Release Notes

LCOS SX
5.20 RU11

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1. Preface

The LANCOM family of operating systems—LCOS, LCOS SX, LCOS LX, and LCOS FX—forms the trusted basis for the entire LANCOM range of products. Within the scope of the hardware specified by the products, the latest firmware version is available for all LANCOM products and is offered by LANCOM Systems for download free of charge.

LCOS SX 5.2x is the operating system for all LANCOM switches of the XS-5100, XS-4500, and GS-4500 series, as well as for the LANCOM XS-6128QF.

The following LCOS SX operating systems are also available for other LANCOM switches:

LCOS SX 5.3x is the operating system for the LANCOM switches CS-8132F and YS-7154CF.

LCOS SX 4.30 is the operating system for all LANCOM switches of the series XS-3500, GS-3600, GS-3500, and GS-3200, as well as for the LANCOM switches GS-3152(X/XP/XSP), GS-3126(X/XP), and IGS-3510XUP.

LCOS SX 4.00 is the operating system for the LANCOM GS-3152P.

LCOS SX 3.34 is the operating system for all LANCOM switches of the GS-2300 and GS-1300 series..

The release notes for these device series can be found as usual on the LANCOM website in the download area of the respective switch.

This document describes the new features of the LCOS SX software release 5.20 RU11 as well as the changes and improvements to the previous version.

Devices delivered with LCOS SX 5.00 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.

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2. The release tag in the software name

Release Candidate (RC)
A Release Candidate has been extensively tested by LANCOM and includes new LCOS featurses. It is suitable for testing and is not recommended for use in productive environments.

Release Version (REL)
The release version has been extensively and successfully tested in practice. It contains new features and improvements over previous LANCOM operating system versions and is therefore recommended for use in productive environments.

Release Update (RU)
A release update is a further development of an initial release version in productive environments and contains minor improvements, security fixes, bug fixes and smaller features.

Security Update (SU)
Contains important security fixes for the respective LANCOM operating system version and ensures that your security level remains very high on an ongoing basis in your productive environment.

3. Note on the firmware update

Never disconnect the switch from the power supply during a firmware update, as the device will not start properly if the update process is aborted.

Please make sure to **back up your configuration files** before updating your LANCOM devices to a new firmware version!
Due to the partly extensive feature enhancements, a **downgrade** to the old firmware is **no longer possible** automatically **without such a backup**.
Please note that different firmware files may be available for your device.

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4. New features, improvements, and history

LANCOM XS and GS-4500 series - LCOS SX 5.20.0522 RU11

Bug fixes
→ A switch in which no backup firmware was available took longer to boot than a switch in which backup firmware was available in the memory.
→ The timestamps of syslog information were not compliant with the RFC 3339 standard, which could result in the messages being discarded by an external log server.
→ ECMP routes (Equal-cost multi-path routing) created via OSPF could not be used due to the lack of multipath support.
→ If the port speeds were set differently in the switch and in the LMC (e.g. a static value on the switch and auto-negotiation in the LMC), this led to an error during a configuration rollout via the LMC.
→ When using a private VLAN, the management VLAN (VLAN 1 in the default configuration) could not be added to the permitted VLANs. As a result, access to the switch configuration was no longer possible on the ports with the private VLAN.
→ A VPC scenario configured locally on the switch could not be transferred to the LMC because parameters relevant for the VPC configuration were deleted during a configuration rollout via the LMC.

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LANCOM XS and GS-4500 series - LCOS SX 5.20.0447 RU10

New features
→ The LMC client now also works behind transparent HTTP proxies and supports proxy authentication.
→ SNTP server and time zone configuration have been added to the detail configuration of the LMC.
→ Integration of the new LANCOM XS-4500 series

Bug fixes
→ If devices were operated via PoE at the 802.3bt ports of a LANCOM GS-4530XUP or GS-4554XUP and these ports were deactivated and reactivated via SNMP, a link was no longer established on these ports. This meant that the connected devices could no longer communicate in the network.
→ When using LANCOM 1G SFP modules, it could happen that a 1G connection to an Allied Telesis AT-9000 could not be established.
→ If the commands 'show poe config', 'show poe config all' or 'show poe config 1' were executed on switches without PoE function, this led to an immediate restart of the switch.
→ During failover in a stack scenario, the stack stopped working for a few moments if the stack master was not available.
→ After a restart of a GS-4500 series switch, it could happen that PoE did not work on some ports. When reading out the PoE configuration on the console with the command 'show poe config all', the mode of the affected ports was displayed as 'Disabled'.
→ If a switch (LANCOM GS-4500 or XS series) lost the connection to the LMC (message "The device ... has lost its connection to the cloud.") and then reconnected to the LMC (message "The device ... is connected to the cloud."), the message "The device ... has reported a boot process." was then displayed in the LMC, even if the device had not been restarted.
→ In individual cases, it could happen that reading out the SysInfo via SCP failed during a firmware update via the LMC. This meant that the firmware update could not be carried out either.

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LANCOM XS and GS-4500 series - LCOS SX 5.20.0324 SU9

Bug fixes
→ A security vulnerability in the RADIUS protocol has been fixed (VU #456537).

LANCOM XS and GS-4500 series - LCOS SX 5.20.0322 RU8

Bug fixes
→ After an update to LCOS SX 5.20 RU7, no extended rights could be obtained via the CLI tunnel in the LMC using the 'enable' command, as the maximum 'privilege level' was not set.

LANCOM XS and GS-4500 series - LCOS SX 5.20.0321 RU7

Bug fixes
→ In a LANCOM switch managed via LMC, a changed device name is no longer replaced by the default device name of the switch after an update to LCOS SX 5.20 RU6.
→ In a stack of several GS-4500 series switches, it could happen that the CPU load increased to over 90 %. This could lead to impairments in the operation of the web interface.
→ A user authenticated via RADIUS or TACACS with the highest authorization level (Privilege Level 15) could not switch to 'privileged execution mode' on the console.
→ The encryption algorithms AES-GCM 128 and AES-GCM 256 have been implemented for SSH.

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LANCOM XS and GS-4500 series - LCOS SX 5.20.0316 RU6

New features
→ The serial numbers of the installed exchangeable power supplies are now displayed under 'Peripherals'.
→ The command extension 'delayed-reboot<seconds>' executes a device reboot only after the specified number of seconds. This function is used for cooperation with some management systems.

Bug fixes
→ An error occurred when converting the 'Client ID' from CHAR to HEX in the 'Pool Configuration'. As a result, characters were not displayed or were replaced by the character '?'.
→ The LACP configuration on the SFP DD ports of the LANCOM XS-6128QF in Ethernet mode was not possible via the LMC. Rolling out the configuration was acknowledged with an error.
→ If the switch received an ISDP packet with a very long character string, the 'ISDP Cache Table' in WEBconfig remained empty.
→ If the 'Config Change Notification' message from the LMC client in the switch to the LMC after a configuration change was not successful on the first attempt, the notification was not deleted after a successful message to the LMC. This resulted in the LMC client repeatedly sending the 'Config Change Notification' to the LMC.
→ No special characters could be stored in the port description via WEBconfig (e.g. a '?').
→ After a firmware update to LCOS SX 5.20 RU4, no configuration changes could be made via WEBconfig and no actions such as changing the firmware could be carried out. In this case, the loading animation was displayed in a continuous loop.
→ The fan speeds and temperature values of the power supply units were not displayed correctly in the 'System / Summary / Peripheral' menu.
→ WEBconfig could not be accessed via HTTPS over IPv6.
→ If an IPv6 address was assigned to the switch, it checked the address for a possible conflict with the service port. For switches without a service port, this meant that the IPv6 address could not be set. In this case, the error message "Address conflict between specified IPv6 address and current configuration." was displayed on the console.
→ The 'Non-Stop PoE' option in the 'System Reboot' menu was also displayed on switches without PoE.

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LANCOM XS and GS-4500 series - LCOS SX 5.20.0244 RU5

Bug fixes
→ It could happen with switches of the GS-45xx series with PoE that PoE was deactivated on arbitrary ports after a reboot.
→ The Supplicant Mode in the menu "Port Access Control Port Configuration" could not be set via WEBconfig.

LANCOM XS and GS-4500 series - LCOS SX 5.20.0241 RU4

Bug fixes
→ For a stack managed by the LMC, no configuration changes could be made through the WEBconfig tunnel. Instead, these were acknowledged with the error message "403 Forbidden".

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LANCOM XS and GS-4500 series - LCOS SX 5.20.0240 RU3

New features
→ Support for the LANCOM GS-4500XUP series
→ DNS servers can now be configured via LMC in addition to the static IP configuration.
→ SNMP MAC traps are now configurable.
→ A 'Clear all' button has been added to the VLAN statistics in the web GUI.
→ The 'mouse-over' function for the device front panel view in the web GUI has been extended by a user-defined port description.
→ The web GUI is now displayed in the new LANCOM corporate design.

Bug fixes
→ In case of an incorrect IPv6 configuration (e.g. incorrect prefix), no error message appeared indicating the error. However, the incorrect configuration was also not applied when saving.
→ In the configuration of LANCOM XS series switches, it was not possible to display the IP addresses of the LLDP Neighbors in the 'LLDP Remote Device Summary' menu.
→ On the WEBconfig interface, it was not possible to assign longer VLAN names in the 'VLAN-Overview' menu that used uppercase letters only. If such VLAN names were assigned in the LMC, the WEBconfig interface did not display them in the overview.
→ VLANs created in the 'Switching / Port Security / VLAN' menu were not included in the list on the overview page. However, the VLANs were created in the configuration.
→ IGMP snooping did not show IGMP groups. The groups are now displayed in the CLI output after entering the command 'show igmpsnooping group'.
→ In the WEBconfig dialog for setting up a mail server for e-mail alerts, the '@' character was not accepted in the user name if a user name was to be used for SMTP relay.
→ The IP address configuration as well as the collected values were not displayed in the device tracking output in the WEBconfig menu 'Switching / Device Tracking / Global'.
→ It was not possible to directly specify the password intended for the server in a command line entry of a RADIUS server.
→ If a DHCP server was set up in the LMC via the detailed configuration of a switch, this configuration could not be rolled out to the devices. As a result, an error message occurred during the rollout.

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→ When adding a LANCOM XS-6128QF to a stack, the 'Board Type' was not displayed, so it had to be checked individually on each device.
The 'Board Type' is now displayed in the web interface in the menu 'Stacking / Base Summary' as well as in the output of the console command 'show supported switchtype'.

→ In the 'SNMP Community', access via web interface could only be restricted to a specific IP address, instead of an IP address range with IP address and subnet mask as on the console.
The subnet mask can now also be specified in the web interface.

→ The 'Secure Flag' of the 'SIDSSL Cookie' was not set for the web interface (HTTPS).

→ Access to the switch was not blocked after multiple incorrect password entries.
Access is now blocked for the respective user for five minutes after five incorrect login attempts.

→ In individual cases, it could happen that an incorrect hardware mask was reported to the LMC for a stack managed by the LMC. This resulted in LAG ports configured on the switch being changed to stack ports by the LMC.

→ The 'Allow Downgrade' function in a stack considered the firmware in the backup slot instead of the currently active firmware version. As a result, even if 'Allow Downgrade' was disabled, a downgrade was performed again after a firmware update of a stack member if the firmware versions in the backup slot matched.
The 'Allow Downgrade' function now takes the currently active firmware version into account.

→ Due to incorrect values for the fan speed, an emergency shutdown and thus a total failure of the LANCOM XS-6128QF could occur in individual cases.

→ The menu 'System / PoE' was not available in the web interface of a LANCOM GS-4554XUP.

→ After an MST instance was created in the 'Switching / Spanning Tree / MST' menu, the 'Switching / Spanning Tree / MST Port' menu could no longer be accessed. The message 'Loading' was displayed permanently.

LANCOM XS and GS-4500 series - LCOS SX 5.20.0169 RU2

Bug fixes
→ The 1 Gbps ports on the GS-4500 series switches are divided into groups of four. If the cable was removed from the first port of a group, this resulted in a link loss on the remaining three ports of this group (e.g. if the cable was removed from port 1 on ports 1 - 4, this resulted in a link loss on ports 2 - 4).

LANCOM XS and GS-4500 series - LCOS SX 5.20.0167 RU1

New features
→ Switch port speed and duplex configurations are now available from within the LMC.
→ A rollout agent already integrated in the LANCOM GS-3000 family, which facilitates the automated commissioning of unconfigured devices, has been added.

Bug fixes
→ A vulnerability in the zlib library has been fixed (CVE-2018-25032).
→ A vulnerability in the OpenSSL library has been fixed (CVE-2022-0778).
→ Vulnerabilities in the software suite 'Net-SNMP' have been fixed (CVE-2022-24805 bis CVE-2022-24810).
→ The option to configure a service port was not available in the 'Source Interface Configuration' menus (e.g. Security → RADIUS menu).
→ When a configuration file in which a VLAN was configured was loaded into a GS-4500 series switch via SCP, the switch performed an unmediated reboot.
→ In the status information of an SFP port (menu 'System → Port → SFP Information') the receive level (Mon 3, RX Power) was not displayed.
→ If a loop was plugged in, it was correctly recognized by the system and the port was switched off, but the information in the columns 'Loop Count' and 'Time of last Loop' remained unchanged.
→ In the menu 'System → Advanced Configuration → DNS → Source Interface Configuration' the option 'Loopback' was missing. As a result, no loopback interface could be selected.
→ Due to an error in the DHCP client of a switch of the LANCOM GS-4500 series, it could happen that the switch rebooted after about 22 days.

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→ XS and GS-45xx switches were no longer accessible after a reboot if two port mirroring sessions had previously been configured and saved in the configuration. The ports no longer received a link after this.

→ If a default route was stored on the switch, multicast packets with a TTL greater than 1 were not transmitted by it.

→ The port speed of LANCOM XS-6128QF switches managed via the LMC was not displayed correctly in the detailed configuration of the LMC.

→ If in a stacking group of LANCOM GS-4554XP and/or LANCOM GS-4530XP switches the switch with the designation 'Unit 1' was not the stack manager, PoE status information could not be read out completely via SNMP. When managing such a stacking network via LMC, no PoE information was displayed at all.

→ When using the DHCP server and the DHCP relay agent for different networks at the same time, the DHCP server in the switch sent a DHCP NAK to the DHCP client via the DHCP relay agent. In the configuration of the DHCP relay agent on the console, an exception can now be configured for such a case ('local-dhcp-discard').

→ When setting the 'Summer Time' to EU or USA the values were set correctly, but afterwards the option 'Recurring' was displayed in the selection menu instead. For better understanding, the EU or USA options are now displayed after setting the corresponding option.

→ Via web interface it was possible to assign an 'Authentication List' to the serial port, which did not contain the authentication method 'Enable' or 'Local'. If the other authentication methods failed, no fallback was possible. A corresponding error message is now issued.

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LANCOM XS and GS-4500 series - LCOS SX 5.20.0093 Rel

New features
→ Firmware integration of the new stackable access switch series GS-45xx
→ Support for the stacking and LAG (Link Aggregation Groups) functions in the LANCOM Management Cloud
→ Switch Config Notifier: as from LCOS SX 5.20 Rel the switches of the XS and GS-45xx series report their local configuration changes to the LMC, and this takes the changed parameters into account in the detailed configuration.
→ Note: Please note that the recording of changes does not start until the switch is shown as online in the LMC.

Bug fixes
→ Various bug fixes have been made in the stacking operation environment.
→ Via the detail configuration in the LMC no syslog server could be stored in the menu 'System / Logs / Server'.
→ The console command 'startlmc' can be used in LCOS to pair with the LMC by specifying the serial number and the cloud pin. When executing the command 'startlmc' on LCOS SX, an activation code from the LMC was also requested by mistake.
→ ISDP / CDP (Industry Standard Discovery Protocol / Cisco Discovery Protocol) was active by default. When LLDP was enabled and another network device with LLDP and ISDP / CDP support was used, this caused the device name to be displayed twice on this device.
→ ISDP / CDP is now disabled by default.
→ When the switch configuration was reset to default settings in the detail configuration of the LMC, the order of the VLAN tables changed. This resulted in the configuration not being able to be rolled out after reconfiguring the VLAN settings in the LMC.
→ Various improvements have been made to the stability of the WEB configuration interface (WEBconfig).
→ A system name, which was assigned by the LMC in the configuration of the switch, was not displayed in the command line of the switch (CLI).

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LANCOM XS series - LCOS SX 5.10.0033 RU2

With LCOS SX 5.20 there is a change to the *.upx file format. Since LCOS SX 5.10 RU2 contains preparatory steps for the change to the new file format, this version is required for a later update to LCOS SX from version 5.20 onwards.
Please note that a firmware downgrade to an older version is no longer possible after the update to version 5.10 RU2.

Bug fixes
→ Due to an index error in some multi-index tables of the LMC, managed aggregation switches displayed an error message about a power supply problem in the LMC, which was not present.
→ In the web interface of a LANCOM XS-6128QF the 'System Name' was not displayed immediately in the dashboard.
→ If a password was set on a switch managed via LMC, login data was requested for this switch when the Secure Terminal was called via the LMC instead of logging the user in directly with the user data of the LMC.
→ With the parameter '?' all available commands can be displayed on the CLI. In the LMC's Secure Terminal, the '?' parameter must also be confirmed with the <Enter> key.
→ When entering the parameter '?' in the Secure Terminal once the command up to the '?' was executed and once the complete command. When entering the command "show ?" this led to the message "Command not found / Incomplete command" being displayed first ("show" on its own is not a complete command), and then all available commands ("show ?") were displayed.

LANCOM XS series - LCOS SX 5.10.0025 RU1

Bug fixes
→ It could happen that the client for connecting to the LANCOM Management Cloud (LMC) terminated itself after pairing with the LMC. In addition it was not possible to restart the client via command line interface.
→ If the switch was configured as a DHCP client and could not establish a connection to the LMC, no DHCP renew was performed. In this case, the error message "No DHCP server detected" appeared in the LMC control state trace.
→ It could sporadically happen that the switch could not read the information of plugged SFP modules.
→ On the LANCOM XS-6128QF it could happen that only a speed of 10 Gbps was detected when using SFP-DAC25 cables on the rear stacking ports (board type 3 or 4).
→ If errors occurred when rolling out a configuration via the LMC, it could happen that these were transmitted to the LMC incompletely or not at all.
→ Furthermore, a race condition was fixed that prevented a valid VLAN configuration from being rolled out via the LMC.
→ After changing the management VLAN on a switch, it did not perform a DHCP renew and was therefore no longer accessible for connections. A manual DHCP renew request had no effect.

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LANCOM XS series - LCOS SX 5.10.0013 Rel

New features
→ Full Layer-3 functionality through VRRP and policy-based dynamic routing via OSPF v2 / OSPF v3 (all LANCOM XS switches) and BGP4 (XS-6128QF only)
→ The 'Next Active' firmware can now be set on all switches simultaneously in the stack via WebGUI.
→ AES-192/256 and SHA-2 algorithms are now supported. This enables SNMPv3 connections with LANmonitor.

Bug fixes
→ In the logging of the LANCOM XS-6128QF it could happen that due to a readout error an incorrect temperature was determined and this was output as an alarm message.
→ In a stacking scenario, operating data such as fan speeds, CPU temperature, etc. were only displayed by the manager device.
→ The IP routing table of a switch was not read out completely via SNMP, which resulted in the configured local networks not being displayed in LANmonitor, for example.
→ LACP was found in WEBconfig in the path 'Switching / Port Channel'. The menu 'Port Channel' has now been renamed to 'Port Channel/LAG' so that this menu corresponds to the corresponding menu of the other LANCOM switches.
→ If the MTU was changed on several switch ports at the same time, the correct MTU was only set on the first selected port. On the remaining ports, a value corresponding to the stored MTU + 18 was set.
→ If the 'Stacking' and 'Loop Protection' functions of a stacking port were configured via SNMP, this resulted in these ports no longer being visible in the configuration. When configuring the 'Loop Protection' of a stacking port via web interface, this port was subsequently also no longer visible in the configuration.
→ Via console and via web interface it was possible to add unsupported switch types to a stack whose stacking ports are not compatible with each other (e.g. an XS-5110F with an XS-5116QF).
→ If routing was activated for a VLAN after it was created and further VLAN settings were made, the view in the web interface no longer updated and froze. Furthermore, the connection to the web interface was completely lost and it was no longer possible to establish a connection via SSH.
→ It could happen that the SFP inventory data was read out incorrectly or incompletely via CLI.

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LANCOM XS-5xxx - LCOS SX 5.00.0117 RU2

Bug fixes
→ It could happen that incorrect readout data of the module temperature was generated due to incorrect timing on the I2C bus. As a result, the "Fan LED" (status of the fan) on the front of the switch turned red and the function of the switch was affected. However, after a restart, the switch worked normally again.
→ The I2C bus was also completely disturbed in rare cases, resulting in incorrect output values, such as incomplete inventory data of the SFP+ modules. This disturbance was also corrected by correcting the I2C timings.

LANCOM XS-5xxx - LCOS SX 5.00.0116 RU1

This release update is the first for the new LANCOM aggregation switches of the XS-5xxx series.

New features
→ Added the option to redirect HTTP to HTTPS without disabling HTTP completely.
→ Using the CLI command 'erase permanent-storage' it is now possible to reset all persistent data to factory defaults. This means that all settings, sensitive data, and certificates are deleted. After executing this command it is possible to pass the switch on to another customer or partner without hesitation.
→ Until now, not all monitoring information from the switches was recorded in the LANCOM Management Cloud. From this version on all information can be read out as usual in the LMC.
→ When tunneling terminal access from the LMC, it is no longer necessary to enter user name and password. This redundant query has been removed.

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Bug fixes

→ During the LANconfig device search via TFTP broadcast it could sporadically happen that a switch answered the request with an 'ICMP port unreachable'. As a result the switch was not found during a device search.

→ If the DHCP client of the switch was active, static IP entries were not saved in order to be added to the configuration and become active when deactivating the DHCP client.

→ Synchronization of the firmware in the stack did not work if a stack member who joined a stack joined another stack with a higher firmware version.

→ A vulnerability existed in OpenSSH 8.3p allowing for potential Denial of Service (DoS) attacks and remote execution of malicious code (CVE-2020-15778).

→ This vulnerability in the OpenSSH library has been fixed.

→ Synchronization of the SSH host key in a stacking network to all members did not work. As a result, if management was moved to another switch while keeping the IP address of the stacking group, an SSH client login to the switch would result in an unknown host key warning message.

5. Common advice

Disclaimer

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Support notes & known issues

Latest support notes and known issues regarding the current LCOS SX version can be found on our website: Support tips