LANCOM
Systems

Information regarding

LCOS Software Release 7.72

for LANCOM Routers and Wireless LAN Access-Points

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1. Introduction

LCOS ("LANCOM Operating System") is the operating system for all Wireless LAN Access Points and Routers. In the context of the hardware given by the products the at a time latest LCOS version is available for all LANCOM products and is available free of charge for dowload from LANCOM Systems.

This document describes the innovations within LCOS software release 7.72, as well as the changes since release 7.70

Warning Hint – Backing up the current configuration

Before upgrading the firmware to LCOS 7.72 it is <u>essential</u> to backup the configuration of your router. Due to extensive features it is <u>not possible to downgrade</u> to a previous firmware without using the backup configuration.
Please see the reference manual for instructions on how to backup the router configuration.

If you want to upgrade devices which are only accessible via router connections or WLAN bridges, please keep in mind to upgrade the remote device first and the local device afterwards.

Note on using Release Updates / Updating Cantral Site Components

We strongly recommend updating productive systems only after internal tests in client environment. Despite intense internal and external quality assurance procedures possibly not all risks can be eliminated by LANCOM Systems.

Note when using managed Access Points

Prior to managing a LANCOM accesspoint using a WLAN controller, you have to upgrade your access point with the latest converter. The corresponding converter file can be found in your device's download directory on the LANCOM homepage. The converter upload is similar to a firmware upgrade.

Note when using certificates

Prior to loading certificates into the LANCOM you must install the current converter. The appropriate converter file can be found in your device's download directory on the LANCOM homepage. Flashing the converter file works similar to a firmware upgrade.

Note when using converter firmwares

You will need enough free memory to use a firmware 6.0 and newer in your LANCOM 15x1, 1611+, 821+ and DSL/I-10+.
Due to the implementation of several new features within the current build of the firmware, it is no longer possible to store two main firmware versions side by side. To gain more free space for the current version, it is now necessary to upload a converter firmware into your device. The converter-firmware has a much smaller size, so that it is now possible to store the main release of the firmware besides the converter-firmware.
This setup is only necessary once for a single device and is done with the so-called converter-firmware (see readme.pdf of the affected devices).
After having flashed the converter-firmware the firmsave function of the LANCOM device is available only on a limited scale. The update to a newer firmware is furthermore possible. However, in case of an update failure the LANCOM will only work with a minimal-firmware which allows just local access to the device. Any extended functionality, in particular remote administration, is not possible when running the minimal-firmware.

Note on Dynamic VPN registration

By reason of patent you have to register the functionality „Dynamic VPN" with IP address transmission over ISDN. This operating mode is usually required when you configure a VPN tunnel with dynamic IP addresses on both sides without dynamic DNS services.
All other Dynamic VPN operation modes (e.g. transmitting the IP address via ICMP, provoking a callback etc.) do not require a registration.
The registration process is fully anonymous - no personal or company data will be transmitted.

The registration of the Dynamic VPN option requires administrator rights on the LANCOM device.

Registration with LANconfig
When scanning the device (e.g. right after program start) LANconfig automatically recognizes devices which have to be activated. After confirming the arising hint LANconfig automatically transmits solely the device's serial number to the LANCOM Systems registration server. The registration code is automatically transmitted back, thus the option will be activated. The state of this procedure is visible in LANconfig.

Registration with WEBconfig
For the registration with WEBconfig the serial number of the device is required. You can find this information on the bottom of your device.

Using WEBconfig you will find a link on the first page which leads you to the LANCOM Systems registration server. Here you must enter your device's serial number and -optional- your e-mail address. After transmitting the data you will receive a registration code for the option.
To load this code into your device, please proceed as follows:
Log in to the device with administrator rights. Select "Enable Software Option", which is placed on the entry page. On the following page enter the registration code and confirm by selecting "Apply".

Remarks regarding the usage of VoIP options

VoIP options for LANCOM 1821 Wireless ADSL are dicontinued with LCOS 7.20. The final version containing the VoIP Call Manager is LCOS 6.32.
As from LCOS 7.5x support for VoIP options for the devices LANCOM 1511 Wireless DSL and 1521 Wireless ADSL is discontinued. The final version containing the VoIP Call Manager is LCOS 7.30.
For the „VoIP ready" routers LANCOM 1711 VPN, 1721 VPN and 1811 Wireless DSL support for the subsequently installed VoIP option will be discontinued with LCOS version 7.56. If you want to continue using your VoIP option, please do only use LCOS versions up to and including 7.54.
For T-Systems Business LAN R800+ VoIP functionality is discontinued in LCOS 7.60
LCOS 7.70 is the final version supporting VoIP options for the remaining „VoIP ready" devices.

2.   Known Issues

Latest support notes and known issues regarding the current LCOS version can be found in the download area of our website http://www.lancom-systems.eu/Common-Support-Hints.64.0.html

3. New features, Changes and History

LCOS changes 7.72.0064 RU2 -> 7.72.0066 RU3

Bugfixes / Changes:

Network Connectivity:

- If a remote station is monitored via VRRP, the connection to that station will be re-established as soon as the router is able to switch back to master state
- An „empty" IPsec proposal (neither ESP nor AH nor IPCOMP) does no longer lead to an LCOS watchdog

LCOS changes 7.72.0053 RU1 -> 7.72.0064 RU2

Bugfixes / Changes:

Network Connectivity:

- Improved VPN tunnel stability when using DPD
- Delay when receiving VRRP announcement packets does no longer lead to faulty master/slave change messages in VRRP statistics
- VRRP protocol uses its own send-/receive buffer to privilege VRRP packets in temporary high load situations
- Corrected selection of the to be used VRRP MAC address

LCOS changes 7.72.0035 Release -> 7.72.0053 RU1

New Features:

Network Connectivity:

- CPU load display is averaged over 1s, 5s, 60s and 300s. The device display, WEBconfig's device status and SNMP requests show the load averaged over 60s.
- Feature to configure an upper limit for incoming VPN connections. This limit does not apply to outgoing VPN connections.
- Configurable TCP parameters for the COM port server
- TACACS checking can be optionally disabled for scripts, CRON- and action-table entries

Bugfixes / Changes:

Network Connectivity:

- If the name of a backup remote station is a substring of a further remote station name, the main connection will not be disconnected if the backup remote station establishes a connection
- Fixed memory leak in UDP treatment within the firewall when using ARF and VLANs
- Appropriate config parameters are used with the „LoadFirmware" and „LoadConfig" commands
- Automatic ADSL linecode configuration only in automatic mode
- Firewall-filtered packets are only logged if this is configured in the firewall rule
- The error message „no channel available" leads to backup connection establishment
- Passwords will no longer be shown in plain text within an SSH trace
- IP-encapsulated corrupt IP packets do no longer lead to an LCOS watchdog. Furthermore bypassing masquerading is not possible using IP in IP
- PIN status queries for UTMS cards do not occur twice
- CPU load improvements with high number of active connections

- When using RIP according to RFC2091 the RIP multicast group is left, so that no unneeded group membership reports are sent
- Improvements for retry mechanisms within TCP
- Extended the number of possible VPN rules to 16 times the amount of the registered VPN license
- Packet flow in VPN hardware acceleration was improved to minimize transfer delay.

LCOS changes 7.72.0034 RC3 -> 7.72.0035 Release

Bugfixes / Changes:

Network Connectivity:

- TCP sessions can be established via local routes, too

LCOS changes 7.72.0031 RC2 -> 7.72.0034 RC3

Bugfixes / Changes:

Network Connectivity:

- In case of an ARF net link loss, RIP information will be sent to the corresponding PPTP remote station even if there is more than one PPTP remote station

LCOS changes 7.72.0026 -> 7.72.0031 RC2

Bugfixes / Changes:

Network Connectivity:

- If an LCOS-Upload fails due to nonavailability of the LANCOM, a new upload is possible without rebooting the device
- Better allocation of the calculating time under heavy load
- WAN throughput is displayed again
- Fixed PPTP reconnection problems in combination with IPsec
- (PPTP KeepAlive, COM-port server / TCP deadlock)
- Configurable amount of concurrent VPN connections
- If all SAs of a VPN connection are established automatically, the IPSec re-keying proceeds even if no data was transmitted

LCOS changes 7.72.0022 RC1 -> 7.72.0026

Bugfixes / Changes:

Network Connectivity:

- Reduced CPU load and memory usage within PPTP
- Fixed PPTP reconnection problems in combination with IPsec
- DPD (Dead Peer Detection) only if the remote station received no data on neither SA
- Threshold for UMTS 2G/3G switching is configurable

LCOS changes 7.72.0100 Release -> 7.72.0022 RC1

Bugfixes / Changes:

Network Connectivity:

- Improvements on IPsec performance
- Fixed PPTP reconnection problems in combination with IPsec
- Internal performance improvements by more efficient sorting algorithms for big quantities of remote stations (e.g. >= 500 remote stations)
- Accelerated upload of big scripts / configurations
- Memory usage per PPTP tunnel reduced by 70%
- Stability improvements when establishing many remote station connections with KeepAlive
- The output of the current routing table does no longer lead to an LCOS watchdog
- If, after sending the „loadscript" command, the LANCOM retrieves a configuration via WAN/TFTP, access table rights are obeyed
- Performance improvements when assembling the internal routing table
- Minor improvements within RIP / routing
- Comprehensive VPN packet traces can be created without the LANCOM booting with an LCOS watchdog
- Creating new PPTP tunnels via script does no longer lead to an LCOS watchdog
- The LANCOM 1751's UMTS modem is monitored, so there are no more "hangs" with status "Deactivated"
- Improvements within the VPN statistics

4. Comments

If you want to upgrade the firmware of your device to a new version, please install the latest LANtools first. **Before running the firmware-upload you should save the router configuration to a file**. After that you can use LANconfig to load the latest LCOS-version into the device.

In principle, we suggest upgrading the firmware of your device only if you are in need of the latest features.

Please note that different firmware files might be available for your device. Further information can be found in the file README.PDF in the download area of our homepage.