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LANCOM Systems

Overview of LANCOM software version 8.0
June 2010

LCOS 8.0 [LANCOM OPERATING SYSTEM]

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

LCOS 8.0 stands for innovative new security functions while improving usability at the same time.

Standing out as an example of this is the new Content Filter technology from LANCOM, which provides transparency for users and a conveniently easy configuration for administrators.

IPsec over HTTPS takes VPN to places that were impossible to reach until now; for example, to mobile clients in third-party networks behind routers which block IPsec, or in UMTS/3G networks with restrictions.

Read on for more on the most important new functions and improvements.



LANCOM Software 8.0

Highlights

Feature Notes 8.0

June 2010

LCOS 8.0 [LANCOM OPERATING SYSTEM]

- **Content Filter** – Practical and tailor-made for enterprise scenarios; easy-to-operate and high-speed web-access control improves security and productivity for your company, and it conforms to legal requirements for the protection of minors.
- **IPsec over HTTPS** – With this innovative extension, SSL encapsulation-based VPN now works even where IPsec VPN formerly failed because of VPN filters. You don't have to change your configuration, VPN client or router.
- **LCMS Usability Upgrade** – Modernized versions of the highly praised LANCOM management software LANconfig and (W)LANmonitor. New look & feel.
- **USB setup** – LANCOM routers with USB interface can load firmware and configuration files from USB memory while in factory defaults.



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LANCOM Software 8.0

Further improvements

Feature Notes 8.0

June 2010

- **Alternative boot configuration** – Configurations can be stored as alternatives to the factory settings; useful for rollouts/commissioning
- **SSH client** – Management of third-party components from a LANCOM router via SSH, also by means of SSH login to the LANCOM
- **Load balancing now also for WLAN controllers** – Redundant connection of WLAN controllers to multiple WAN lines
- **Channel load display in WLC mode and WLANmonitor** – Display of channel load at the access points
- **RADIUS accounting for each WLAN SSID** – Allocation to SSIDs as configured from the WLAN controller
- **T-Entertain Wizard upgraded with IPTV configuration** – Configuration of IPTV, also for non-VDSL connections
- **Alternative DHCP server for DHCP forwarding** – Support of redundant upstream DHCP servers
- **Improved security of SSL/TLS** – Improved key negotiation with SSL/TLS as per RFC 5746
- **Basic HTTP/HTTPS server** – Provisioning of HTML pages or images, e. g. for Public Spot Option, stored on USB media (FAT)
- **DFS according to ETSI 301 893 v. 1.5** – Support for radar pattern recognition in WLAN as recommended from 07/01/2010 on

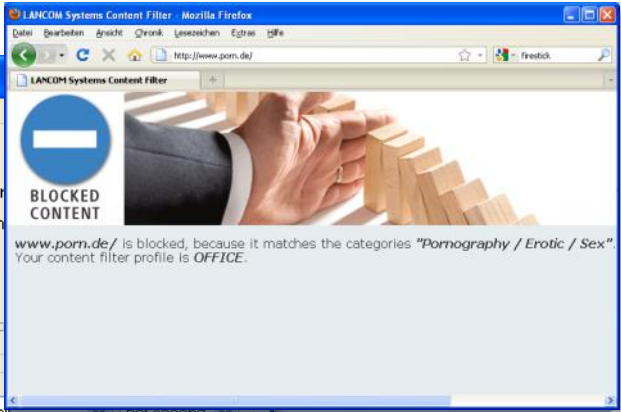
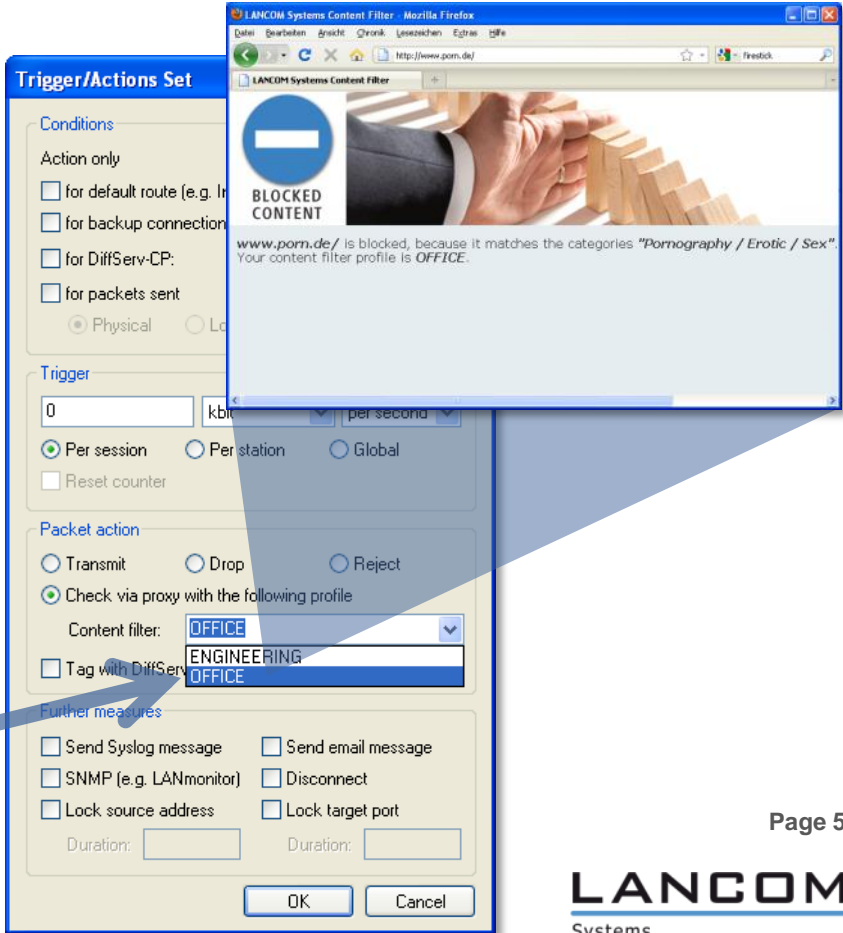
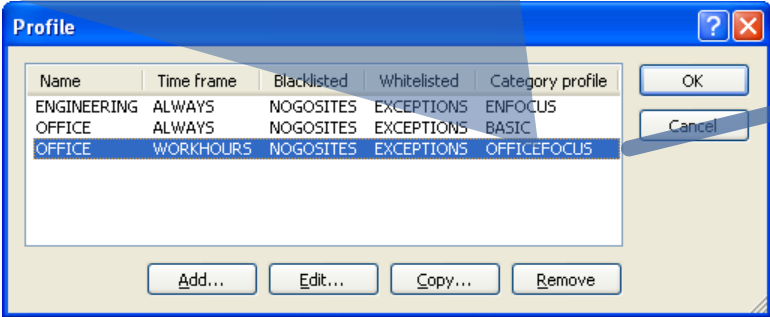
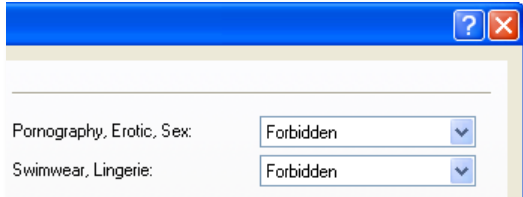


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Content Filter Option (1)

Filter out undesirable web content when surfing

- Requested **URLs** (and IP addresses) can be sent to a data center **for categorization**
- URLs and classifications are stored in the **internal cache**
- **Flexible allocation** of Content Filter profiles by means of **firewall rules** (e.g. to differentiate between WAN/intranet content or user groups)
- **Convenient definition** of profiles and filter categories in **LANconfig** and with standard profiles



Content Filter Option (2)

Profiles with time limits and different category profiles

- Profiles with **different category profiles** depending on the time, e.g. **for working times and leisure time**
- **Time limits** can be defined with **multiple entries**
- In case of overlap, prohibition takes priority
(Order: "**Forbidden**", "**Override**", "**Allowed**")

The screenshot displays three overlapping windows from the LANCOM software interface:

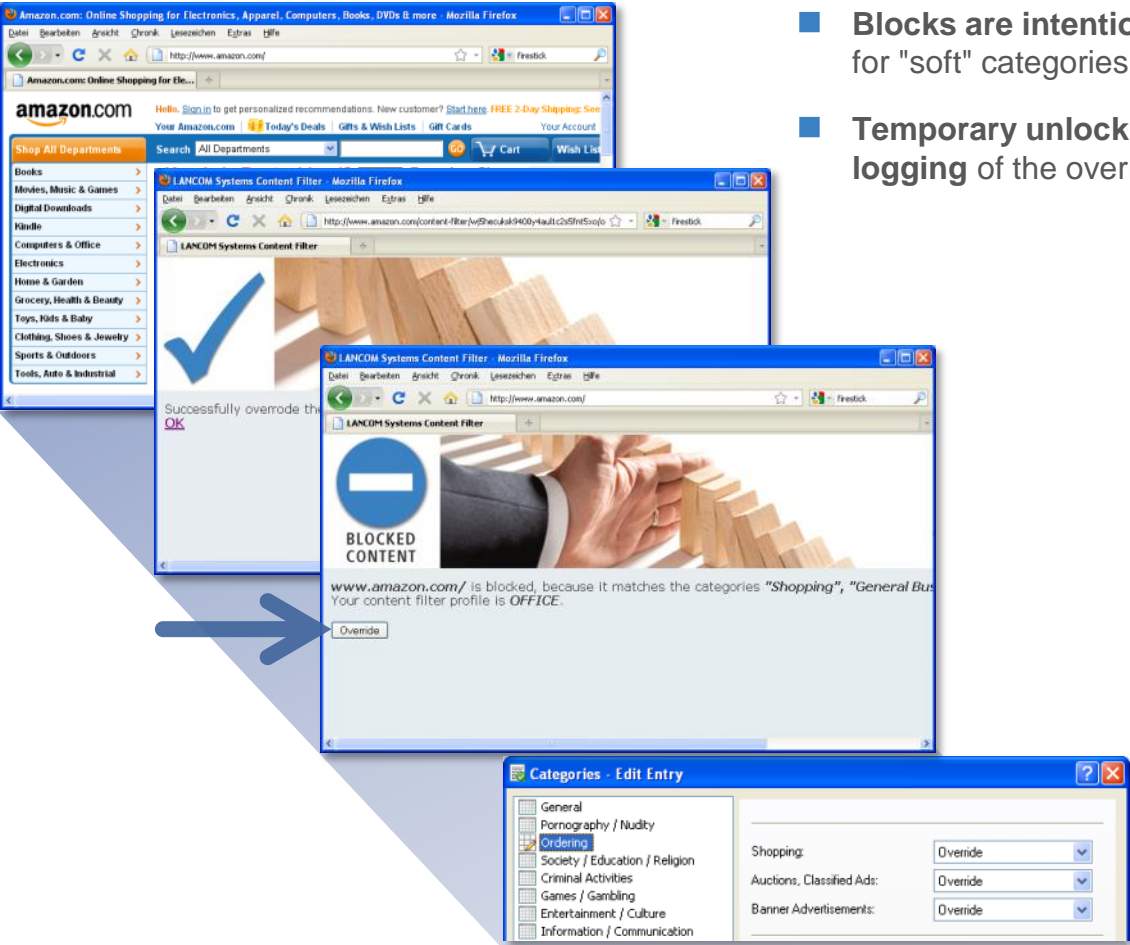
- Time frame - Edit Entry (top left):** Shows a configuration for a time frame named "WORKHOURS" with a start time of 08:00 and a stop time of 12:30.
- Time frame - Edit Entry (middle left):** Shows a configuration for a time frame named "WORKHOURS" with a start time of 13:30 and a stop time of 18:00. It includes a "Weekdays" section with checkboxes for Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, and Holiday.
- Profile - Edit Entry (center):** Shows a configuration for a profile named "OFFICE" with the "WORKHOURS" time frame selected. It includes dropdown menus for "Blacklisted" (set to "NOGOSITES"), "Whitelisted" (set to "EXCEPTIONS"), and "Category profile" (set to "OFFICEFOCUS").
- Profile (top right):** A table listing profiles and their configurations. The "OFFICE" profile is highlighted.
- Categories (bottom):** A table showing category profiles and their associated actions for different content categories.

Name	Time frame	Blacklisted	Whitelisted	Category profile
ENGINEERING	ALWAYS	NOGOSITES	EXCEPTIONS	ENFOCUS
OFFICE	ALWAYS	NOGOSITES	EXCEPTIONS	BASIC
OFFICE	WORKHOURS	NOGOSITES	EXCEPTIONS	OFFICEFOCUS

Category profile	Pornography, Erotic, Sex	Swimwear, Lingerie	Shopping
OFFICEFOCUS	Forbidden	Forbidden	Override
BASIC	Forbidden	Forbidden	Override
ENFOCUS	Forbidden	Forbidden	Forbidden

Content Filter Option (3) "Override" mechanism

- "Overrides" are a practical aid for necessary exceptions
- Blocks are intentionally "ignored" for "soft" categories
- Temporary unlocking for users and logging of the overrides



Content Filter Option (4) Availability

The image shows a screenshot of the LANCOM website's registration page for demo licenses. The page includes a navigation menu, a header with 'NETWORK CONNECTIVITY' and 'connecting your business', and a main content area titled 'Demo licenses for options'. The registration form contains fields for 'Device serial number' (400054506000054), 'Device Type' (LANCOM 1722 VoIP (Annex B)), and 'Demo License Type' (DEMO Content Filter valid until 10-06-11). Below the form is a 'Register License . . .' button. A 'Software-Option' dialog box is overlaid on the page, showing a 'Register' section with a 'License key' field (containing 'CARR-J5ZT-CBMM-C5U2-7E14') and a 'Register Demo License . . .' button. The dialog also has an 'Activate' section with an 'Activation key' field (containing 'CARR-J5ZT-CBMM-C5U2-7E14') and 'OK' and 'Cancel' buttons.

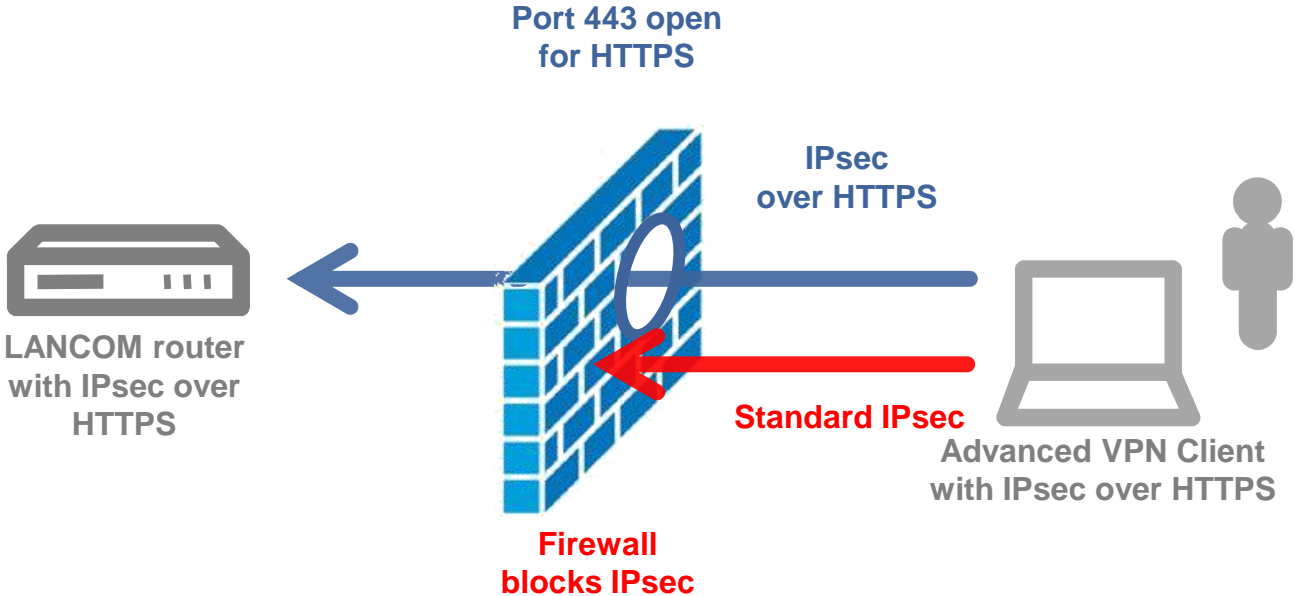
- The LANCOM **Content Filter** is a **software option** sold separately for LANCOM routers, gateways and WLAN controllers
- Software option **suitable for most current router models but not for all** (compare product web page)
- **Cost-free, time-limited demo license** to test the Content Filter
- Automated process to obtain a **demo license with a button in LANconfig** at „Activate Software Option...“
- Further **information and request for a demo license** on the LANCOM website at

www.lancom.eu/contentfilter

IPsec over HTTPS (1)

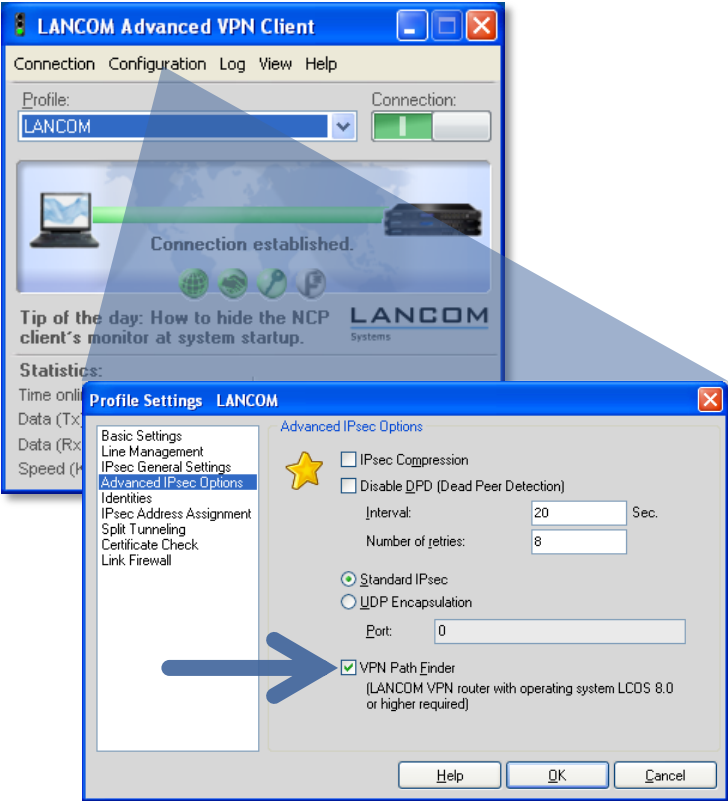
SSL encapsulation for IPsec

- **SSL encapsulation of IPsec** traffic and transport via TCP over port 443 (as with HTTPS)
- **Overcomes NAT gateways and firewalls** that block IPsec, such as with UMTS/3G providers, hotspots, etc.
- Works for **client-to-site** connections (LANCOM Advanced VPN Client to LANCOM VPN routers)
- Also works **site-to-site** (from LANCOM router to LANCOM router)



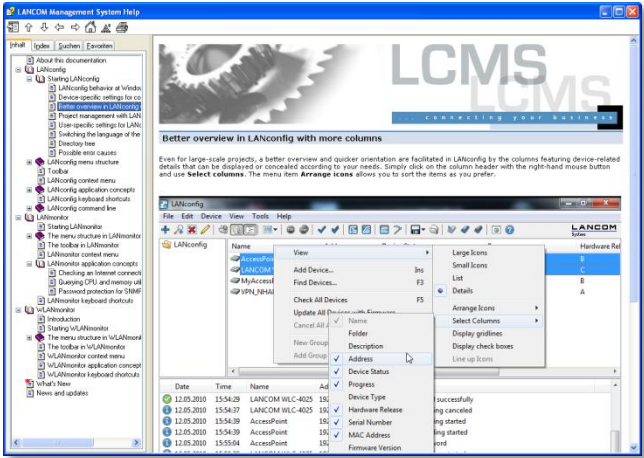
IPsec over HTTPS (2)

Ideal for mobile applications



- **Easy setup** of the LANCOM Advanced VPN Client by selecting "IPsec over HTTPS"
- **Automatic detection and switching** between plain IPsec and IPsec over HTTPS:
 - The initial **connection attempt is with IPsec** (less overhead)
 - If a standard IPsec connection **cannot** be established, then the Advanced VPN Client reverts to **IPsec over HTTPS** technology
- Available as of **version 2.22** of the LANCOM Advanced VPN Client (free update from version 2.2)

LCMS modernized New icons

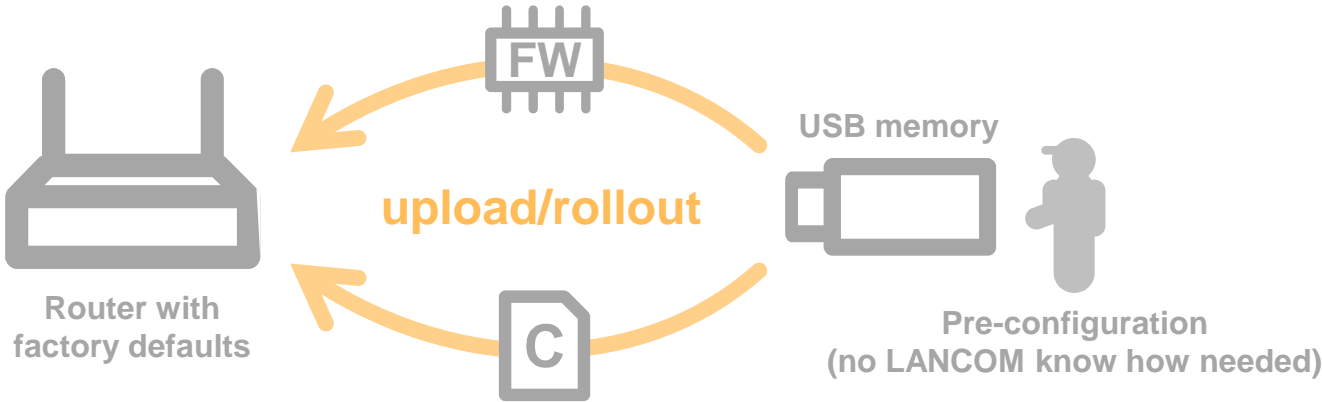


- All icons have been completely reworked in LANconfig, LAN/WLANmonitor and Trace
- High-resolution icons with more colors for a **more intuitive display** and conformity with corporate-design
- **Modernization** that does justice to current screen resolutions and user experience with other applications
- **Application help for LANconfig, LAN/WLANmonitor** with extensive explanations
- **How-To chapters** covering typical administrative tasks and hints for configuration
- **Directory, index and search** for extensive reading of topics related or quick help for specific operations

USB setup

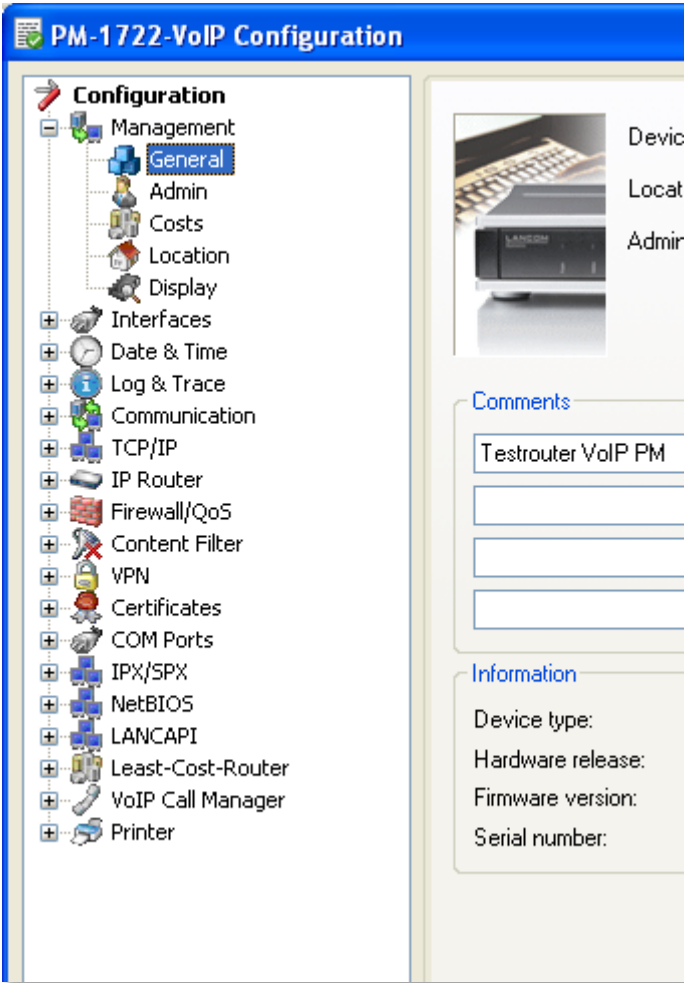
Upload of configuration and firmware from USB memory

- With LCOS 8.0 all routers with USB interface **can be configured automatically by simply inserting a USB memory***
- A router with factory defaults **checks for** appropriate **firmware** or **configuration** files on the USB memory
- Applicable firmware files are automatically uploaded when they are newer than the firmware versions in the device
- The USB setup mechanism **can be used for updates during operation as well** (switchable)



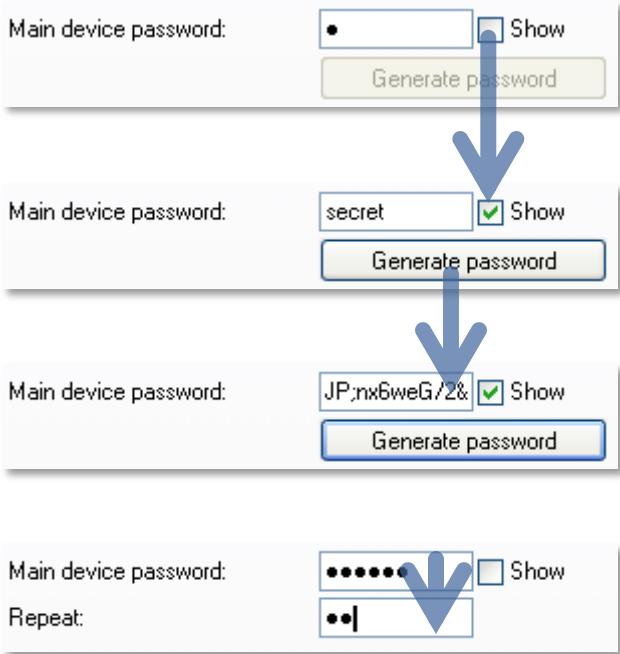
LANconfig

Tree view for fast access to the configuration pages

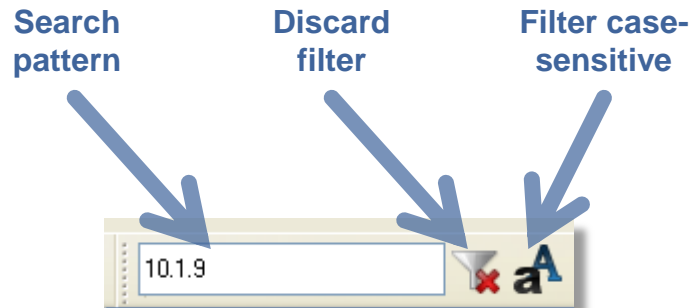


- **Tree view** with the same icons and structure as in WEBconfig
- **Fast access** to configuration pages, without any lists or tabs
- Automatic **compression of sections** when another page is selected

LANconfig Intelligent password field



- Single field for password entry with the option of **making the password visible** (e.g. to check the passwords as you enter them)
- If passwords are displayed, it is impossible to "steal" the password by copy & paste or with password sniffers (**increased security**)
- To motivate customers to use higher security, it is also possible to **automatically generate a password** (where this makes sense)
- If a password is renewed or changed, a **confirmation field** is displayed **immediately after** entering it – no additional window opens up after closing the dialog (so speeding things up for professionals)



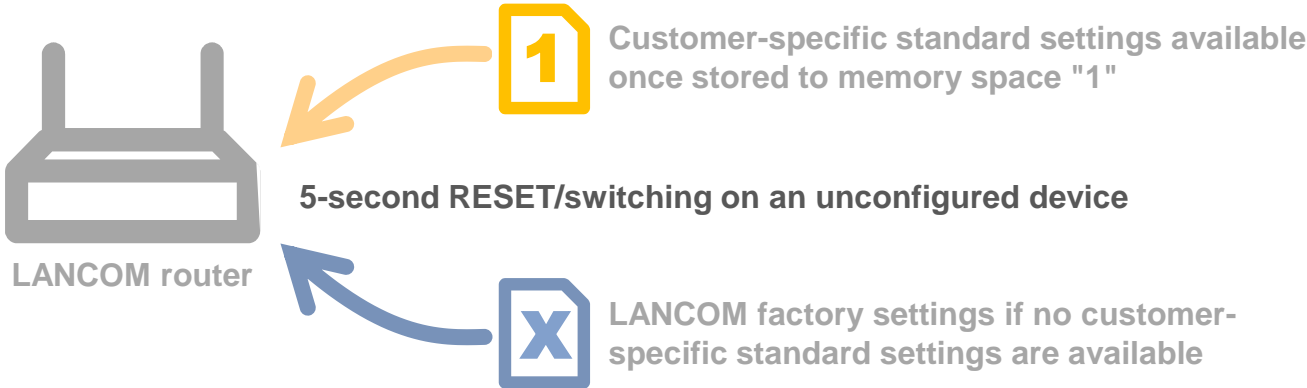
- Searches **any match** of the search pattern in device properties
- Has **immediate impact** on the folder view with each character typed in
- Searches the currently **selected folder** only
- Can be **combined with 'flat view mode'** to display all matches in selected and subsequent folders
- **Force exact matching** with capitalization symbol
- **Discard filter with one click**

Name	Address	Device Status	Progress	Device Type	Serial Number	MAC Address
ES-2126	10.1.90.44	Ok		LANCOM ES-2126	40003101A000...	00:A0:57:14:0E:57
ES-2126	10.1.90.45	Ok		LANCOM ES-2126	40003101A000...	00:A0:57:14:0D:FD
ES-2126	10.1.90.46	Ok		LANCOM ES-2126	40003101A000...	00:A0:57:14:0E:8A
ES-2126	10.1.90.47	Ok		LANCOM ES-2126	40003101A000...	00:A0:57:14:0D:FC
ES-2126	10.1.90.48	Ok		LANCOM ES-2126	40003101A000...	00:A0:57:14:0D:FE
ES-2126+	10.1.90.42	Ok		LANCOM ES-2126+	400142302000...	00:A0:57:15:35:71
LANCOM ES-2126	10.1.90.37	Ok		LANCOM ES-2126	40003101A000...	00:A0:57:14:0E:22
Ludwigshafen	10.1.99.12					

Alternative boot configurations

Customer-specific standard settings

- LANCOM routers and access points can be programmed with persistent configurations (however many times the device is rebooted or reset) that contain **customer-specific standard settings for the boot procedure**
- By storing a configuration to **memory space "1"**, the LANCOM factory settings will be "overwritten" **with customer-specific standard settings**
- When resetting, a **short press (more than 5 seconds)** of the reset button initiates the
 - activation of **customer-specific standard settings**, assuming that a corresponding configuration has been saved to memory space "1",
 - **otherwise** (if memory space "1" is empty) the **LANCOM factory settings** are loaded as usual
- Additionally/alternatively a **rollout configuration** can be stored in memory space „2“ as well as a **standard certificate** for authentication (more details in reference manual)



We wish you every success with your LANCOM product and the new LCOS!

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

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

0900-1-LANCOM (= 0900-1-526266)

(1.24 €/min. from German landlines).

Your LANCOM Systems Team

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