- › Innovaphone was added as a manufacturer to the OUI table in the Voice VLAN menu.

### Bugfixes / improvements

- › The configuration interface is displayed accurate again in 2560 x 1440 pixels resolution.
- › An SSH connection which was configured with keepalive does no longer lead to a device restart.

## LANCOM GS-23xx improvements 3.22.0003 Rel

### New features

- › Support for AES 128 with SNMPv3
- › SNMP Get Community can be enabled/disabled now
- › The NTP synchronization interval can now be configured
- › A time for a switch restart can be added on the CLI

**Bugfixes / improvements**

- › The LLDP neighborhood is shown with the correct IPv6 addresses
- › Fixed a bug which sometimes led to inaccessibility of the switch after a restart
- › Fixed a problem with DHCP option 43
- › If IPv6 autoconfiguration is enabled, the IPv6 address will be updated automatically if the prefix changes
- › If the authentication via Telnet is forbidden, the appropriate port will be disabled completely

**LANCOM GS-2326(P) / GS-2352(P) / GS-2310P improvements 3.17 Rel****New features**

- › Five additional SNMP GET communities can be configured
- › SSL certificates are now signed with SHA2 (SHA512)
- › Dropbear SSH Version update

**Bugfixes / improvements**

- › Four-wire network cables are supported in auto-negotiation mode
- › For HTTPS access via Firefox there is no need to execute "cert-renew" after a firmware upgrade
- › Port speed can be changed from "10 Mbps half duplex" or "100Mbps half duplex" to "Auto" via CLI
- › Improvements for EasyPort and SCP functionality

**LANCOM GS-2326(P) / GS-2352(P) / GS-2310P improvements 3.10 Rel****New features**

- › An automatic protocol based access lock can be configured based on incorrect logins.
- › XML configuration files are saved containing an additional header which holds information about device type, export date, firmware version and serial number.
- › Enhanced IPv6 information within the system information
- › NTP configuration now supports domain names
- › Configurable QoS settings for prioritizing source and target IP address
- › The IPv6 prefix now has a default length of 64 bit
- › Extended the RADIUS Shared Secret password length to 64 characters
- › Easy Port supports now Multi-VLAN, and user-defined templates can be created.
- › Support for DHCP option 43
- › Improvements for the DHCP relay function
- › LSR support

- › Support for RSA 2048 with SSH and HTTPS access
- › Removed DES based encryption
- › Support for ARP Spoofing
- › The DHCP relay agent now supports multiple VLAN, port and access groups.
- › Configurable GIADDR for DHCP relay function
- › Added 5 more SNMP communities
- › Improved generation of the HTTPS certificate
- › Support for DH 2048 Bit

### Bugfixes / improvements

- › The switch sends a Stop-Accounting-Status-Type when the accounting is finished.
- › The switch sends TFTP accounting information if TACACS+ authentication is enabled.
- › MAC based authentication via 802.1X works again.
- › Static Trunk configuration is included again when exporting/importing a configuration.
- › The port description can be edited and/or deleted using the CLI.
- › Fixed a bug which caused a switch reboot if IGMP packets were forwarded and a link was deleted.
- › The PVID can be changed again via CLI.
- › The switch does no longer reboot when receiving a DHCP offer/ack packet bigger than 576 bytes.
- › HTTPS access with Firefox v39.0 and higher works again

## LANCOM GS-2326(P) / GS-2352(P) / GS-2310P improvements 2.83 Rel

### New features

- › The online help was improved.
- › The hardware version is displayed in the system information.
- › Configuration and firmware can now be installed via SCP.
- › Support for further radius attributes at login/logout
- › The default values of configuration time were adjusted
- › HTTPS certificates have been improved
- › With the new CLI command „cert-renew“ a new HTTPS certificate with a unique serial number can be generated
- › Access via TFTP can be configured
- › LANCOM GS-2352 and GS-2352P support the following 10GB SFP Direct-Attach-Cable:
  - HP SFP+ Direct Attach 1m J9281B
  - D-link DEM-cb300S P3400XA03000-A
  - Intel Ethernet SFP+ Twinaxial Cable XDACBL3M - Twinaxial-Kabel - SFP+ (M)
- › The device name is displayed within the browser tab

### Bugfixes / improvements

- › If DHCP snooping is activated in a PXE environment, a client still get an address assigned
- › Without authentication you won't get an address on a port with 802.1x authentication
- › Enabling DHCP Snooping no longer causes a crash
- › If several commands be performed, the connection to a TACAS+ server won't get disconnected when the accounting is activated
- › Access to other switches using single IP over HTTPS has been corrected
- › If the IPv4 and IPv6 client is activated and the device name contains more then 254 signs, this will don't lead to a countless sending of Router Solicitations per second
- › When several clients sign in to a port with 802.1x authentication, this will not lead to a crash
- › The configuration can be imported/exported via LANconfig as XML again
- › If the password contains invalid characters, this leads to an error message
- › The download and upload of the configuration via TFTP can only be performed by a user who has the permission configured
- › The TFTP download and upload works even if the first character of the password is a "@"
- › When sending emails the setting for summer / winter time is taken into account

### LANCOM GS-2326(P) / GS-2352(P) improvements 2.52 Rel

#### New features

- › Protected device access by TACACS+ or RADIUS authentication is displayed on the web interface
- › Extended the private MIB by PoE and VLAN port configuration
- › Support for 1024bit SSL encryption
- › The default value for the VLAN port was changed to „C-port“
- › Adjusted background color for the web interface
- › A status code is returned for a correct LANconfig display while updating the firmware

#### Bugfixes / improvements

- › Access via LACP Link with IPv6 is possible after reboot
- › Revised legend for the serial number field
- › If no user data is transferred during TFTP access, an appropriate error code is returned for LANconfig
- › Added help items for TACACS+ Authorization, Accounting Configuration and Traffic Class
- › The navigation bar is displayed in Internet Explorer 10
- › Customized help for ACL configuration
- › LLDP-MED settings can be retrieved via MIB
- › A PXE Boot client gets an IP address if DHCP snooping is enabled
- › Fixed serial number help

- › Configuration export and import allows for all parameters
- › If DHCP Snooping is enabled on a trusted ethernet port, DHCP packets on ports 66-89 and 4011 are allowed, too
- › The switch waits up to 15 minutes for an IP address allocation by a DHCP server before it falls back to its default IP address
- › Adjusted DHCP host name
- › Fixed help for Circuit- and Remote ID
- › The MIB contains the correct value for „pethPsePortDetectionStatus“
- › Corrected the default values for the IPv6 configuration
- › Increased the default value for access level modification to Privilege Level 15
- › If a loop is plugged between 802.1x configured ports, the switch does not boot
- › When configuring SMTP, the recipient is listed only once
- › Configuration import works with long VLAN names, too

## LANCOM GS-2326(P) / GS-2352 improvements 2.26 Rel

### Bugfixes / improvements

- › SNMPv3 trap host configuration display is correct after an SNMP command was executed from CLI
- › ACL works again, even if ARP packets were received
- › The password is no longer deleted if the system name was changed
- › The model name is displayed correctly if retrieved by SNMPc
- › Improved Reboot/Restore button
- › Path cost is determined correctly when using STP and aggregation at the same time
- › On a Windows 2008 Server the switch's MAC address is displayed
- › All devices with identical first 4 byte MAC address are displayed
- › No trap events are sent if the respective port is disabled
- › Easy Port: The traffic class value can be changed for IP-CAM and WiFi-AP
- › Easy Port: Feedback when pressing the Apply button
- › Easy Port: If Port Security is enabled for one port, it is activated globally
- › Easy Port: A VLAN group is built with the selected ports using the VLAN ID with IP-CAM and WiFi AP
- › The model name is shown on the command line
- › No reboot when accessing the switch via LANconfig/SSH
- › Improved answer times when scanning ethernet- and PoE-ports with LANmonitor
- › Modification within the NTP protocol: NTP request is working reliably
- › % and + characters can be used for passwords

## LANCOM GS-2326 / GS-2352 improvements 1.65 Rel

### Bugfixes / improvements

- › Improved ping answer times
- › Changing the system description parameters can no longer cause a device password reset
- › Optimization of the 10 GBit ports improves handling for packets with high run time
- › Multicast packets in a ring topology do no longer cause loss of management access while plugging and unplugging the cable
- › Fixed a problem which could cause an incompletely read MIB file
- › An SNMP walk can now be done without errors
- › Fixed a problem with configuration file import
- › Improved 802.1x authentication when using a Windows 2008 Server as a Radius server

## LANCOM GS-2326 / GS-2352 improvements 1.48 RC1

### Bugfixes / improvements

- › Switching a port On/Off repeatedly could lead to connection loss
- › Fixed a problem with speed recognition in automode for the 10G SFP ports
- › Improved LACP stability
- › Improved display of the IPv6 link-local address
- › Corrected answer behaviour for the link-local address
- › Fixed faulty syslog configuration display
- › Improved system stability when simultaneously configuring STP and LACP
- › Improved Web interface display after saving the user configuration
- › It is now possible to configure an SNMP trap server IP address
- › Corrected display after firmware upload or restart via webinterface

## 4. Common advice

### Disclaimer

LANCOM Systems GmbH does not take any guarantee and liability for software not developed, manufactured or distributed by LANCOM Systems GmbH, especially not for shareware and other extraneous software.

### Support notes & known issues

Latest support notes and known issues regarding the current LCOS SX version can be found in the download area of our website: [Common support hints](#)