Overview of LANCOM software version 7.6

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Highlights (1/2)

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

These are the main new functions and improvements:

- **Firewall –** Firewall re-design with a new graphical user interface for object-orientated configuration in LANconfig, backup trigger, new QoS settings (session limits, relative bandwidth settings)

- **WEBconfig –** Fully overhauled Web interface in LANconfig style for configuring LANCOM routers and access points

- **COM-port server and COM-port forwarding –** Devices connected to the serial port can be remotely controlled over any IP connection (RFC2217)

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Highlights (2/2)

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- **LANconfig –** Exchange of configuration files between similar devices, e.g. for migrating configurations from devices that are due to be replaced.

- **LL2M – LANCOM Layer 2 Management:** Rescue mechanism that allows the secure execution of commands via encrypted layer-2 packets

- **iPhone VPN access –** XAUTH client and server for VPN access to local networks via UMTS using the iPhone as of software version 2.0

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Other improvements

- **LANmonitor –** Export of support files with sysinfo, bootlog & configuration

- **HTTPS client –** For downloading firmware and configuration files

- **IPSec VPN backup –** Backup of VPN connections across hierarchy levels, e.g. in case of failure of a central VPN concentrator

- **Certificates –** New OpenSSL implementation with FIPS-140-certified algorithms

- **WLAN Controller –** Combined monitoring view of WLAN Controller clusters, internal storage of up to three script files (max. 64K)

- **Public Spot –** Support of public certificates and certificate chains

- **SIP proxy –** Configurable registration, monitoring and privacy method ("CLIR" in SIP) per line, "CLIR" for SIP user

- **Routing –** Routing tags learned from the routing table for ARF, and support of RIP sources with wildcards in names

- **PPP –** Choice of protocol for authentication

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Firewall – New graphical user interface
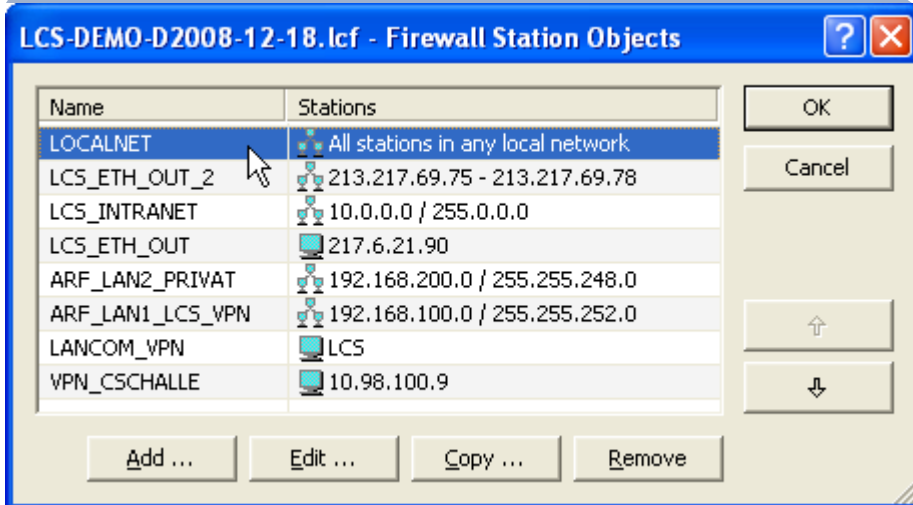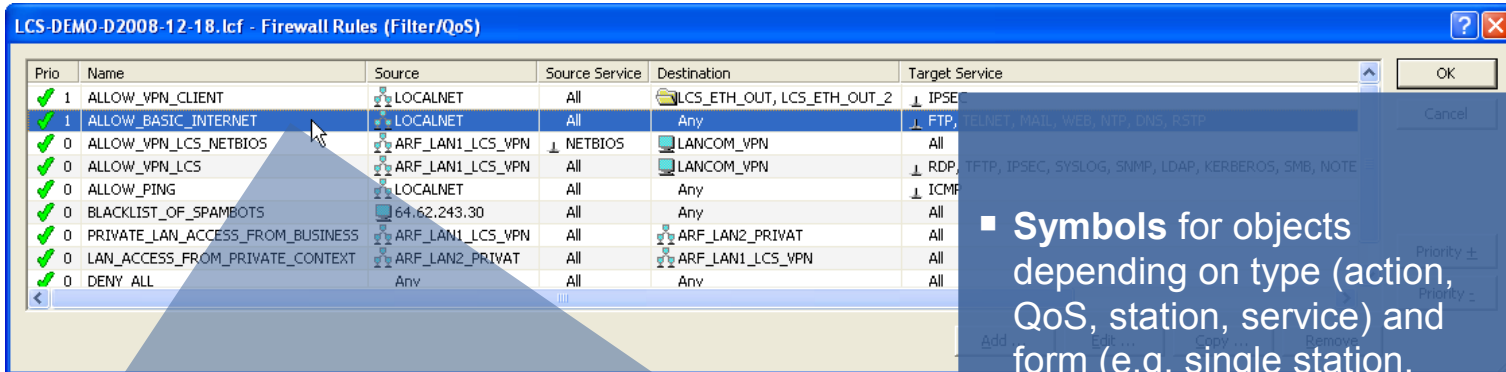
- **Symbols** for objects depending on type (action, QoS, station, service) and form (e.g. single station, subnet, collection of MAC addresses…)

- **Line display** with grid lines, alternating background color, or a combination of both

- **Tip**: Templates for object-oriented firewall rules can be downloaded from the Support KnowledgeBase on the LANCOM Web site
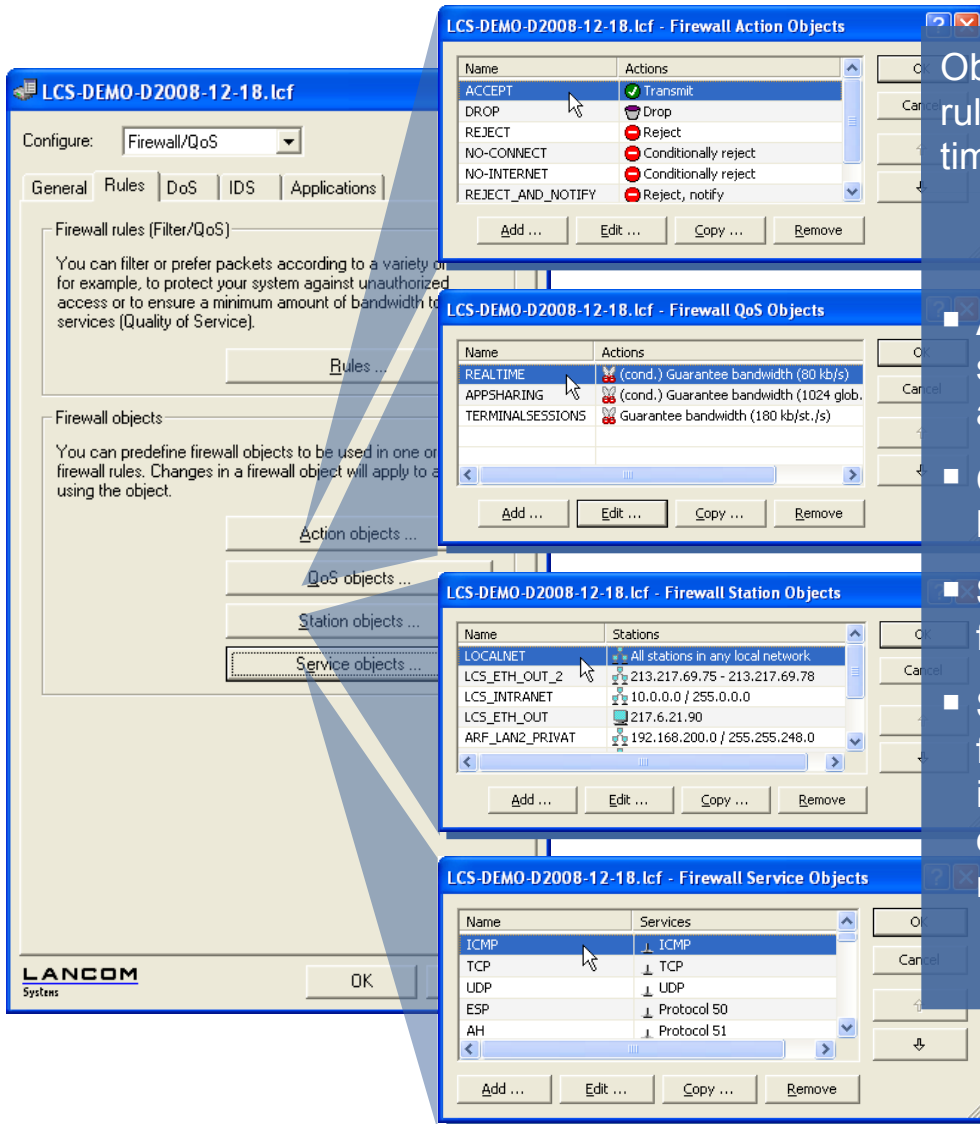
Firewall – Object-orientated configuration

Objects make it easy to define rules that can be used several times:

- **Action objects** for entire sets of limits, rejections and acceptances of connections

- **QoS objects** collect rules for bandwidths and priorities

- **Station objects** as wildcards for source/target definitions

- **Service objects** with rules for protocols and ports, including pre-defined service objects for many typical network applications

Firewall – New functions for backup & QoS

- Firewall rules depending on **backup status** (new condition)

➔ This makes it possible to activate a different set of rules when the backup line is being used, for example to minimize demands on bandwidth

- Allocation of relative **bandwidths in percent**

➔ Useful if the actual bandwidth of the line is unknown when carrying out the configuration

- **Limitation of bandwidth** for connections **per station**

- **Limitation** of the number **of sessions** per station or globally
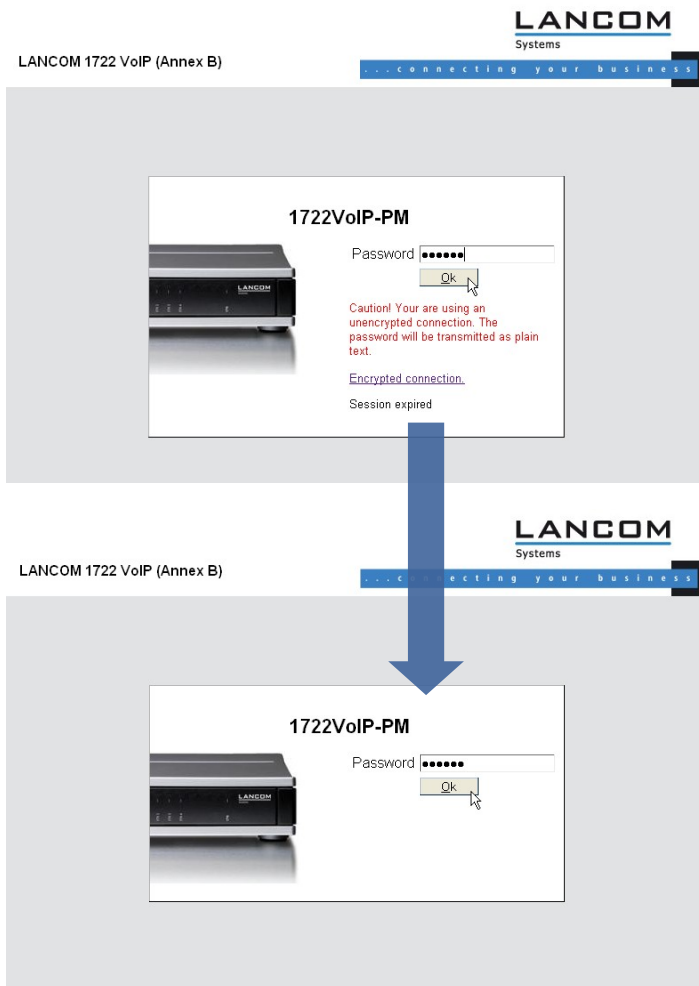
➔ For example, to slow file sharing or to limit server services

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WEBconfig – Login page with security notice

- **Login page** in new design with a picture of the device and its name in a separate login area

- **Device type** in the page header

- **Security notice** when accessing via an unsecured access with a link to an encrypted page

WEBconfig – New graphical user interface

- **Menu tree** for navigation with symbols and expanding/contracting folders

- **Side tabs** that collect related configuration pages, similar to LANconfig

- **Parameter setting** as in LANconfig: Division, grouping and fields

- **Setup Wizards** for the fast setup even of complex scenarios, e.g. when setting up VPN

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WEBconfig – New "System information" area

- **New: Device status** displaying the interfaces for an overview at a glance

- **New: Syslog** that displays the events stored recently to the main memory

- **New:** As of LCOS 7.6, each LANCOM device has factory settings for Syslog for diagnostic purposes

- **Tip:** Existing devices can be loaded with the same settings for Syslog by means of script (in the KnowledgeBase for download)

WEBconfig – Online help in the LCOS menu tree

- **Online help** for entries in the LCOS menu tree via the question-mark symbol (if an Internet connection is available)

- **Tip:** The **source path** to the help files can also be directed to a local HTTP server under "Setup/ HTTP/ Document root"

COM-port forwarding

- **Serial communication** over an IP connection, e.g. **via WLAN or VPN**
- When connected to the COM port (or USB port) of a LANCOM device, the **serial port is virtually extended** to a **target PC**
- A virtual **COM-port driver** (freely configurable under Windows) emulates the serial connector on the PC
- Compliant with **RFC2217** (Telnet Com Port Control Option)
- Applications: Automated building management, machine control, **remote maintenance of older PBX systems with serial port**

VPN

Internet

PC

1821+
Wireless ADSL

Wireless LAN

IAP-54 Wireless

RS-232 cable

Machine
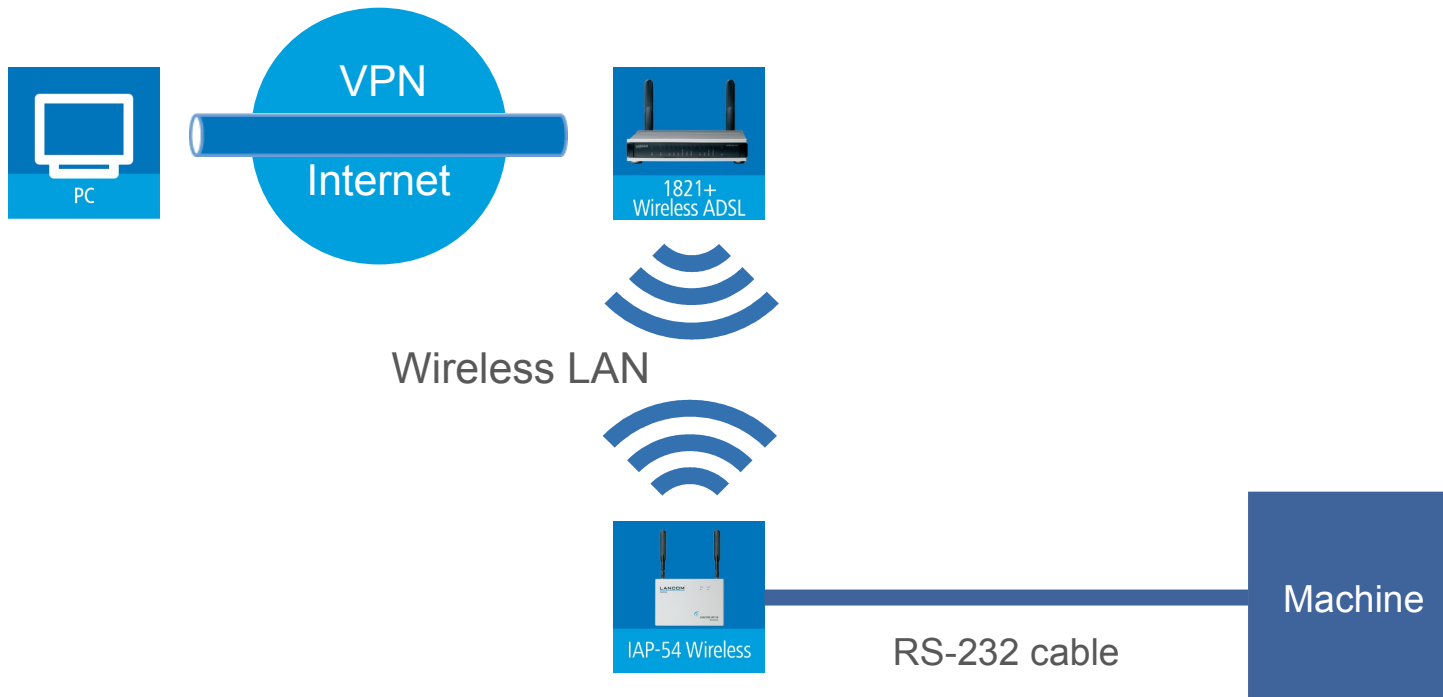
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LANconfig – Exchange of configurations

- Exchange of configurations **between different devices and software versions**, e.g. LANCOM 1821+ Wireless ADSL to LANCOM 1823 VoIP
- All that is required for the exchange is the **normal configuration file** (".lcf"), e.g. a backup file
- This allows **existing configurations** to be **migrated easily** to new devices (e.g. when replacing discontinued LANCOM products)
- Where configurations are standardized at multiple sites, but different devices are being used (e.g due to different interfaces), **a master configuration can** be **distributed between**the different systems.

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LANCOM 1821+

LANCOM 1821+ Wireless ADSL (Ann.B) - V7.6x D2008-09-12 T1147.lcf
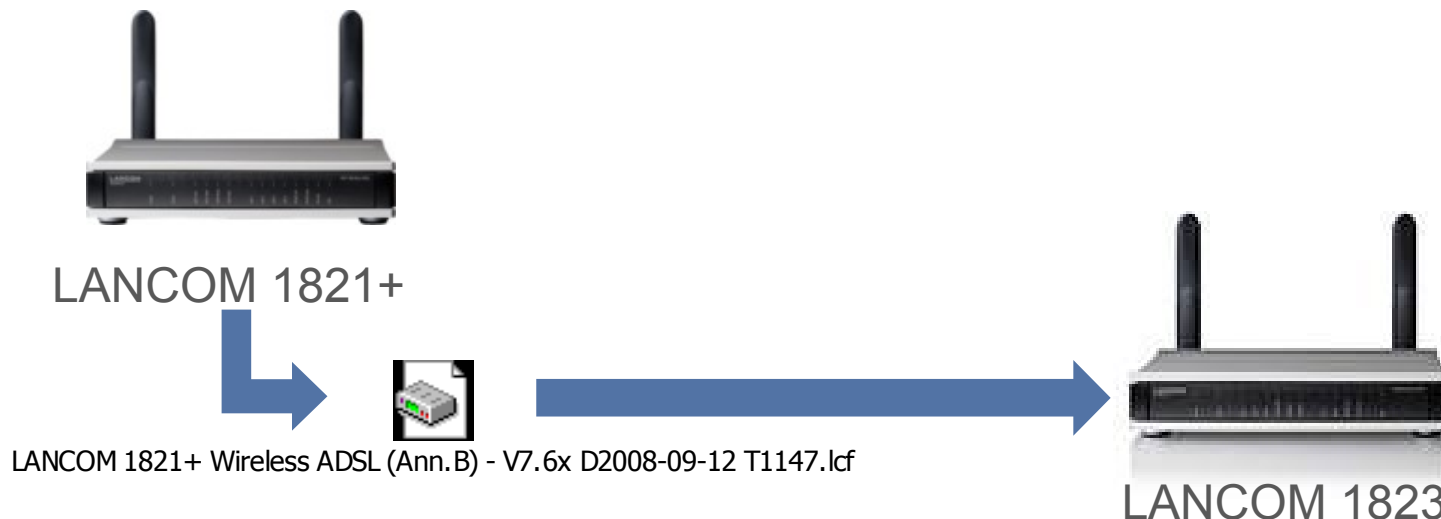
LANCOM 1823

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LL2M – LANCOM Layer -2 management:

- **LANCOM Layer-2 Management Protocol**: Encrypted Layer-2 packet that transmits executable script commands as payload to a LANCOM device

- With LL2M, **rescue & recovery** is possible for erroneously configured devices (e.g. VLAN errors), even if the error prevent admin access

- **Devices can be found** with ll2mdetect in the local segment (LAN, WLAN) and multicast or broadcast

- ll2mexec **allows to execute commands** at specific devices

- **Security** is equivalent to TLS-PSK with device passwords, making man-in-the-middle attacks impossible; to prevent a brute-force attack on the password (dictionary attack), we recommend that you use secure device passwords

- The **IPS mechanism** takes effect with a temporary lock in case of encryption with a wrong password, so preventing DoS attacks

Management via IP over VLAN/WLAN

LAYER 2

WLC-4025

L-305agn Wireless

LL2M exec
do other/
reboot-system

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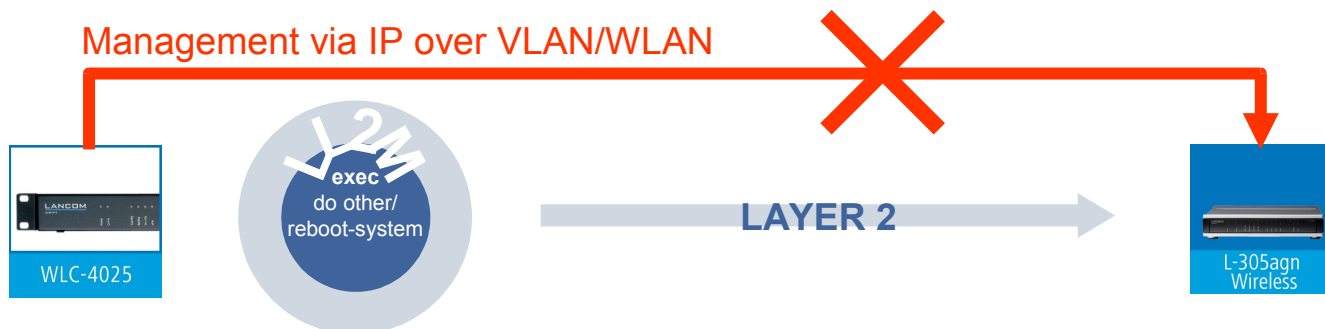
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iPhone VPN Support

Extended IKE Authentication (XAUTH)

- XAUTH is an extended authentication protocol can be used to provide additional username/password protection with IPSec connections

What is new in the LANCOM?

- XAUTH client and server in the LANCOM
- XAUTH can additionally be used for each VPN connection

How secure is XAUTH?

- Not supported by LANCOM are multiple VPN connections with the same keys (PSK or certificate) that rely on different XAUTH usernames/passwords only (this is a known security problem with XAUTH)
- A corresponding VPN entry is required for each XAUTH connection

What are the new possibilities with VPN?

- VPN connection with the Apple iPhone
- LANCOM as XAUTH client against rogue routers
- LANCOM as XAUTH server against rogue clients (e.g. Cisco Anyconnect)
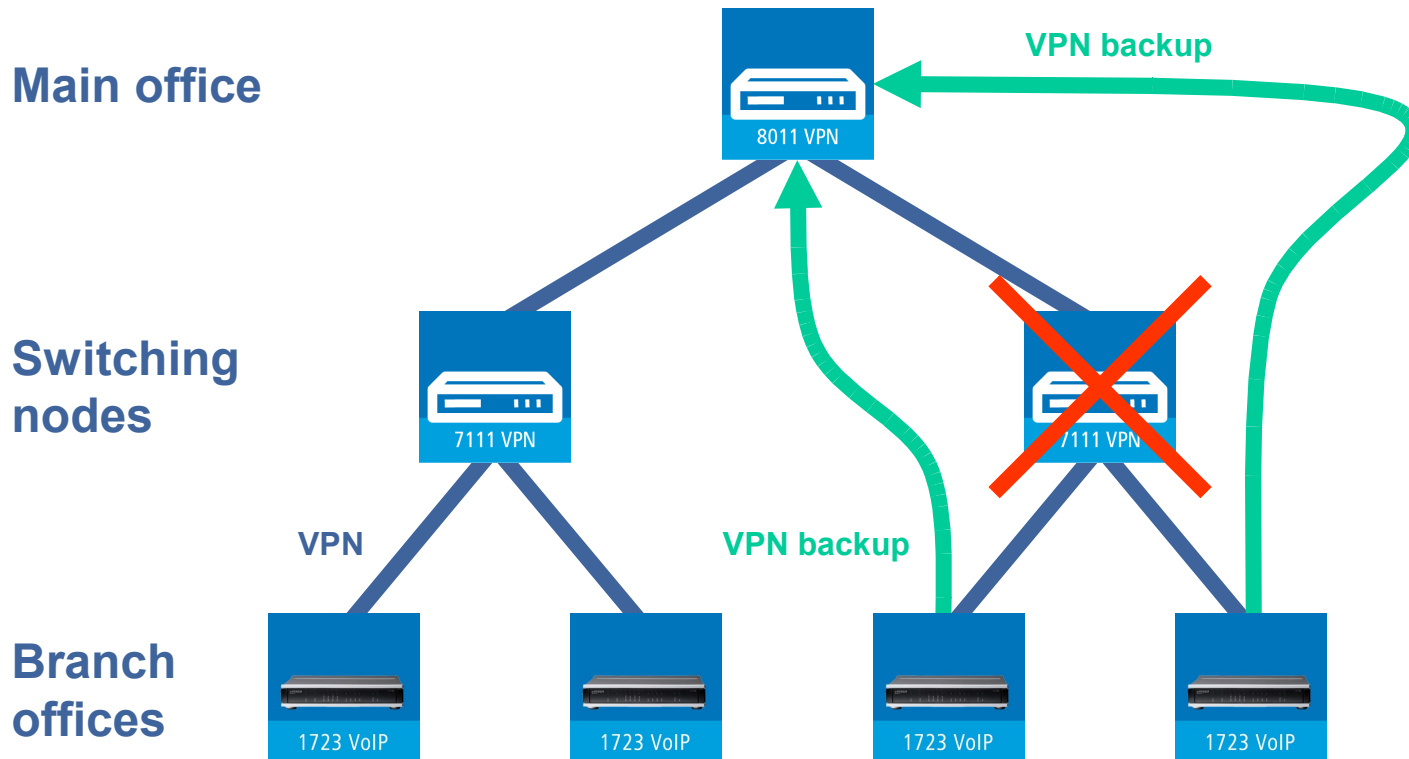
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VPN backup across multiple hierarchy levels

- In **backup** events, the connection is to be established directly between the branch office and main office, and not via the switching node
- **The SAs** are **updated** for the new connection accordingly
- **Return** to the standard connection **when available**

Main office

8011 VPN

VPN backup

Switching nodes

7111 VPN

7111 VPN

VPN

VPN backup

Branch offices

1723 VoIP

1723 VoIP

1723 VoIP

1723 VoIP

WLAN Controller – Cluster monitoring

- **Controller cluster status** is displayed in LANmonitor
- **Status information for the cluster is summarized** in a single WLANmonitor window.
- The **data from all devices** belonging to the cluster are automatically collected in LANmonitor and shown **consolidated**

SIP proxy – "CLIR" in SIP

- SIP privacy/screening for **call number suppression/display** ("CLIR")
- **Filtering** at the border to untrusted networks
- Support for different methods (**RFC3325, IETF draft SIP privacy 04**)
- **CLIR** for analog, ISDN or SIP subscribers

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"trusted"   "untrusted"

VPN

SIP client   1823 VoIP   1724 VoIP   provider

SIP INVITE	SIP INVITE	SIP INVITE
FROM anonymous	FROM anonymous	FROM anonymous
Privacy: id	P-Asserted-Identity: „Max Muster" mmuster@lancom.de Privacy: id	Privacy: id
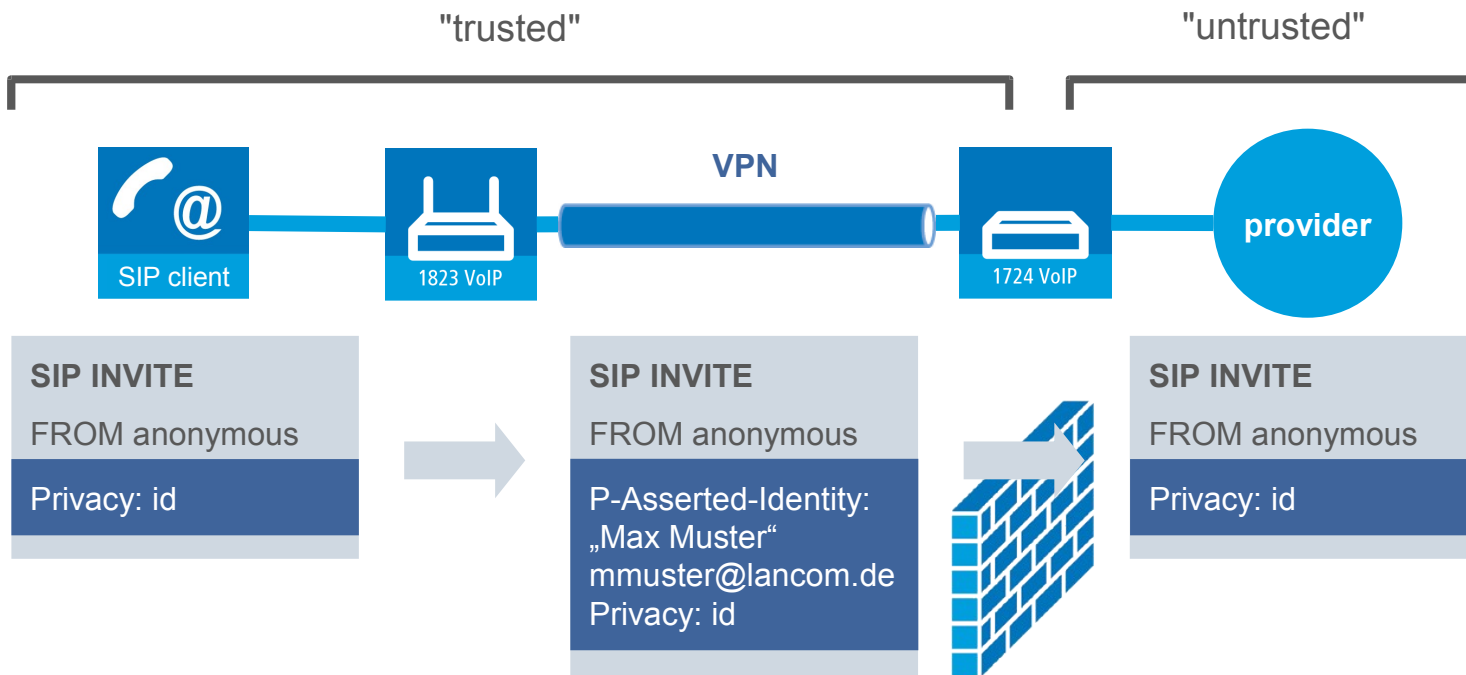
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LANconfig – Automatic backup
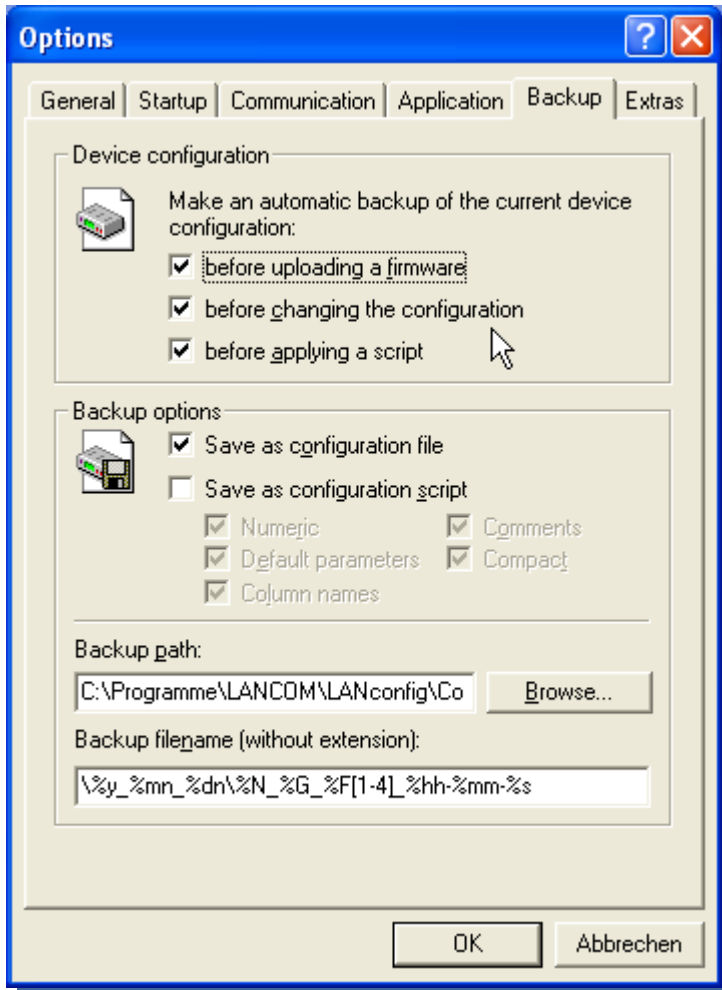
- **Automatic backup** of device configurations when uploading firmware, changing the configuration or when executing a script (all active by default)

- Backup as **configuration file or script**

- **Generic file names** (configurable) with wildcards (e.g. for date, time, device name, type and firmware) and a standard backup path

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LANconfig – Multiple backups

- **Backup multiple configuration files** for various devices **in one step**
- Ideal for **backups for project installations** with different devices
- **Generic file names** (configurable) and standardized backup path
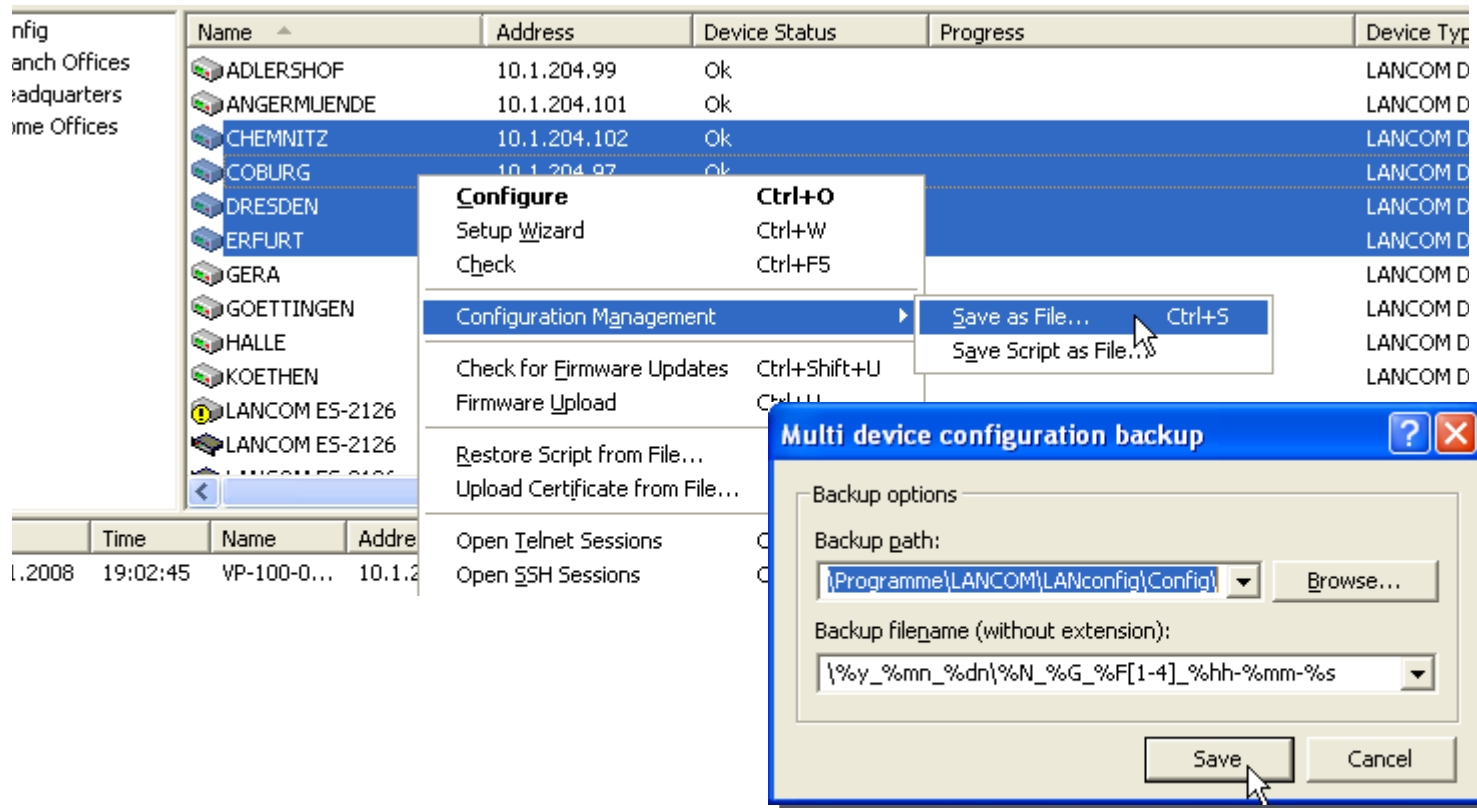
LANmonitor – New to traces/support file

- **SSL-encrypted access** for executing traces on devices
- **Continual backup** with settings for maximum file sizes
- **Time set** for devices without a valid system time

- **Export a support file** containing sysinfo, bootlog and configuration
- ➔ This greatly improves response times and quality of support

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1722VoIP-PM - Traces - temporary (

File Edit Extras

Load trace config
Save trace config

Load trace data
Save trace data

Save supportfile

Close

Callmanager

Miscellaneous settings

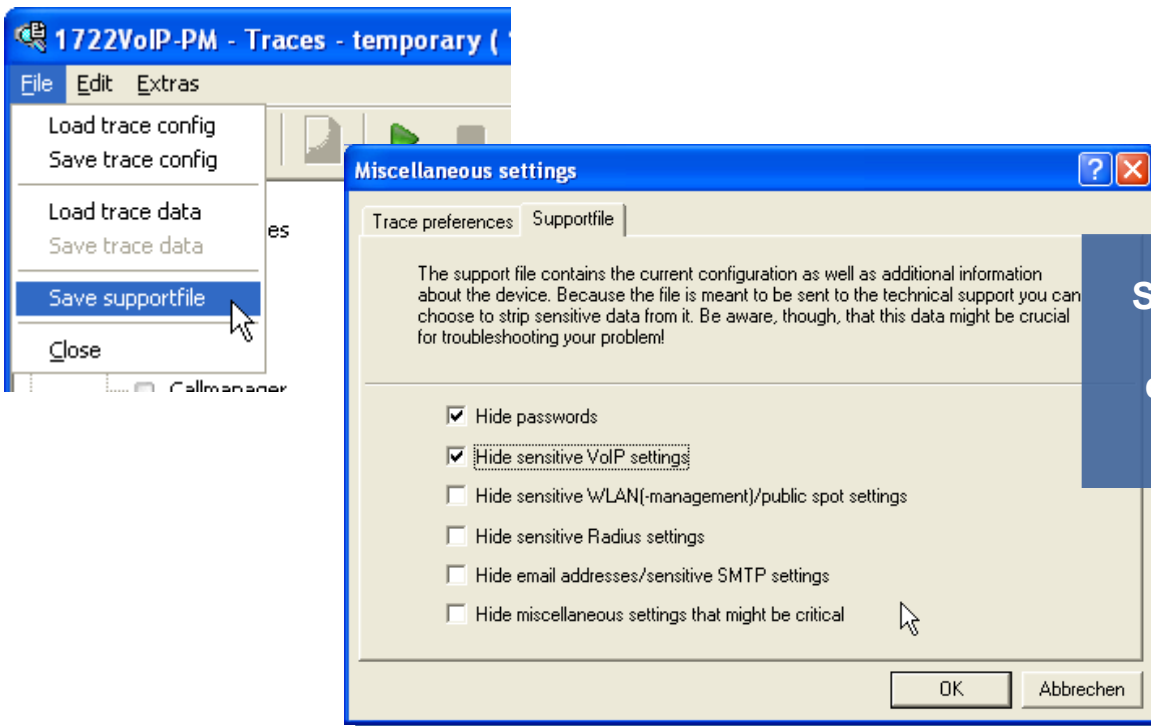Trace preferences | Supportfile

The support file contains the current configuration as well as additional information about the device. Because the file is meant to be sent to the technical support you can choose to strip sensitive data from it. Be aware, though, that this data might be crucial for troubleshooting your problem!

☑ Hide passwords
☑ Hide sensitive VoIP settings
☐ Hide sensitive WLAN(-management)/public spot settings
☐ Hide sensitive Radius settings
☐ Hide email addresses/sensitive SMTP settings
☐ Hide miscellaneous settings that might be critical

OK   Abbrechen

Security-related information is excluded from support files

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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

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