LANCOM Systems

Overview of LANCOM software version 7.8
November 2009

www.lancom.de

LANCOM
Systems

LANCOM Software 7.8
General

LCOS 7.8
[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 7.8 comes with numerous improvements to the internal structures and algorithms for massively accelerated performance with large numbers of connections.

The combination of enhanced certificate management with optimized monitoring prepare LANCOM central-site VPN gateways with LCOS 7.8 for state-of-the art multi-CA environments.

The optimized internal structures provide better stability and a number of improved functions to our compact devices.

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

LANCOM Software 7.8
Highlights

LCOS 7.8
[LANCOM OPERATING SYSTEM]

- **RADIUS connection for XAUTH** – Connecting XAUTH to RADIUS servers allows VPN-client access to be controlled on a per-user basis with central user management, and it also enables the use of OTP tokens.
- **Enhanced certificate support** – Now supported are multiple CAs with CRLs, indices for simplified addressing, and wildcards for certificate checks: These improvements facilitate the operation of LANCOM VPN in multi-CA environments.
- **Better scalability** – Revised algorithms multiply the performance of central-site VPN gateways which work with multiple remote peers. SNMP communications and the display of large tables in LANmonitor have been optimized.
- **Switch support in LANconfig** – Firmware updates and the saving/uploading of configurations for LANCOM managed switches can be directly initiated by LANconfig.

LANCOM Software 7.8
Further improvements (1)

- **DHCP cluster** – DNS requests can be answered by a DHCP cluster, independent of the requested router
- **DHCP options in LANconfig** – DHCP options for assigning parameters to clients can now be set in LANconfig
- **Improved COM-port forwarding** – Additional settings for COM-port forwarding, including binary-mode transmission
- **Multiple WLAN profiles in client mode** – APs and WLAN routers in client mode can automatically select a WLAN profile for an SSID
- **Alternative ARP handling** – LANCOM devices responding to service requests can send the response packets either directly to the requester, or over a route determined by ARP lookup
- **32 backup gateways for PPTP and VPN** – Up to 32 alternative remote stations can be defined for PPTP and VPN connections
- **16 ARF networks** – The 1700 and 1800-series can now manage up to 16 ARF contexts (network definitions)
- **ARF** – Routing tags now also set for packets from local routers
- **ARF/WLAN** – A context can be set up to exchange roaming information (IAPP)

LANCOM Systems

LANCOM Software 7.8

Further improvements (2)

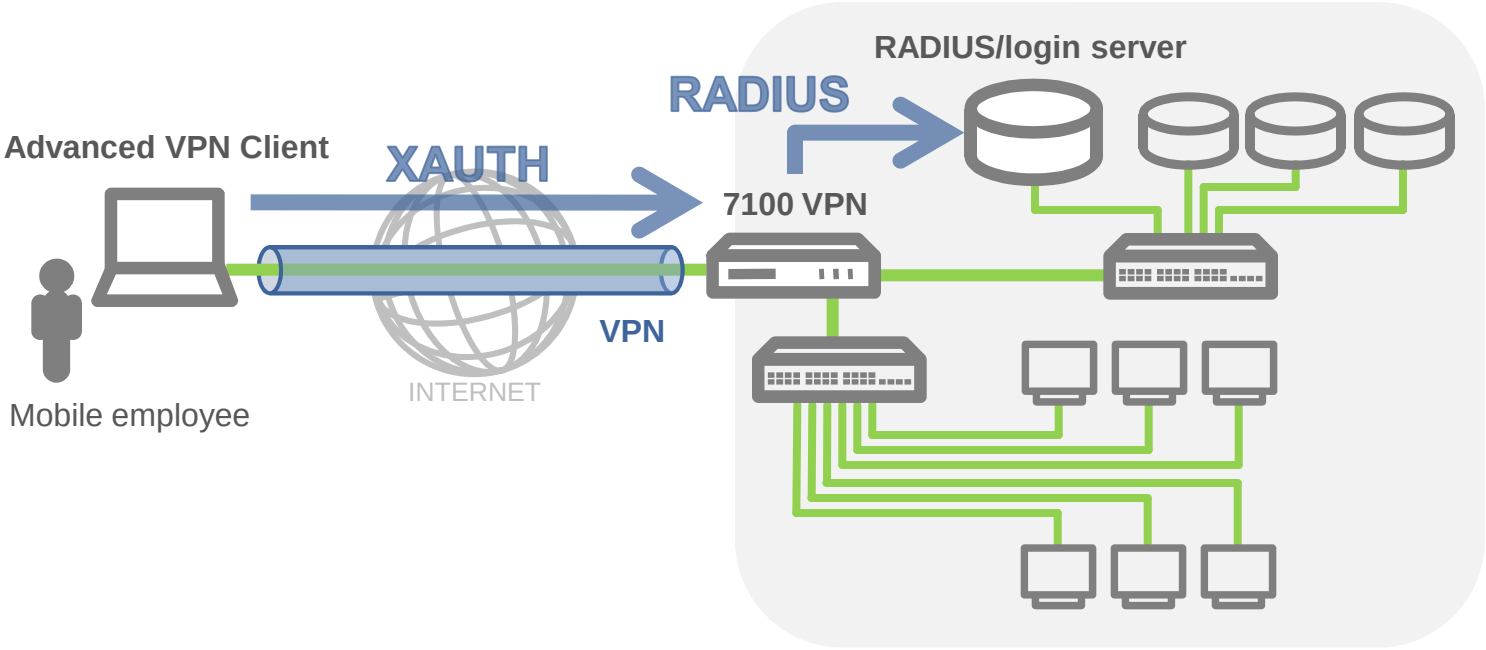
- **Ethernet interfaces** – In addition to "idle", it is now possible to electrically deactivate the interfaces
- **TACACS+ bypassing** – To reduce the load on TACACS+ servers, CRON, action-table and script processing can be excluded from authorization
- **Additional commentary fields** – Detailed project data can be written to eight commentary fields for storage in the device configuration
- **Adjustable averaging for CPU-load display** - The time interval for averaging the CPU load can be set to 1, 5, 60 or 300s
- **LANmonitor/WLANmonitor** – Large tables now supported; SNMP communication improved

LANCOM Systems

RADIUS connection for XAUTH (1)

VPN login with user name and password

- **VPN clients** can use **XAUTH** to login to LANCOM routers with VPN
- **Authentication** can be delegated to the **centralized user management** by RADIUS
- **Due to** the connection to the **central user management, there is no need to** manage access passwords **on the VPN gateway**

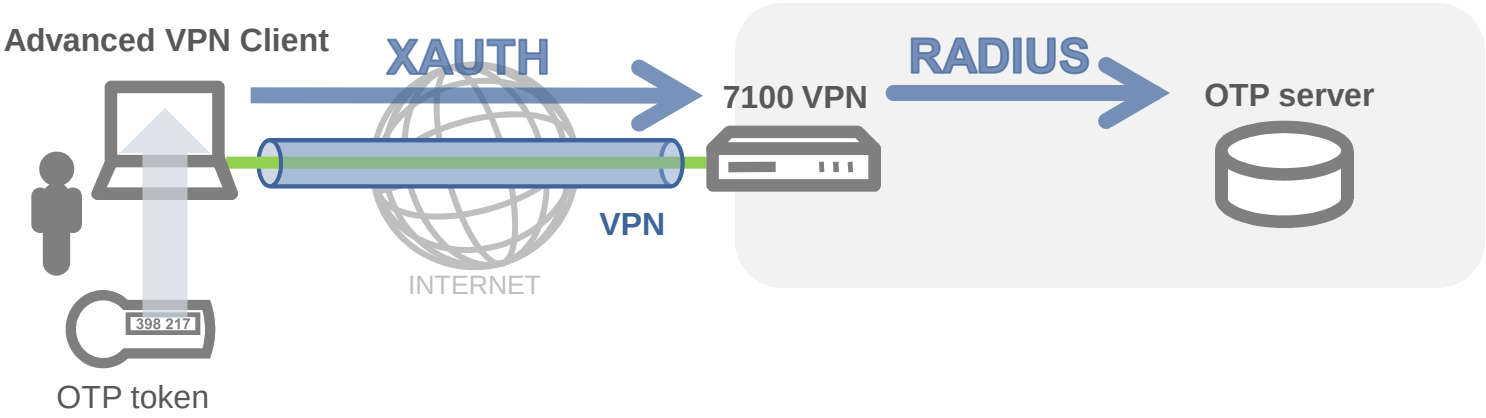


LANCOM Systems

RADIUS connection for XAUTH (2)

Maximum security with OTP tokens

- Meeting the highest demands for security, **OTP tokens** can now also be used for VPN-client login.
- Every 60 seconds the **one-time password (OTP)** displayed for the token **is changed**
- When the Advanced **VPN Client** requests the **password**, the user enters the **ID of the token** which is visible during the login
- If an attacker discovers the **current ID**, it **will soon** become **useless**

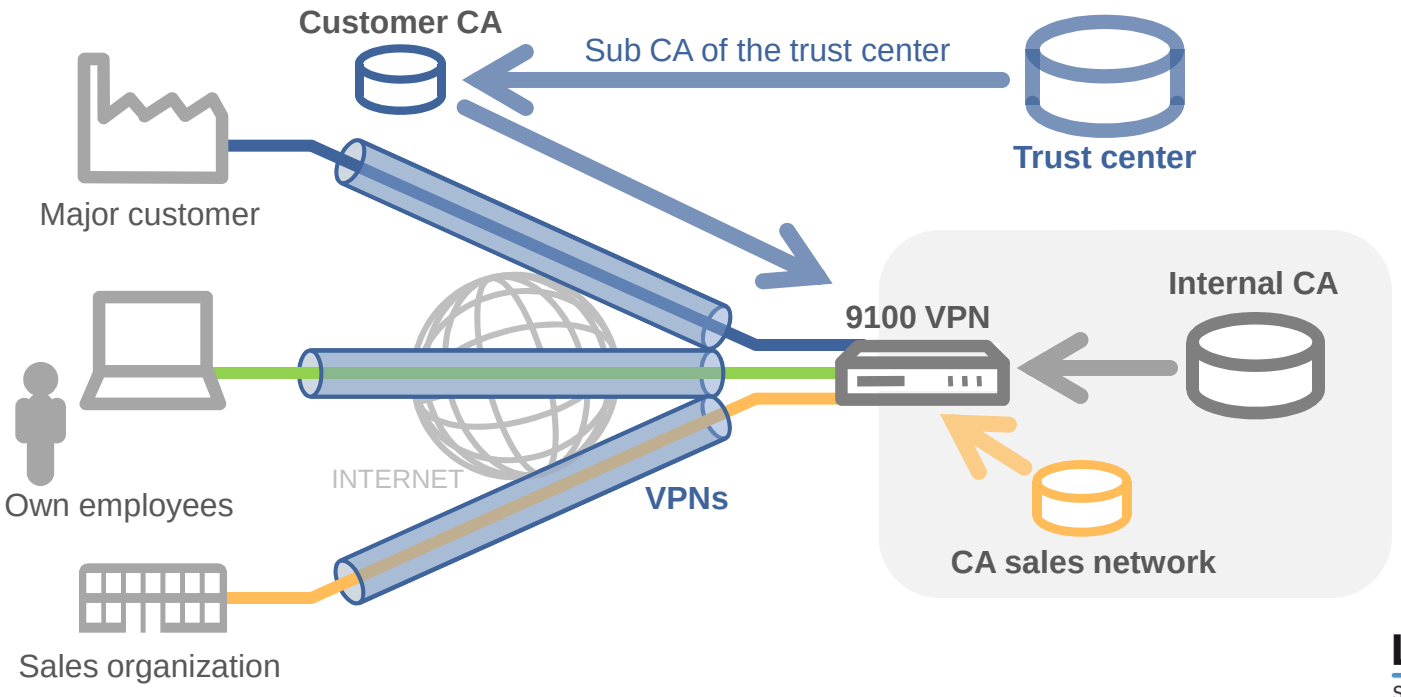


LANCOM Systems

Enhanced certificate support

Up to nine parallel CA hierarchies

- Up to **nine separate CA hierarchies:** These can also be addressed with an index ("VPN-1" to "VPN-9") for easier input at the command-line interface
- **For each** of the nine hierarchies, **SCEP** can be used to roll-out device certificates, and **CRLs** can be used to check for revoked certificates
- For simplification with parallel CAs, **wildcards** allow **portions** of the certificate subject to be used for **identity checks**, e.g. the unique name

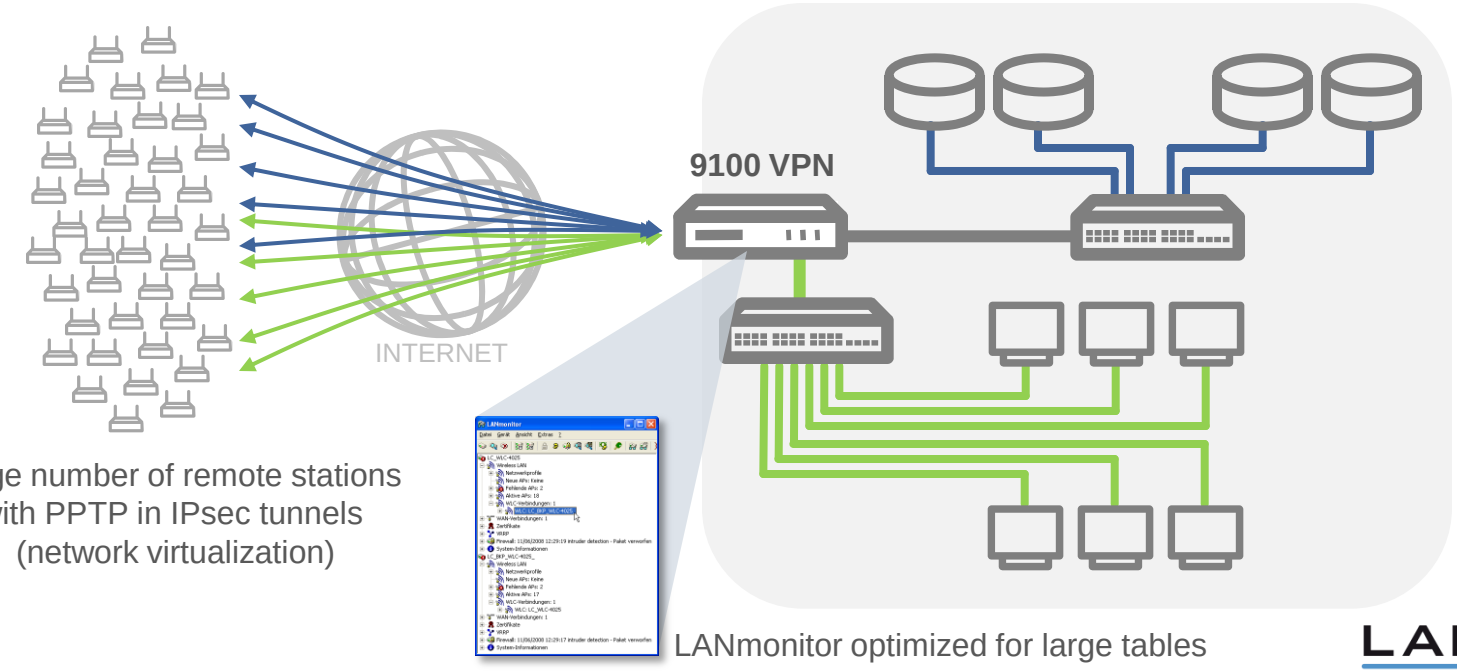


LANCOM Systems

Better scalability

VPN and PPTP optimized for large-scale networks

- **Improved algorithms** for VPN and PPTP multiply the performance available with large numbers of connections
- **Better balance** of low-priority jobs, avoiding the collapse of services during spikes
- **Optimized SNMP communication** with LAN/WLANmonitor (deltas only) and improved **display of large tables** in the tree view



Large number of remote stations with PPTP in IPsec tunnels (network virtualization)

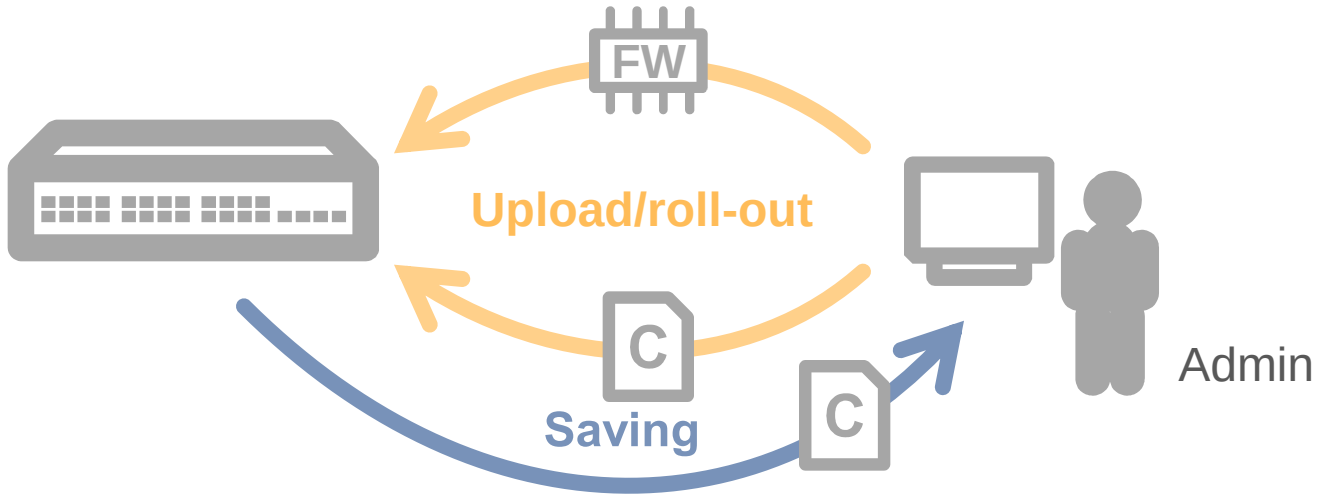
LANmonitor optimized for large tables

LANCOM Systems

Switches supported by LANconfig*

Upload for LANCOM fully-managed switches

- **Upload firmware** to managed switches directly from LANconfig – even to several devices simultaneously
- **Backup switch configurations** via the context menu in the device view, e.g. before changing the configuration
- **Upload switch configurations** directly from LANconfig, e.g. to restore an earlier backup



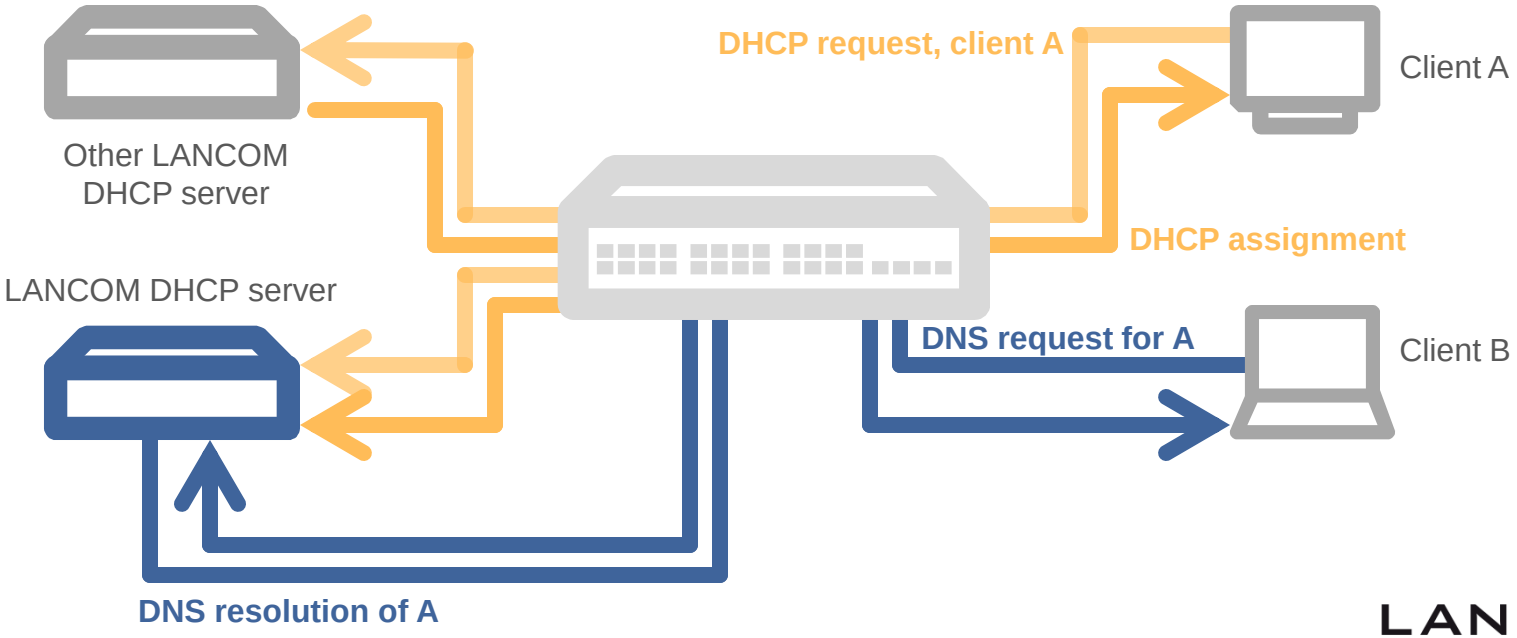
* Requires at least switch firmware: Available for ES-2126, ES-2126P; firmware for GS-2124 and ES-2126+ pending.

LANCOM Systems

DHCP cluster

Caching of all DHCP allocations in the LAN

- The **DHCP server** in LCOS can be switched into **cluster mode** for **each individual ARF context**
- Requests and **DHCP allocations by other LANCOM DHCP servers** are monitored and the allocations are **cached**
- **DNS requests** sent to clients that received addresses from other DHCP servers **can always be resolved with this technique**

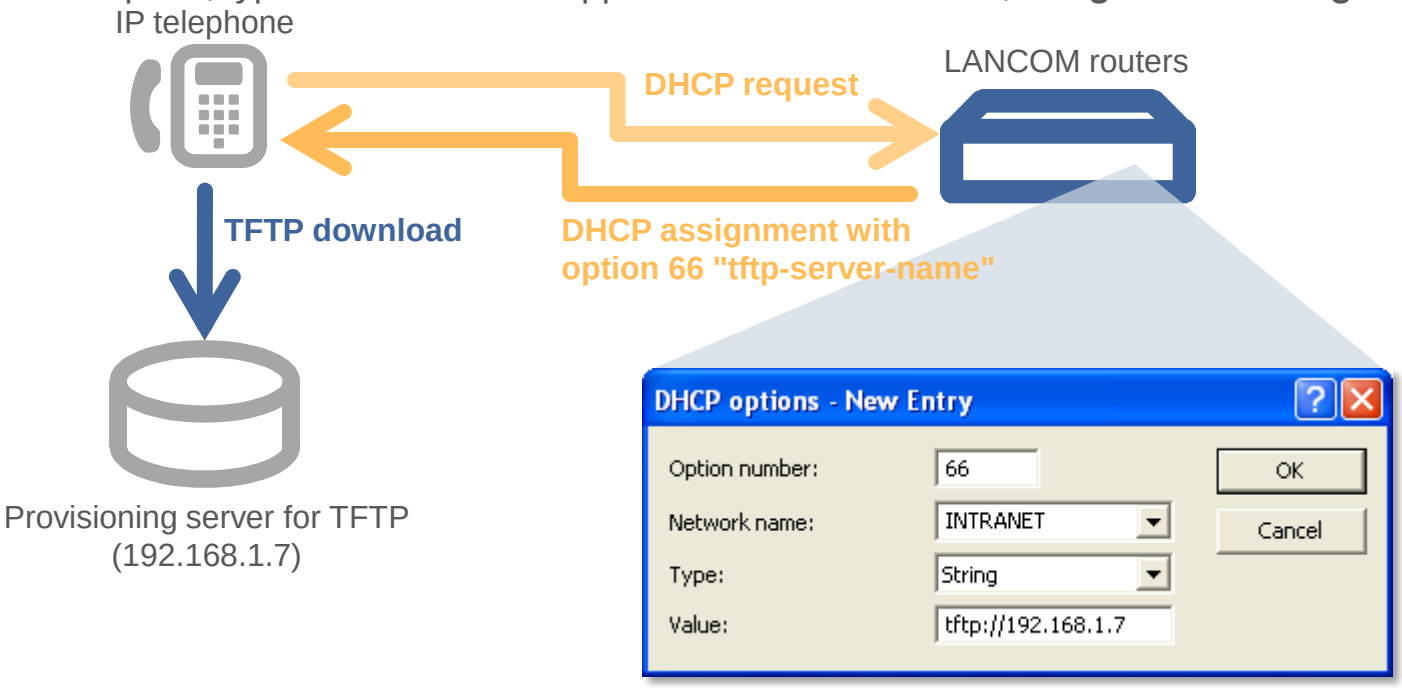


LANCOM Systems

DHCP options in LANconfig

Setting DHCP options for each context

- Due to the **increase in the variety of IP-capable devices** in networks (telephones, cameras, etc.), the **distribution of firmware files, configuration parameters and boot images** directly when addresses are allocated **by DHCP** is increasingly important
- **For each ARF context,** LANconfig can now set **DHCP options** according to RFC 2132
- Option, type and value are supported for **IP addresses**, **integers** and **strings**

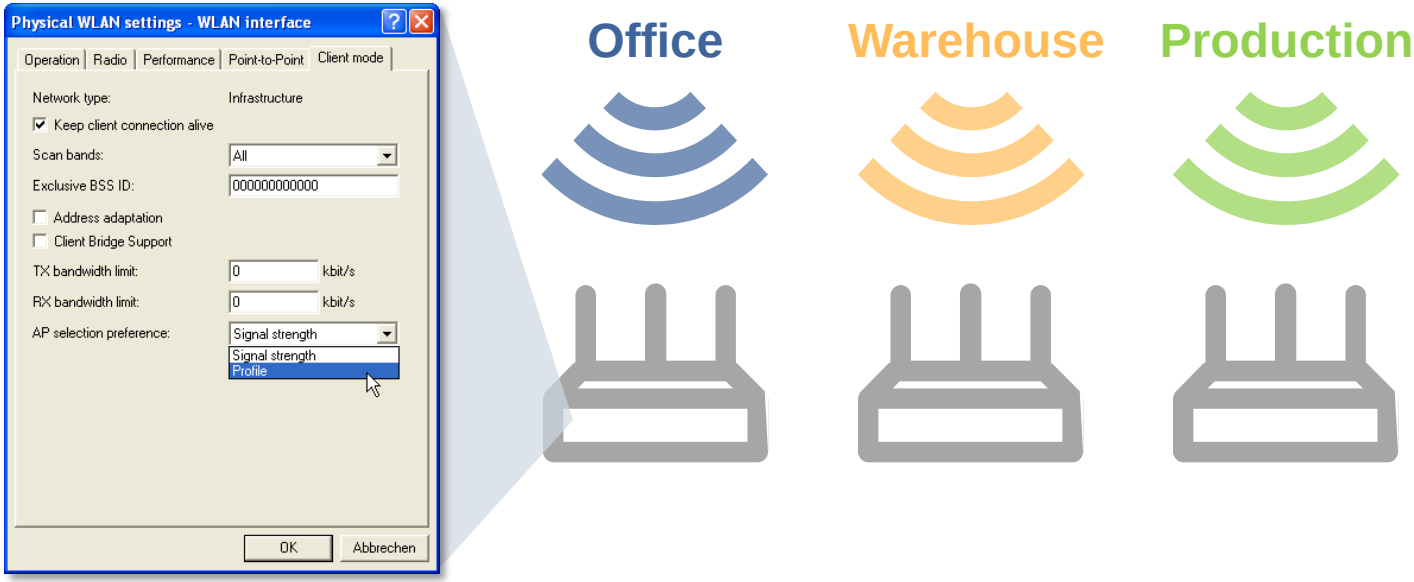


LANCOM Systems

Multiple WLAN profiles in client mode

Up to eight profiles for WLAN clients to select from

- For access points and WLAN **routers in client mode,** up to **eight WLAN profiles with separate access parameters and security settings** can be defined, e.g. for mobile devices at different locations (office/warehouse/productive network, etc.)
- **One profile is selected** automatically depending on the available SSIDs
- The preferred profile can be selected automatically according to **priority** or the **strongest available signal**

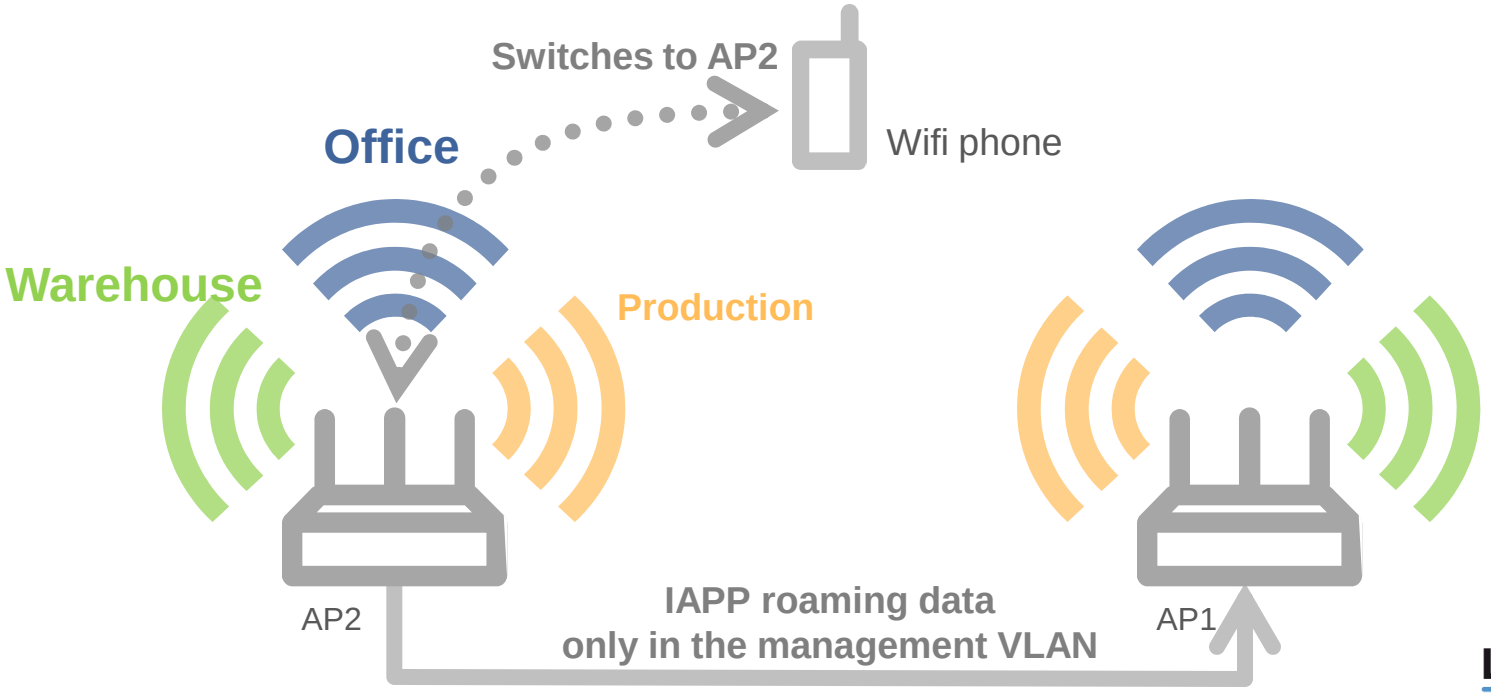


LANCOM Systems

ARF context for IAPP

Context for the exchange of roaming information

- **With the use of IAPP, access points** can **detect one another** and **exchange roaming information**, e.g. the access point used until now is informed that a client is about to switch to a new access point
- IAPP messages are sent **by multicast to all connected networks**
- If a dedicated **management network** is defined, **IAPP can** be exclusively **restricted to this**



LANCOM Systems

Service and Support

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

LANCOM Systems