



Overview LANCOM Software Version 6.24

October 2006

© 2006, LANCOM Systems GmbH

www.lancom-systems.com

LC.OS 6.24
[LANCOM OPERATING SYSTEM]

LANCOM
Systems

Introduction

LCOS 6.24 *[LANCOM OPERATING SYSTEM]*

The LANCOM operating system LCOS and the corresponding management tools regularly provide free new functions to all LANCOM routers, access points and gateways.

LCOS version 6.24 is focussed on security for wireless LAN networks.

In the following pages we would like to introduce you to the new possibilities for visualizing your wireless LAN to help you to maintain full control over the security and availability of your WLAN installations.

You will also find a short description of the new VoIP, VPN and management functions provided to you by LCOS 6.24.



Highlights LCOS 6.24

LCOS 6.24

[LANCOM OPERATING SYSTEM]

WLAN

- Background scanning of all WLAN channels
- To detect external access points and clients

VoIP

- New voice codec support
- Integration of remote SIP clients

VPN

- Automatic learning from remote networks – proadaptive VPN
- Automatic VPN keep-alive

LANconfig / LANmonitor / WEBconfig

- WLANmonitor with rogue AP detection / rogue client detection
- Script file export from LANconfig
- New Internet Access Wizard in WEBconfig



WLAN: What is rogue AP detection?

WLAN devices that make unauthorized attempts at accessing a wireless LAN by posing as an access point (AP) or client are called rogues.

The following dangers can arise through rogue APs or clients:

- Disturbance of your own WLAN network
 - By transmissions on the same channel
 - Own clients logging in to external access points
- Break-in attempts / security loopholes
 - External (or poorly configured) access points positioned in your own network

LCOS 6.24 features the following functions for detecting all WLAN stations within range:

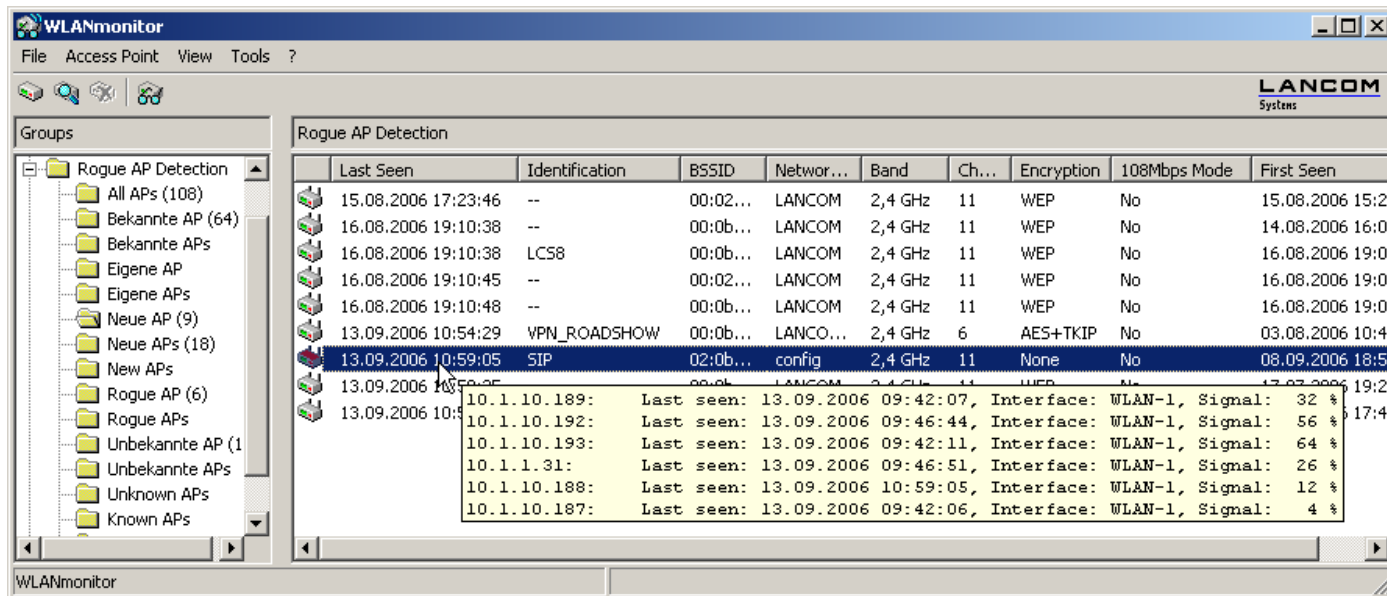
- Background scanning
 - Brief switching (just a few ms) to other channels without interrupting the existing wireless connection
 - Across the entire frequency band as set (2.4 or 5 GHz)
- Client detection
 - Detection of WLAN clients based on their probe requests



WLAN: Detection of external access points

Information about all WLAN access points found within range can be displayed as follows:

- Channel used, network name (SSID), and the encryption method in use
- Signal strength of a rogue at the access points which detected it



The screenshot shows the WLANmonitor application window. The main pane displays a table of detected access points under the 'Rogue AP Detection' group. A tooltip is shown over a selected entry, providing detailed information for a specific access point.

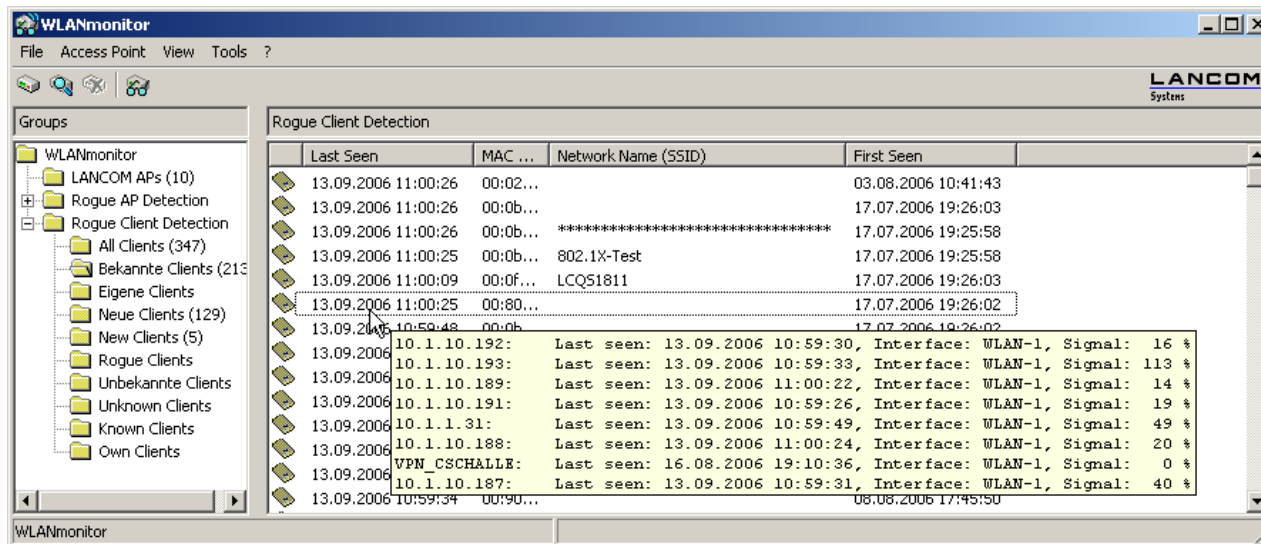
Last Seen	Identification	BSSID	Networ...	Band	Ch...	Encryption	108Mbps Mode	First Seen
15.08.2006 17:23:46	--	00:02...	LANCOM	2,4 GHz	11	WEP	No	15.08.2006 15:20
16.08.2006 19:10:38	--	00:0b...	LANCOM	2,4 GHz	11	WEP	No	14.08.2006 16:00
16.08.2006 19:10:38	LCS8	00:0b...	LANCOM	2,4 GHz	11	WEP	No	16.08.2006 19:00
16.08.2006 19:10:45	--	00:02...	LANCOM	2,4 GHz	11	WEP	No	16.08.2006 19:00
16.08.2006 19:10:48	--	00:0b...	LANCOM	2,4 GHz	11	WEP	No	16.08.2006 19:00
13.09.2006 10:54:29	VPN_ROADSHOW	00:0b...	LANCO...	2,4 GHz	6	AES+TKIP	No	03.08.2006 10:40
13.09.2006 10:59:05	SIP	02:0b...	config	2,4 GHz	11	None	No	08.09.2006 18:50
13.09.2006 10:59:05	10.1.10.189:	Last seen: 13.09.2006 09:42:07,	Interface: WLAN-1,	Signal: 32 %				
13.09.2006 10:59:05	10.1.10.192:	Last seen: 13.09.2006 09:46:44,	Interface: WLAN-1,	Signal: 56 %				
13.09.2006 10:59:05	10.1.10.193:	Last seen: 13.09.2006 09:42:11,	Interface: WLAN-1,	Signal: 64 %				
13.09.2006 10:59:05	10.1.1.31:	Last seen: 13.09.2006 09:46:51,	Interface: WLAN-1,	Signal: 26 %				
13.09.2006 10:59:05	10.1.10.188:	Last seen: 13.09.2006 10:59:05,	Interface: WLAN-1,	Signal: 12 %				
13.09.2006 10:59:05	10.1.10.187:	Last seen: 13.09.2006 09:42:06,	Interface: WLAN-1,	Signal: 4 %				



WLAN: Client detection

Information about all WLAN clients found within range can be displayed as follows:

- MAC address, name and signal strength of a rogue client at the access points which detected it



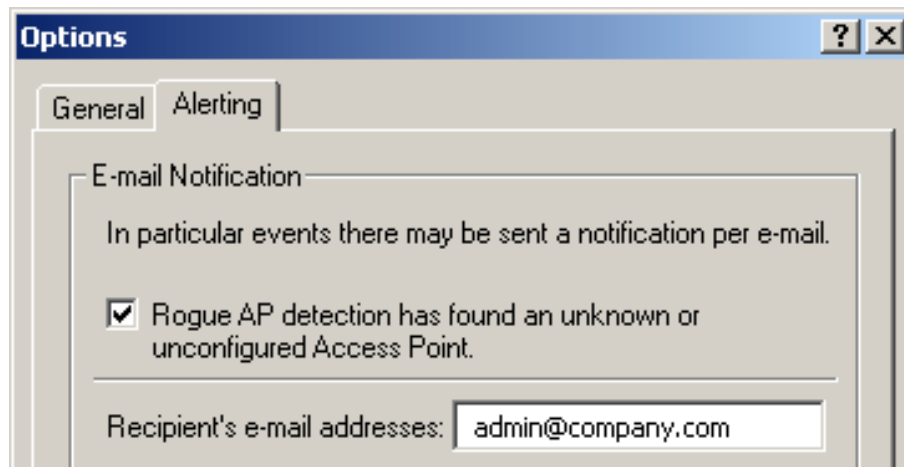
The screenshot shows the LANCOM WLANmonitor application window. The left sidebar displays a tree view of groups, including 'Rogue Client Detection'. The main window displays a table of detected clients with the following columns: Last Seen, MAC, Network Name (SSID), and First Seen. Below the table, a detailed view of a selected client is shown, including its IP address, last seen time, interface, and signal strength.

Last Seen	MAC ...	Network Name (SSID)	First Seen
13.09.2006 11:00:26	00:02...		03.08.2006 10:41:43
13.09.2006 11:00:26	00:0b...		17.07.2006 19:26:03
13.09.2006 11:00:26	00:0b...	*****	17.07.2006 19:25:58
13.09.2006 11:00:25	00:0b...	802.1X-Test	17.07.2006 19:25:58
13.09.2006 11:00:09	00:0f...	LCQ51811	17.07.2006 19:26:03
13.09.2006 11:00:25	00:80...		17.07.2006 19:26:02
13.09.2006 10:59:48	00:0b...		17.07.2006 19:26:02
13.09.2006	10.1.10.192:	Last seen: 13.09.2006 10:59:30, Interface: WLAN-1, Signal: 16 %	
13.09.2006	10.1.10.193:	Last seen: 13.09.2006 10:59:33, Interface: WLAN-1, Signal: 113 %	
13.09.2006	10.1.10.189:	Last seen: 13.09.2006 11:00:22, Interface: WLAN-1, Signal: 14 %	
13.09.2006	10.1.10.191:	Last seen: 13.09.2006 10:59:26, Interface: WLAN-1, Signal: 19 %	
13.09.2006	10.1.1.31:	Last seen: 13.09.2006 10:59:49, Interface: WLAN-1, Signal: 49 %	
13.09.2006	10.1.10.188:	Last seen: 13.09.2006 11:00:24, Interface: WLAN-1, Signal: 20 %	
13.09.2006	VPN_CSCHALLE:	Last seen: 16.08.2006 19:10:36, Interface: WLAN-1, Signal: 0 %	
13.09.2006	10.1.10.187:	Last seen: 13.09.2006 10:59:31, Interface: WLAN-1, Signal: 40 %	
13.09.2006	10:59:34 00:90...		08.08.2006 17:45:50



WLAN: Rogue AP detection - management

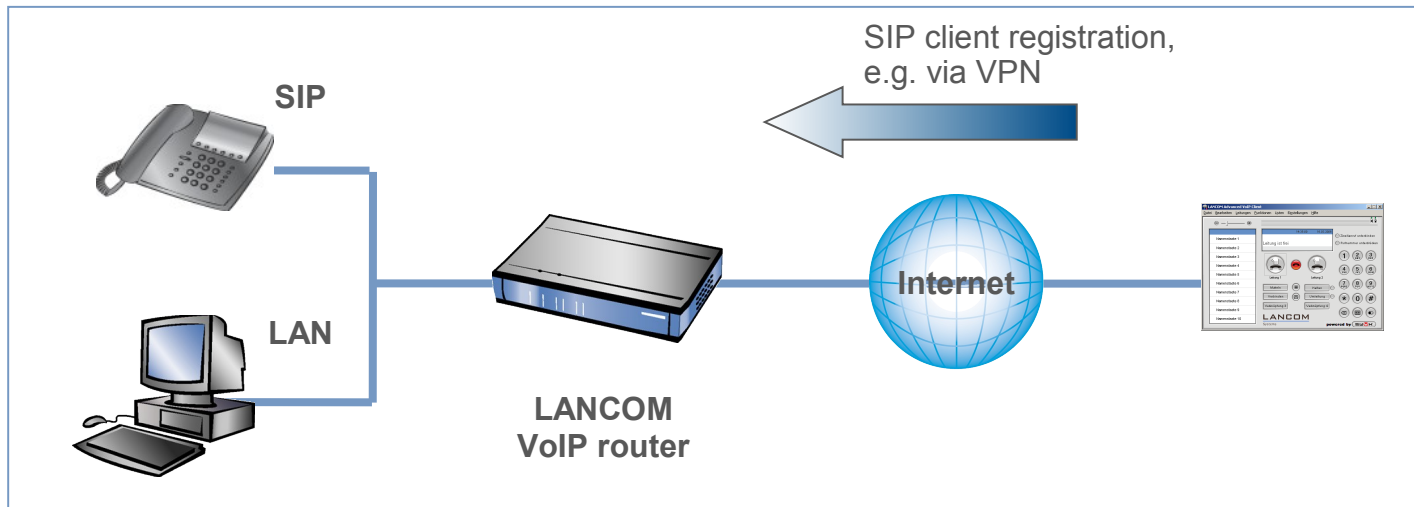
- All discovered access points can be categorized into groups by moving them into folders with drag & drop (e.g. own APs, unknown APs, etc.)
- If new rogue access points are detected, WLANmonitor can provide e-mail notification, if desired.



VoIP: Integration of remote SIP clients

SIP clients can now be integrated into the VoIP Call Manager over WAN connections

- For example, mobile users with a notebook and SIP client
- The same VoIP Call Manager functions are available to them as enjoyed by local terminal equipment (depending on the model: SIP, ISDN or analog)



VoIP: New voice codecs

The codec G.729a is especially designed for transmissions over low-bandwidth connections.

Properties of this codec are as follows:

- High compression (8 kbps net data rate, 32 kbps gross IP data rate) with clearly audible speech
- Widespread in VoIP terminal equipment

As opposed to non-compressed voice signals (64 kbps net, 80 kbps at IP level), an ADSL connection with 128 kbps upstream can support 4 parallel voice calls instead of just one.

If, however, the highest possible quality of voice transmission is important, then the codec G.722 can be used.

- Voice quality superior to ISDN due to 16 kHz sampling rate

These new voice codecs are available for "VoIP-ready" devices with the "VoIP Advanced Option" and are activated as standard in all "VoIP-integrated" products.



VPN: What is "proadaptive VPN"?

In cases where large network infrastructures are coupled via VPN, it is advantageous for the costs and effort in configuring a new subnetwork to be limited to the local VPN router and that the central dial-in router configuration remains unchanged.

If simplified dial-in with certificates is activated in the LANCOM router at the headquarters, then a remote router can communicate its own network to the VPN router at headquarters during the IKE negotiation in phase 2. No individual configuration is necessary.

The result: Simple roll-out of VPN installations!

- All VPN tunnels use a common configuration template
- Automatic learning of the remote network based on IPsec phase 2 information
- Access rights based purely on certificates
 - Temporary access for service providers & maintenance
 - Blockage with short-term certificates or CRLs



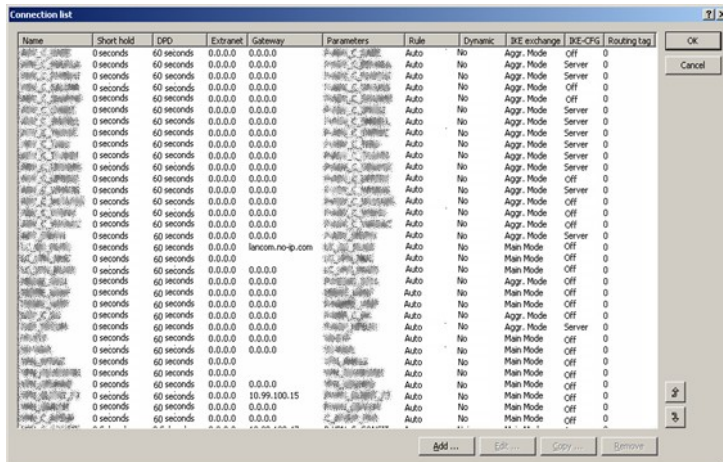
VPN: Proadaptive VPN - overview

No more inconvenient configuration of remote sites!

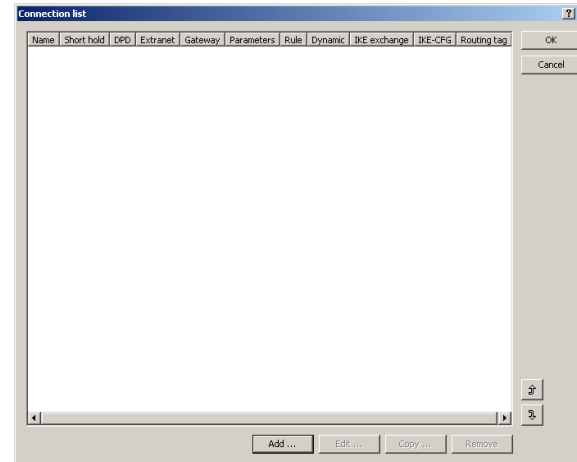
- The VPN gateway learns all of the required information during connection establishment
- Propagation of routes from VPN remote sites, e.g. per RIPv2
- Access can be revoked conveniently via the CRL

VPN connection list until now:

As of LCOS 6.24:



Name	Short hold	DPO	Extranet	Gateway	Parameters	Rule	Dynamic	IKE exchange	IKE-CFG	Routing tag
VPN_C_000001	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000001	Auto	No	Aggr. Mode	Server	0
VPN_C_000002	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000002	Auto	No	Aggr. Mode	Server	0
VPN_C_000003	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000003	Auto	No	Aggr. Mode	Server	0
VPN_C_000004	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000004	Auto	No	Aggr. Mode	Server	0
VPN_C_000005	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000005	Auto	No	Aggr. Mode	Server	0
VPN_C_000006	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000006	Auto	No	Aggr. Mode	Server	0
VPN_C_000007	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000007	Auto	No	Aggr. Mode	Server	0
VPN_C_000008	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000008	Auto	No	Aggr. Mode	Server	0
VPN_C_000009	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000009	Auto	No	Aggr. Mode	Server	0
VPN_C_000010	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000010	Auto	No	Aggr. Mode	Server	0
VPN_C_000011	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000011	Auto	No	Aggr. Mode	Server	0
VPN_C_000012	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000012	Auto	No	Aggr. Mode	Server	0
VPN_C_000013	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000013	Auto	No	Aggr. Mode	Server	0
VPN_C_000014	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000014	Auto	No	Aggr. Mode	Server	0
VPN_C_000015	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000015	Auto	No	Aggr. Mode	Server	0
VPN_C_000016	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000016	Auto	No	Aggr. Mode	Server	0
VPN_C_000017	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000017	Auto	No	Aggr. Mode	Server	0
VPN_C_000018	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000018	Auto	No	Aggr. Mode	Server	0
VPN_C_000019	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000019	Auto	No	Aggr. Mode	Server	0
VPN_C_000020	0 seconds	60 seconds	0.0.0.0	0.0.0.0	VPN_C_000020	Auto	No	Aggr. Mode	Server	0

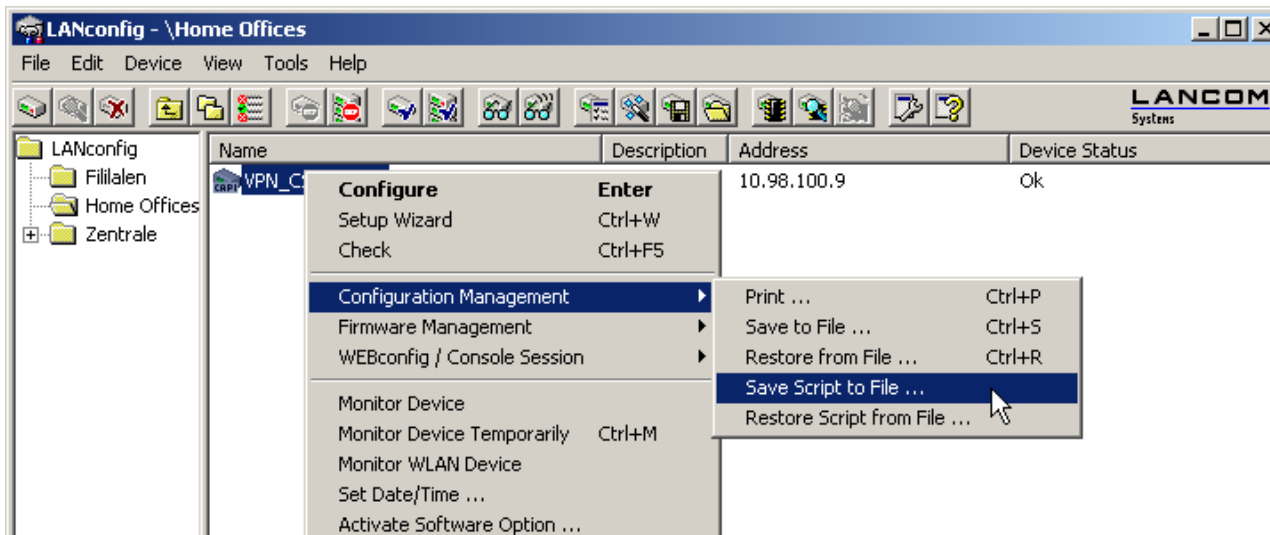


Name	Short hold	DPO	Extranet	Gateway	Parameters	Rule	Dynamic	IKE exchange	IKE-CFG	Routing tag
------	------------	-----	----------	---------	------------	------	---------	--------------	---------	-------------



Management: Scripts

- Configuration scripts can be saved from LANconfig and uploaded again
 - Unlike with configuration files, the script format has the advantage that entire or partial configurations can be exchanged between different device types and versions



Management: WEBconfig Wizard overhauled

- WEBconfig has a re-worked design and now has an even more convenient Internet Access Wizard to offer.



LANCOM
Systems

... connecting your business

VPN_NHAMEL (root)

(LANCOM 1722 VoIP (Annex B) 6.21.0024 / 08.08.2006)

Set up Internet access

Please enter your account data here.

These data should have been given to you by T-Online when your account was set up.

'Anschlusskennung'	<input type="text"/>
T-Online number	<input type="text"/>
'Mitbenutzerkennung'	<input type="text" value="0001"/>
Personal password	<input type="password"/>
(Repeat)	
Personal password	<input type="password"/>

🕒 9/14/2006 18:20

🔍 [Previous Page](#) ↻ [Entry Page](#) 🏠 [LANCOM Systems Homepage](#)



Further new functions and improvements

LCOS 6.24 *[LANCOM OPERATING SYSTEM]*

VoIP

- Tone-dialing (DTMF) by means of SIP INFO or RFC 2833
- Transfer of advice of charge (AOC) between the internal and external ISDN buses

WLAN

- 802.1x supplicant: Authentication of an access point in WLAN client mode at another access point via 802.1x (EAP-TLS, EAP-TTLS and PEAP)

VPN

- Extended Cisco interoperability in certificate-based IPSec installations by supporting an optional "CERTREQ" request
- Simplified setup of "always on" VPN connections (no need of separate ICMP connection monitoring)



Further new functions and improvements

LCOS 6.24 *[LANCOM OPERATING SYSTEM]*

Management

- Explicit language selection in LANconfig and LANmonitor
- Certificate-based SSH authentication (alternative to PSK)
- Device-specific setting of the communication protocol (TFTP, HTTP, HTTPS) in LANconfig
- Automatic daylight-saving time change of the time-server module
- "Snapshot" function to read out accounting data (transmission volumes) at certain billing intervals, including sorting according to station
- New Internet Access Wizard in WEBconfig
- New design for the WEBconfig graphical user interface



Further information

More than 40 new pages of detailed information about all new functions in LCOS 6.24 are available in the addendum to the LCOS reference manual

- Available for free from <http://www.lancom-systems.com/>

The detailed revision history is in the release notes for LCOS 6.24

LCOS 6.24
[LANCOM OPERATING SYSTEM]



Service and Support

We wish you every success with your new LANCOM product!


We look forward to your **praise and criticism, suggestions or questions** to info@lancom.de.

The latest information about Service and Support can be found on our Support flyer, our Internet site or from our **Knowledge Base** under www.lancom-systems.de/eu/support.

If the manual and our current support themes in the Internet are of no help to you, then our **Support Hotline** is available to you in Germany on work days from 9:00 – 17:00h under 0900-1-LANCOM (= 0900-1-526266) (1.24 € / Min. from German landlines).

Your LANCOM Systems Team



The image features a blue header bar at the top. The main content area is a light blue, semi-transparent graphic of a server rack with a LANCOM network switch in the foreground. The word "LANCOM" is written in large, bold, black, sans-serif capital letters across the middle of the rack. A horizontal blue line is positioned directly below the "LANCOM" text. Below this line, the word "Systems" is written in a smaller, black, sans-serif font. The background of the rack graphic shows a perspective view of server units.

LANCOM

Systems