



## LANCOM Management Cloud

Automated. Software-defined. Hyper-integrated.

The LANCOM Management Cloud is the world's first hyper-integrated management system that intelligently organizes, optimizes, and controls your entire WAN, LAN, and WLAN network architecture. State-of-the-art software-defined technology (SD-WAN, SD-LAN, SD-WLAN) drastically simplifies the provision of integrated networks and makes the manual configuration of individual devices a thing of the past. The system adapts dynamically to your requirements, it is future-proof and offers maximum security.



Maximale agility  
and versatility



State-of-the-art  
Security



Radical time and  
cost savings



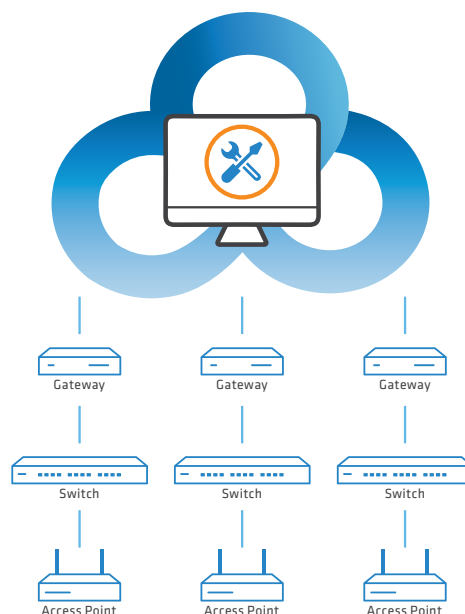
Highly automated  
multi-service networks  
in top quality

# LANCOM Management Cloud

## Hyper Integration means:

### Fully automated configuration

LANCOM has made the manual configuration of individual devices a thing of the past – software-defined technology (SD-WAN, SD-LAN, SD-WLAN) now delivers fully automated network orchestration. All the administrator has to do is to specify the framework conditions for the design of the network. Auto-configuration and zero-touch deployment implement an automated rollout with maximum security. Complex network configurations, previously the cause of intense manual effort by certified IT professionals, is now reduced to just a few minutes and a few clicks!



## Hyper Integration means:

### Routing, switching, WLAN

The LANCOM Management Cloud is a holistic system that controls the entire network infrastructure. This is only possible through a perfectly compatible product portfolio: All gateways, all routers, all switches, and all access points are quickly and easily transferred to the cloud-based network orchestration for a holistic SD-WAN, SD-LAN, and SD-WLAN.

### The easiest way into the cloud

It takes just a few clicks to integrate your devices into the LANCOM Management Cloud – be they new devices or existing infrastructures. You decide whether to switch your entire network over to innovative SD-WAN, SD-LAN, and SD-WLAN, or whether to take it step by step: A gradual transition of your different locations is easy to implement – so take a closer look at the full power of hyper integration.



# LANCOM Management Cloud



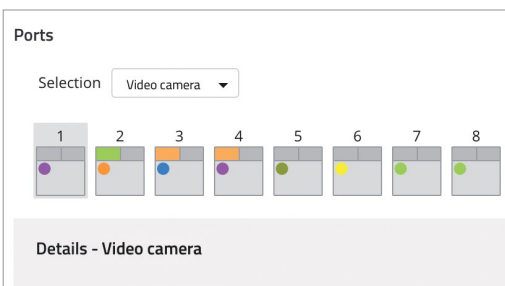
A software-defined wide-area network (SD-WAN) automatically and dynamically uses any type of wide-area network (WAN) for your site connectivity. New locations are installed automatically, securely networked with one another, and new applications are created and rolled out with just a few clicks.



Maximum agility for your site connectivity



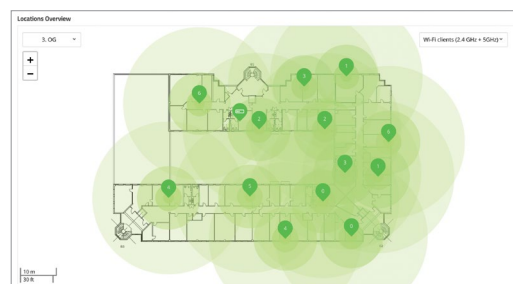
An SD-LAN supports the automated, dynamic, and secure provisioning of any type of multi-service network on switch ports. What used to be the extremely time-consuming and error-prone configuration of individual switches is now fully automated.



Dynamic, automatic switch configuration



A software-defined wireless local-area network (SD-WLAN) combines the features of conventional WLAN controllers and cloud-managed Wi-Fis and supplements these with maximized automation and agility. Further access points or new applications such as hotspots are easily integrated into the network, taking full account of all network policies relating to VLANs, security, bandwidth management or client management.



Location-independent, automated Wi-Fi

# LANCOM Management Cloud

dated July 2018

Product variants	
Public Cloud	A variant of the LANCOM Management Cloud hosted at a data center in Germany
Private Cloud	A variant of the LANCOM Management Cloud operated by LANCOM customers on their own premises
Scope of services – network management	
SD-WAN	Automatic networking of sites via VPN, including network virtualization across the wide area network (WAN)
SD-LAN	Convenient configuration and graphical assignment of networks to switch ports with automatic, continuous VLAN switching
SD-WLAN	Automatic configuration of all access points and Wi-Fi routers including multi-SSID, Active Radio Control (Band Steering, Adaptive RF Optimization), Fast Roaming, VLAN, and authentication
Firmware management	Central distribution of firmware versions to single, multiple, or all devices
Wi-Fi hotspot	Convenient setup of a simple hotspot
Scope of services – monitoring	
Wi-Fi / LAN project dashboard	Aggregate monitoring information about sites, floor plans, devices, error states, clients, and applications (layer 7) for a project. A complete list of LANCOM devices supporting Layer-7 application detection is available on the <a href="#">LANCOM Systems website</a> .
WAN / VPN project dashboard	Overview of all VPN connections including status (active/inactive)
Organization dashboard	Convenient overview of all projects, location-aware placement of projects on a map, traffic-light indicators of device status
Device lists	Filtering or sorting of the devices according to criteria such as device type, serial number, firmware version, and configuration status, etc.
Single device monitoring	Detailed display of device-specific information such as: <ul style="list-style-type: none"> <li>&gt; Wi-Fi channel</li> <li>&gt; Wi-Fi quality</li> <li>&gt; Total throughput</li> <li>&gt; Cloud latency</li> <li>&gt; CPU load</li> <li>&gt; Switch usage</li> </ul>
Scope of services – logging	
Logging system	Detailed logging of configuration changes and error states at project and device levels
Scope of services – device management	
Zero-touch deployment	When being integrated into a network, access points and switches are automatically detected by the LANCOM Management Cloud and included into the administration. Routers and gateways generally need to be set up with Internet access in advance, e.g. with the LANCOM setup wizards or have to be connected per Ethernet WAN- or LAN port to a DHCP network with Internet access (operation behind a network termination router or with already existing Internet access)
Easy port config	The LANCOM Management Cloud allows simple configuration rollout for all switches of a location. Since network configurations are usually not created from identical trunk and port configurations, it is now possible to set the desired networks and properties for each port individually via single device monitoring of the switch. A graphical interface offers the highest level of transparency and ease of use!
Scripting	Self-expandability of the system by freely definable LCOS scripts, which can be activated on device-, location-, and network level and thus provide automated full access to all device parameters. These scripts themselves can access self-defined and system variables and can contain input screens for user-defined values.  Scripting is available on request for system administrators; the resulting GUI elements are available on user level.
Auto configuration	Automatic assignment of configurations to new devices that are added at a site
Individual device configuration	Full, detailed configuration of all parameters for individual devices
LMC Config Sync	Local configuration adjustments on individual devices are automatically adopted, detected and logged, or immediately reset by the LMC.
Password management	Central management of all device passwords
Flexible device handling	Devices are easily moved between organizations and projects
Device integration	Available for all current LANCOM products from LCOS version 10 and LANCOM Switch OS version 3.30 (both available as a free S/W update)
Scope of services – project management	
Projects	Area for creating and managing multiple, independent projects
Roles and rights	Support of different roles for users in organizations and projects: <ul style="list-style-type: none"> <li>&gt; Organization Administrator (all rights across projects)</li> <li>&gt; Project administrator (all rights within a project)</li> <li>&gt; Project member (rights to conduct network, site and device management and monitoring within a project)</li> <li>&gt; Project observer (read-only rights within a project)</li> </ul> <p>Administrators can temporarily enable or disable users. Any number of users can be added to each project. Users can be active in multiple projects.</p>

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Scope of services – project management (continued)	
Organization	<p>Project administration area for specialist resellers, system vendors, and system integrators; any number of projects per organization</p> <p>Key features:</p> <ul style="list-style-type: none"> <li>&gt; Live project status as a map view</li> <li>&gt; Device pool, from which you can move devices into projects</li> <li>&gt; Freely definable organisation and project properties, i.e. customer number, contact person, etc.</li> </ul>
Scope of services – help systems	
Live chat	Live chat functionality for administrators of registered LANCOM partners with direct access to LANCOM Cloud experts for all questions about the LANCOM Management Cloud; accessible on workdays between 09.00 am and 05:00 pm.
Info area	Centralized info area containing all LANCOM Management Cloud resources, e.g. system status, video tutorials, guided tour, FAQs, system requirements and scenarios
System requirements – private cloud	
System characteristics	<p>1 virtualization platform (e.g. OpenStack, Hyper-V, VMware), including:</p> <p>1 master node (min.): 2 vCores, 4 GB RAM, 25 GB storage (ext4, 1 partition)            1 worker node (min.): 4 vCores, 16 GB RAM, 25 GB storage (ext4, 1 partition)            NAS / SAN memory linking as required            Further details on request</p>
System requirements – browser to access the LANCOM Management Cloud	
Supported browsers	<p>Supported Internet browsers:</p> <ul style="list-style-type: none"> <li>&gt; Google Chrome</li> <li>&gt; Mozilla Firefox</li> <li>&gt; Apple Safari</li> <li>&gt; Microsoft Edge</li> </ul> <p>All browser specifications are platform independent (PC, laptop, Mac, tablet). We recommended you use the latest browser version. Recommended screen resolution of 1400 pixels wide</p>
System requirements – supported LANCOM devices	
Devices & software versions	The LANCOM Management Cloud is supported by all LANCOM routers, access points and fully managed switches as from software version LCOM 10, resp. LANCOM Switch OS 3.30. Complete overview of the supported devices and software versions: <a href="#">Devices supporting the LMC</a>
Cloud starter license	Automatic start-up license (valid for 30 days) for all devices that are newly integrated into the LANCOM Management Cloud by LANCOM resellers and system house partners. After the 30 days have expired, devices without valid license will no longer be able to be configured, but remain autonomous, fully operational and will be monitored concerning their operational status by the LMC via a simple status monitoring (online / offline) in the map view. For the full scope of functionalities you are invited to choose one of our license models.
Access Points	<p>License category A</p> <ul style="list-style-type: none"> <li>&gt; LANCOM L-151gn, L-151E</li> <li>&gt; LANCOM L-320agn (R2), L-321agn (R2), L-322agn (R2), L-322E, L-330agn</li> <li>&gt; LANCOM L-451agn, L-452agn, L-460agn</li> <li>&gt; LANCOM LN-630acn</li> <li>&gt; LANCOM L-822acn, LN-830acn, LN-830E</li> <li>&gt; LANCOM L-1302acn, L-1310acn</li> <li>&gt; LANCOM LN-860, LN-862</li> <li>&gt; LANCOM LN-1700, LN-1702</li> <li>&gt; LANCOM IAP-321, IAP-322</li> <li>&gt; LANCOM IAP-821, IAP-822</li> <li>&gt; LANCOM OAP-321, OAP-322</li> <li>&gt; LANCOM OAP-821, OAP-822, OAP-830</li> </ul>
Gateways / Routers	<p>License category A</p> <ul style="list-style-type: none"> <li>&gt; LANCOM 730-4G</li> <li>&gt; LANCOM 730VA, 831A</li> <li>&gt; LANCOM 1631E</li> <li>&gt; LANCOM 1640E</li> <li>&gt; LANCOM 883 VoIP, 884 VoIP</li> <li>&gt; LANCOM vRouter 10</li> </ul>

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## System requirements – supported LANCOM devices (continued)

Gateways / routers	<p>License category B</p> <ul style="list-style-type: none"> <li>&gt; LANCOM 1780EW-4G</li> <li>&gt; LANCOM 1780EW-4G+</li> <li>&gt; LANCOM 1781-4G</li> <li>&gt; LANCOM 1781EW+</li> <li>&gt; LANCOM 1781A, 1781AW</li> <li>&gt; LANCOM 1781A-4G</li> <li>&gt; LANCOM 1781EF+</li> <li>&gt; LANCOM 1781VA, 1781VAW, 1781VA-4G</li> <li>&gt; LANCOM 1783VA, 1783VAW, 1783VA-4G</li> <li>&gt; LANCOM 1784VA</li> <li>&gt; LANCOM 1790-4G</li> <li>&gt; LANCOM IAP-321-3G, IAP-3G, IAP-4G</li> <li>&gt; LANCOM OAP-3G, OAP-321-3G</li> <li>&gt; LANCOM vRouter 50</li> </ul> <p>License category C</p> <ul style="list-style-type: none"> <li>&gt; LANCOM vRouter 250</li> <li>&gt; LANCOM 1900EF</li> <li>&gt; LANCOM 1906VA</li> <li>&gt; LANCOM 1906VA-4G</li> </ul> <p>License category D</p> <ul style="list-style-type: none"> <li>&gt; LANCOM ISG-1000</li> <li>&gt; LANCOM 7100+ VPN, 9100+ VPN</li> <li>&gt; LANCOM vRouter 500, 1000 and unlimited</li> </ul>
WLAN Controllers	<p>Device category B</p> <ul style="list-style-type: none"> <li>&gt; LANCOM WLC-4006+</li> </ul> <p>License category D</p> <ul style="list-style-type: none"> <li>&gt; LANCOM WLC-1000</li> <li>&gt; LANCOM WLC-4025+, WLC-4100</li> </ul>
Switches	<p>License category A</p> <ul style="list-style-type: none"> <li>&gt; LANCOM GS-2310, GS-2310P(+)</li> </ul> <p>License category B</p> <ul style="list-style-type: none"> <li>&gt; LANCOM GS-2326, GS-2326+, GS-2326P, GS-2326P+</li> <li>&gt; LANCOM GS-2328, GS-2328P, GS-2328F</li> </ul> <p>License category C</p> <ul style="list-style-type: none"> <li>&gt; LANCOM GS-2352, GS-2352P</li> </ul>

## Security

Secure device communication	HTTPS- / TLS-secured communication between all managed devices, certificate-based authentication, secure and unambiguous assignment of equipment and projects (claiming & pairing)
Data hosting service (Public Cloud)	All devices and personal data are hosted at a datacenter in Germany and are subject to German and European data protection regulations
Security auditing	Security auditing of the LANCOM Management Cloud by a BSI-accredited test laboratory
IT security "Made in Germany"	<p>LANCOM Systems bears the quality seal "IT security made in Germany" from TeleTrusT for compliance with the following requirements:</p> <ul style="list-style-type: none"> <li>&gt; The company is headquartered in Germany.</li> <li>&gt; The company offers trusted security solutions.</li> <li>&gt; The products contain no hidden access paths.</li> <li>&gt; Research and development in IT security takes place in Germany.</li> <li>&gt; The company is committed to satisfying the requirements of German data protection regulations.</li> </ul>

## Item

License category A	<p>LANCOM Management Cloud license for the management &amp; monitoring of a category A device. Specification of the LMC project ID and project information needed, incl. support &amp; updates</p> <p>Available with validity periods as follows:</p> <ul style="list-style-type: none"> <li>&gt; 1 year, item no. 50100 - LANCOM LMC-A-1Y</li> <li>&gt; 3 years, item no. 50101 - LANCOM LMC-A-3Y</li> <li>&gt; 5 years, item no. 50102 - LANCOM LMC-A-5Y</li> </ul>
License category B	<p>LANCOM Management Cloud license for the management &amp; monitoring of a category B device. Specification of the LMC project ID and project information needed, incl. support &amp; updates</p> <p>Available with validity periods as follows:</p> <ul style="list-style-type: none"> <li>&gt; 1 year, item no. 50103 - LANCOM LMC-B-1Y</li> <li>&gt; 3 years, item no. 50104 - LANCOM LMC-B-3Y</li> <li>&gt; 5 years, item no. 50105 - LANCOM LMC-B-5Y</li> </ul>

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Item (continued)	
License category C	LANCOM Management Cloud license for the management & monitoring of a category C device. Specification of the LMC project ID and project information needed, incl. support & updates Available with validity periods as follows: > 1 year, item no. 50106 - LANCOM LMC-C-1Y > 3 years, item no. 50107 - LANCOM LMC-C-3Y > 5 years, item no. 50108 - LANCOM LMC-C-5Y
License category D	LANCOM Management Cloud license for the management & monitoring of a category D device. Specification of the LMC project ID and project information needed, incl. support & updates Available with validity periods as follows: > 1 year, item no. 50109 - LANCOM LMC-D-1Y > 3 years, item no. 50110 - LANCOM LMC-D-3Y > 5 years, item no. 50111 - LANCOM LMC-D-5Y
LANCOM LMC Private Cloud License	License to operate an LMC Private Cloud installation, one-time charge (per server). LANCOM Management Cloud Installation Service required Only available on request directly via LANCOM Item no. 50201
LANCOM LMC Private On-Site Installation Service	On-site installation and setup for one LMC Private Cloud by LANCOM employees (per server) Only available on request directly via LANCOM Item no. 50202
LANCOM LMC Private On-Site Installation Service - Travel EU / CH / UK	Travel expenses for LMC on-site installation within EU / CH / UK Only available on request directly via LANCOM Item no. 50203
LANCOM LMC Private On-Site Installation Service - Travel ROW	Travel expenses for LMC on-site installation outside EU / CH / UK Only available on request directly via LANCOM Item no. 50204
LANCOM LMC Private Remote Installation Service	Remote installation and setup for one LMC Private Cloud by LANCOM employees (per server) Only available on request directly via LANCOM Item no. 50205
LANCOM LMC Private Maintenance Package (1 year)	Proactive maintenance of the LMC Private Cloud infrastructure components, implementation of software updates, 2 trainings per year (LMC operation and features) at LANCOM headquarters (Wuersele) (Wuersele) Only available on request directly via LANCOM Item no. 50206
LANCOM LMC Private Appliance - M	Hardware appliance for the operation of a Private LMC, supporting up to 1,000 LANCOM devices, Private Cloud License included, device licenses and installation fee in addition Only available on request directly via LANCOM Art.-Nr. 50210
LANCOM LMC Private Appliance - L	Hardware appliance for the operation of a Private LMC, supporting up to 5,000 LANCOM devices, Private Cloud License included, device licenses and installation fee in addition Only available on request directly via LANCOM Art.-Nr. 50211
LANCOM LMC Private Appliance Maintenance - M	LANCOM LMC Private Appliance M maintenance fee (yearly) Only available on request directly via LANCOM Art.-Nr. 50212
LANCOM LMC Private Appliance Maintenance - L	LANCOM LMC Private Appliance L maintenance fee (yearly) Only available on request directly via LANCOM Art.-Nr. 50213