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# LANCOM Large Scale Monitor (LSM)

Powerful monitoring- and surveillance system for LANCOM devices

The LANCOM Large Scale Monitor monitors the operation of LANCOM products. Designed especially for the WLAN access points, WLAN controllers, routers, and switches from LANCOM Systems, it is ideal for monitoring mid-sized to large-scale installations.

- Scalable monitoring of 25 to 1000 devices
- Browser-based solution also supports smartphones
- Adjustable triggers for alerts and notification, including parent/child relationships
- Graphic display of floorplans with active status information
- Users, roles, and rights management; change logs
- Grouping of devices with configurable folder structures or topologies
- Monitoring and display of VPN connections
- Seamless roaming history of WLAN clients at LANCOM access points, even for complex client movements

### **Efficient operation of large-scale installations**

The LANCOM Large Scale Monitor (LSM) is a professional tool for monitoring medium-sized to large-scale networks with 25 to 1,000 network components. The system is especially designed for LANCOM components including WLAN access points, controllers, switches, and routers. The LANCOM LSM is based on open-source components additionally allows for the monitoring of third-party products such as servers and printers. Problems in the network are clearly displayed in tables or graphical floor plans, and they trigger alert messages via e-mail if certain threshold values are not maintained.

### **Versatile options for installation**

Commissioning the LANCOM LSM is very convenient thanks to the variety of the packages available. LSM is installed from a bootable CD, which also features a customized Linux distribution (CentOS) to get you started quickly. In addition a fully installed and preconfigured virtual machine (VM) is available. On top of that, our on-site installation services offers you support with your project installations.

### **Up to speed – always**

The different user interfaces cater for a variety of different requirements for information. For instance, alerts and dashboards have been designed especially with smartphones in mind, so that system administrators and managers are constantly informed of the availability status.

Operators and support teams benefit from the clearly structured folder views and floor plans with optional real-time status information display for a fast and intuitive access for fault analysis.

### **More than just a monitoring system**

Another special feature is the seamless roaming history for WLAN stations. This facilitates the fast identification of errors from a central location, which is useful for example when troubleshooting signal-coverage problems experienced by moving WLAN clients. These types of problems are otherwise difficult to locate as data acquisition intervals are typically just 1 to 10 minutes. This greatly simplifies troubleshooting as the complete and exact to the second network history from a WLAN client's perspective helps to provide a complete and seamless understanding.

The monitoring of VPN connections is advanced by the specialized and clearly structured display of all configured VPN connections.

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Operating systems	
Linux	CentOS V6.2 (included as an ISO image / installation package)
VMware	VMware Player 4
Languages	German and English user interface
Browser	Supports browsers Internet Explorer (as of version 9), Firefox (as of version 11) and Chrome (as of version 18)
Package	
Distribution DVD	The DVD is bootable and contains the LSM and a customized Linux distribution to get you started quickly. Furthermore a fully installed and preconfigured VM is included on the DVD.
User manual	Printed user manual in English and German
Support and service contract	Contract for full LSM support and software upgrades for one year
Protocols	
ICMP	Device checking via ping
IPv4	Internet Protocol version 4
SNMPv2	Simple Network Management Protocol version 2 Queries the parameters for individual devices
HTTP / HTTPS	Browser access to the LSM and also to individual devices via the integrated web server via HTTP and HTTPS
Functions	
Smartphone support	The graphical user interface automatically switches to a mode that is optimized for smartphone screen resolutions
Integration of the LANCOM management tools	The browser can be used to invoke the web-based configuration of individual LANCOM devices
Discovery	Network SNMP scan for definable IP networks
Import	Import of devices via .CSV file
Maps / floor plans	Graphical presentation of maps and customizable floor plans; devices can be positioned on the maps for a clear visualization of the spatial interrelationships of the devices. Active status display with "mouse-over" function for all devices
Views	Numerous pre-configured views and tables, plus user-configurable views for displaying devices and parameters in tables: adjustable display of columns, sorting by columns, search within tables
Organizational structure	Configuration and display of devices in a folder structure for the visualization of topological or organizational structures with appropriate access rights. At the IP level, parent/child relationships are automatically detected and accounted for
Administration	Management of users, groups, roles, and rights
Alarms	Flexible configuration of trigger and threshold values as well as notification of alarms by e-mail, i.e. when threshold values are exceeded
Change logs	Configuration changes are transparent and are logged on a user basis
Monitoring of third-party devices and server PC	The generic monitoring is available for network devices from other manufacturers and server PCs (external NAGIOS plug-in may be required)
Monitoring parameters	
Generic display of all LANCOM equipment	Display of the following parameters: <ul style="list-style-type: none"> <li>■ IP address</li> <li>■ MAC address</li> <li>■ Device type</li> <li>■ Device name</li> <li>■ Firmware version</li> <li>■ Firmware date</li> <li>■ Serial number</li> <li>■ Location</li> <li>■ Contact</li> <li>■ Uptime</li> <li>■ CPU load</li> <li>■ Ping times / reachability</li> </ul>

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Additionally displayed for LANCOM WLAN access points	<p>Display of the following AP parameters:</p> <ul style="list-style-type: none"> <li>■ Radio status</li> <li>■ Used radio channel</li> <li>■ BSSID (WLAN MAC address)</li> <li>■ Number of currently logged-in stations</li> <li>■ Transmission power</li> <li>■ Bandwidths</li> <li>■ Graphical display of bandwidths and errors</li> <li>■ Graphical display of logged-in stations</li> </ul>
Additionally displayed for LANCOM WLAN controllers	<p>Display of the following controller parameters:</p> <ul style="list-style-type: none"> <li>■ Connected new AP</li> <li>■ Expected AP</li> <li>■ Connected expected AP</li> <li>■ Connected managed AP</li> <li>■ NextDoor AP</li> <li>■ Number of currently logged-in users</li> </ul>
Parameters displayed for each logged-in WLAN station	<p>Display of the following parameters (LANCOM WLAN access points only):</p> <ul style="list-style-type: none"> <li>■ MAC address and vendor</li> <li>■ SSID name</li> <li>■ Client identification</li> <li>■ Signal strength</li> <li>■ Interface name</li> <li>■ Key type</li> <li>■ WPA version</li> <li>■ TX rate</li> <li>■ RX rate</li> <li>■ IP4 address</li> </ul>
Tracking of logged-in WLAN stations	<p>Records are kept of which WLAN clients have logged-in to a LANCOM access point over a certain time period. These records are also available from the perspective of the user, i.e. which access points a particular user has associated and disassociated with in the past. Thus a complete WLAN history can be constructed for any client. The position of the access point with which a client is associated can be displayed on a map</p>
Display of LANCOM switch parameters	<p>Display of the following parameters:</p> <ul style="list-style-type: none"> <li>■ MAC address per port</li> <li>■ Graphical display of bandwidth and errors</li> </ul>
Display of LANCOM router parameters	<p>Display of the following parameters:</p> <ul style="list-style-type: none"> <li>■ Number of VPN tunnels</li> <li>■ Graphical display of bandwidth and errors for LAN and WAN ports</li> </ul>
<b>System requirements</b>	
Hardware	<p>Minimum requirements for 1,000 monitored devices: Server hardware with 2.8-GHz quad-core CPU, 8 GB RAM, 200 GB HDD</p>
<b>Item numbers</b>	
62910	LANCOM LSM basic version for up to 25 monitored devices, including 1 year maintenance and software updates
62911	LANCOM LSM Option +25
62912	LANCOM LSM Option +50
62913	LANCOM LSM Option +100
62914	LANCOM LSM Option +250
62915	LANCOM LSM Option +500
62916	LANCOM LSM Option +1.000
62917	LANCOM LSM installation (1-day on-site workshop – training and installation)
62918	LSM Maintenance & Software Updates (includes all software updates for one year - starting with the second year)

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