

Information regarding

LCOS Software Release 5.22

for LANCOM Routers and Wireless LAN Access-Points

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Table of contents

1. Introduction
2. New features, modifications and history
3. Remarks

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 download from LANCOM Systems.

This document describes the innovations within LCOS software release 5.22, as well as the modifications since release 5.08.

Warning

Please backup the configuration of your router before upgrading the firmware to LCOS 5.0. Due to extensive features it is not possible to downgrade to a previous firmware without using the backup configuration.

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

LCOS version 5.20 contains a new ADSL linecode for LANCOM 821+, 1521, 1721 and 1821. This new linecode supports ADSL2+ for LANCOM 821+, 1721 and 1821(from rev. E). For the LANCOM 1521, this linecode supports ADSL2. Needless to say that conventional ADSL interfaces are furthermore supported. Anyhow, there is an LCOS version 5.21 available, which solely uses the previous ADSL linecode, and may alternatively be used.

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 clicking on “Apply”.

2. New features, modifications and history

LCOS modifications from 5.20.0057 -> 5.22.0024

Corrections/modifications:

VPN:

- A VPN connection which uses routing tag 1 may now be initiated via D- or B-channel
- A polling failure for an internet connection will also establish a backup connection which was associated for a VPN connection
- Dynamic VPN V2 supports information transfer about which router acts as responder; this avoids overlapping on VPN negotiations.

Miscellaneous:

- Correction for the TCP packet authentication will avoid a stumbling TCP data stream (e.g. in telnet sessions)
- The firewall now recognizes multiple DNS requests from the same client which were sent using the same source port, and will assign these to the same session.
- Using RAS connections with callback it is again possible to assign an IP address from a pool.
- Script commands will now be generated appropriate to the used language.
- The CRON table may now be filled correctly when using scripting.
- It is again possible to use passive FTP via LAN-LAN routing.
- Proxy-ARP may be used without blocking route for the own network.
- Multi-/broadcasts will no longer be redirected to other interfaces through an exclusively used DSLoL interface.
- An ICMP connection error on Plain IP connections will now trigger the VRRP backup case.
- A script may now be loaded into the device without using a final „exit“
- A VPN negotiation will now always be performed on the correct loadbalancing channel.

LCOS modifications from 5.08.0005 -> 5.20.0057

New Features:

VPN:

- Support for NAT Traversal
- A routing tag may now be set for each VPN connection to hereby define the route to the remote gateway
- Reworked polling for dynamic VPN. Forwarding of the IP to poll is no longer dependent on the settings of the LANCOM DNS / NBNS

WLAN:

- It is now possible to set bandwidth limitations for WLAN clients (802.11h)
- The WLAN may now be restricted to only accept logins from client bridges
- Authenticating to a RADIUS server (802.1x or MAC verification) will now transmit the BSSID (Accesspoint name) and the SSID
- WLAN beacons will now be sent with 1MBit/s, thus enhancing the WLAN range
- An SNMP trap will be sent if the transmit power is too high in consideration of the antenna gain

Routing:

- It is now possible to map the same IP address to different MAC addresses. This makes loadbalancing possible in Austria, too
- Support for VRRP (Virtual Router Redundancy Protocol) as defined in RFC 3768
- Support for spanning tree protocol
- Support for RIP on the WAN side of the router
- During a DHCP request it is now possible to see if the request was sent by a LANCOM router
- A user may utilize a self defined DHCP user class

Miscellaneous:

- VLAN tagging ID is now configurable
- VLAN is now available on the DSLoL interface
- Integration of a PPPoE server
- Possibility to assign DSLoL to a particular interface
- The IP address verification within the firewall may be aggravated
- Support for Option UMTS cards for the LANCOM 3x50 (3550 as from MOD-D1)
- Support for the following UMTS cards besides the Novatel U530/U630:
 - Telekom Multimedia NetCard GPRS/UMTS/WLAN: Option GT Fusion
 - Telekom Multimedia NetCard GPRS/UMTS: Option GT 3G Quad
 - Vodafone Mobile Connect 3G/WLAN/GPRS datacard: Option GT Fusion
 - Original Option Globe Trotter 3G Quad
- LANCOM 821+, 1721, 1821 (as from rev. E): support for ADSL2+
- LANCOM 1521, 1821 (up to rev. D): support for ADSL2
- For current LANCOM devices with more than one LAN interface (not: 1621, 821, 800+, 1611, 4x00, 60xx) it is now possible to assign the DMZ to a particular switch port
- It is possible to specify a 6-digit PIN within a UMTS device

Corrections/modifications:

VPN:

- It is now possible to use identical passwords for several VPN remote stations in pre-negotiation
- Polling table dimension adapted to the various VPN options

WLAN:

- Better channel selection handling when using DFS results in a quicker wireless reconnection between master and slave accesspoint
- 802.1x negotiations will now be shown in the syslog
- If more than eight clients are authenticated to an access point, notification now works for all clients, for which data had been buffered while being in powersaving mode

Routing:

- RIP update working even if the device is in a backup state using channel bundling
- The LANCOMs Intranet IP address may now be pinged from telnet, even with activated firewall
- Connecting to a web server within the LAN is now possible by using an analog RAS connection
- Disconnecting a MultiPPPoE DSL connection will not affect other internet connections

Miscellaneous:

- Firewall filters for MAC addresses on plain IP connections working again
- Configuration access via SSH and SSL may now be restricted to VPN, too
- IP masquerading ports will be reused soonest after twice the maximum segment lifetime has elapsed
- PPTP connection management reworked
- Connection clearing reworked
- The „readscript“ command may now be invoked using miscellaneous telnet paths
- A config reset now deletes all certificates within the device and the status message
- Reworked connection time calculation
- A change of the retry time for email delivery will now be immediately effective
- Using two DHCP servers within the same network will delete a client's IP from the first server, when the second server has allocated the IP address to the client
- The name of a DSL connection layer may now contain up to 9 characters
- No more device booting at ISDN hardware failure
- Duplicate dial-in's on the DSL interface will now be suppressed
- Fixed ASDL synchronisation problems
- Fixed miscellaneous LCOS crashes when using ISDN backup
- In a UMTS device it is now possible to specify a 6-digit PIN
- In case of an overload of the DSL provider's network the so marked packets will no longer be discarded in the device
- The configuration lock now also works for SNMP requests not containing the correct password

3. Remarks

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.