



ACKSYS APNUS043 WaveManager Wireless Network Management User Guide

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ACKSYS APNUS043 WaveManager Wireless Network Management User Guide

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Introduction

The Acksys WaveManager On-Premise is a comprehensive wireless network management tool designed specifically for industrial and transportation environments. This software solution enables real-time monitoring, configuration, and optimization of wireless devices, ensuring seamless communication and reliability in mission-critical applications.

The purpose of the On-Premise release is to be used on a local network with WaveOs MQTT devices.

The **On-Premise Release** is designed to operate within a local network, specifically for use with WaveOS MQTT devices.

This version leverages a licensing system, which must be activated to unlock the advanced features of the RMS. This application note serves as a comprehensive guide for installing WaveManager On-Premise on various platforms, including Microsoft Windows and Linux Ubuntu.

Prerequisites

Before starting the installation, ensure the following are in place:

Hardware Requirements:

- **Processor:** Minimum quad-core CPU (e.g., Intel Xeon, AMD Ryzen).
- **Memory:** At least 16 GB RAM (32 GB recommended for large deployments).
- **Storage:** Minimum 100 GB of free disk space.
- **Network:** Static IP address for the WaveManager server.

Software Requirements:

For Server :

- **Operating System:**
 - Ubuntu Server 24.04 or 24.04 LTS (recommended)
 - Windows 10, Windows Server 2019.
- **DataBase:**
 - In case of using an external Database
- PostgreSQL 15+ DataBase (Recommended).
- MSSQL Database

For Product:

- **Operating System:**
 - WaveOs 4.28.1.1 or greater

Download WaveManager Installer

Visit the WaveManager official portal and download the appropriate on-premise installation package:

- **For Linux:** .deb file.
- **For Windows:** .exe file.

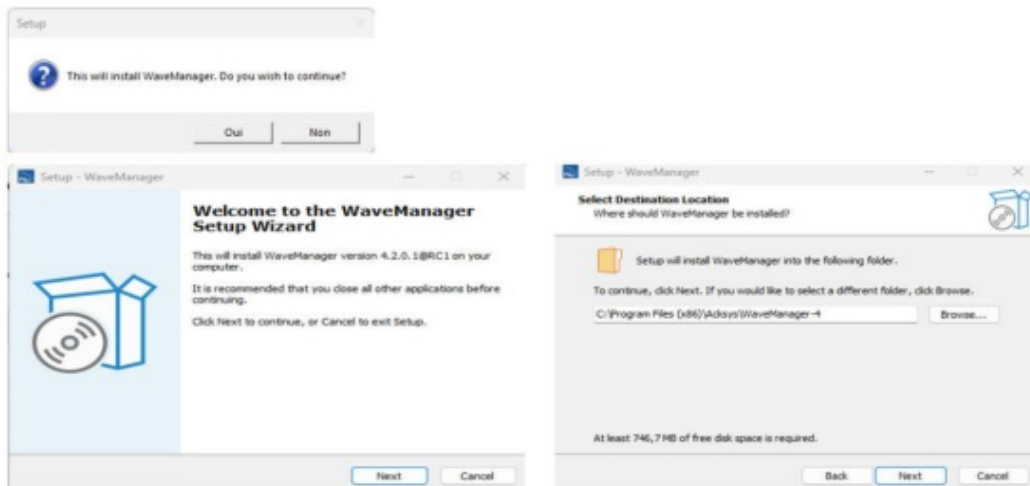
Installation Step

Let saying finally, the downloading part of our WaveManager installation process is done.

For Windows Server

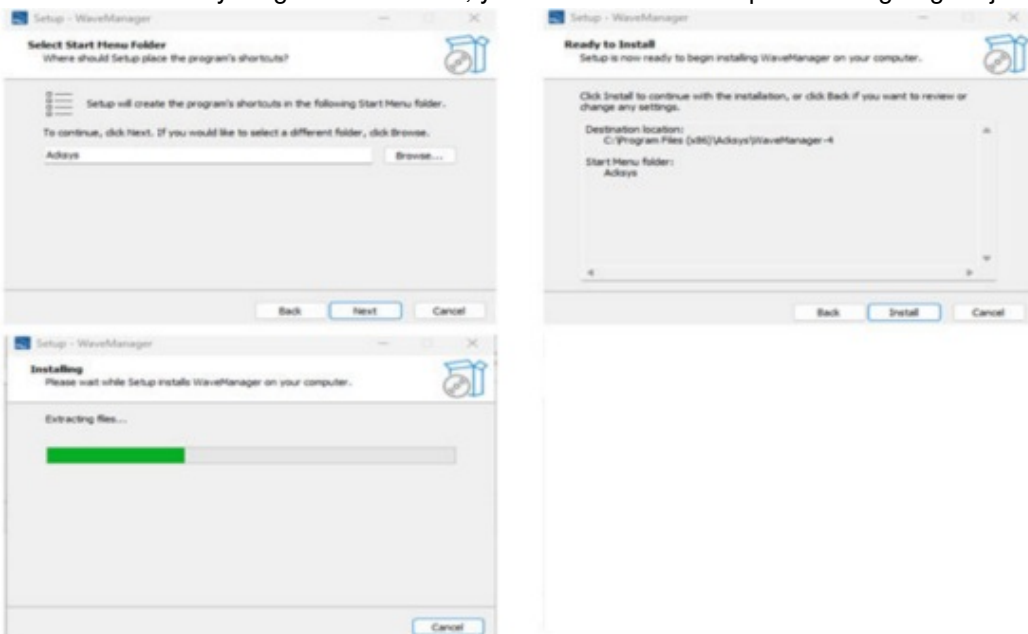
So, we can now begin WaveManager installation from the setup Wizard. Click next to continue.

Installation : WaveManager-Installer-4.2.0.1@RC1.exe 17/09/2024 10:57 Application 542 148 Ko



NOTE: If you have already installed another WaveManager instance, please we recommended you to close all other applications before continuing.

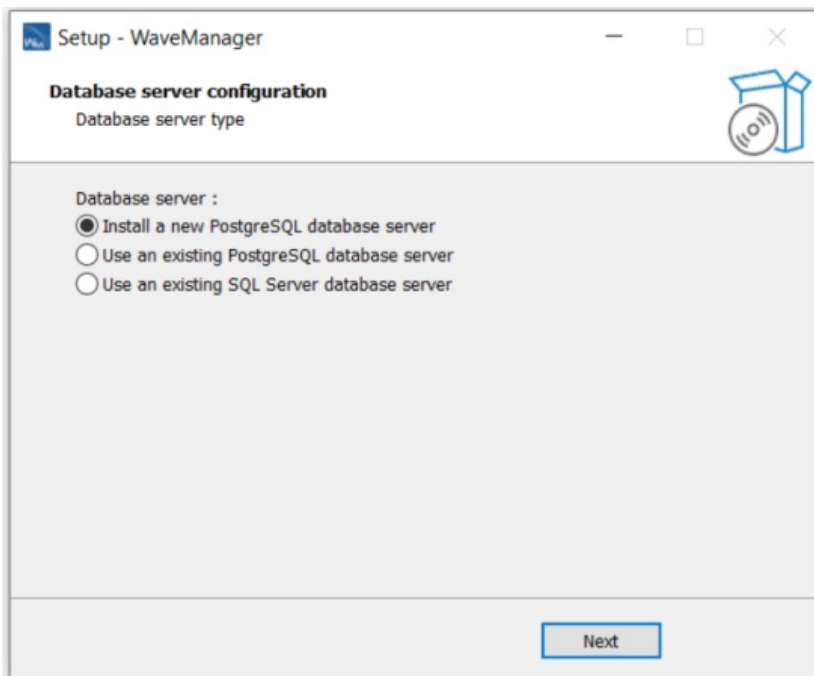
As a result of everything we have done, you will find the install process is going on just like the following image.



On the next step, you will choose the type of database you want to install in the provided option.

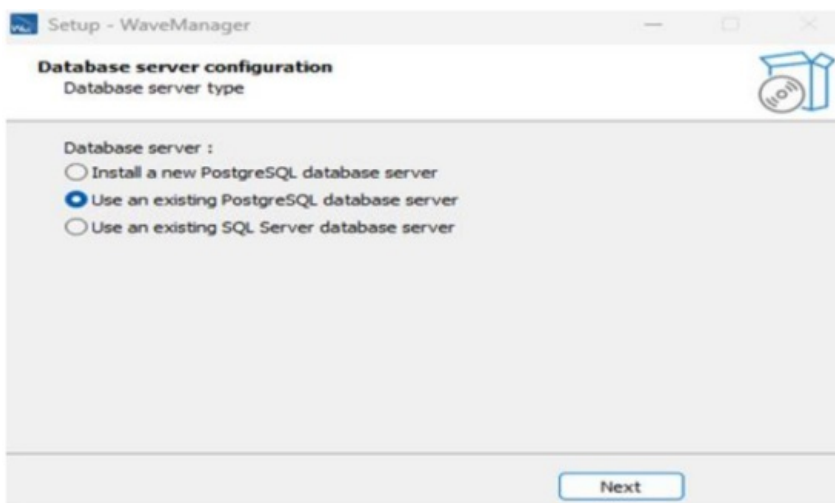
Local DataBase Installation

- **Description:** The database is installed on the same server or within the local network of the partner



External DataBase Installation

- **Description:** The database can be hosted on a remote server or an external database server managed by a third party PostgreSQL or MSsql).



NOTE: Both options are viable, and the choice depends on the partner's specific needs, budget, and IT policies. It is crucial to perform a requirements analysis and collaborate closely with the partner to decide on the best deployment approach.

Click on the type of database install , You will find a form to fill up the database information. Enter the Database name, username, password and the IP address of your database server in the form. For this example, the correct database configuration should look like the following image.

The first two screenshots show the 'Setup - WaveManager' window. The first is 'Database server configuration' with fields for Host (localhost), Port (5432), Username (acksys), Password (*****), and Database name (WaveManagerDB). The second is 'WaveManager service configuration' showing 'WaveManager service configuration complete'. The next two screenshots show 'Mosquitto Installation'. The third is 'Install Mosquitto broker' with 'Installation de Mosquitto en cours...'. The fourth is 'Install Mosquitto broker' with 'Installation de Mosquitto terminée'.

Do not forget to replace the database name, username, password, and Database host (The IP address of your database server) in the form. Once the information is entered correctly, press the Next button to submit the form.

The first screenshot shows 'Completing the WaveManager Setup Wizard' with a 'Finish' button. The second screenshot shows the 'WaveManager service controller' with 'Start' and 'Stop' buttons, 'Status' as 'Running', and 'Connection settings' for HTTP and HTTPS. The third screenshot shows the 'WaveManager service controller' with 'Database settings' for PostgreSQL, Host (localhost), Port (5432), Username (acksys), and Database name (WaveManagerDB). The status is 'Accessible'.

If the database information is not correct, you can edit the database fields in the following form:



“Please update the WaveManager database with the relevant information after completing the necessary actions. Ensure that all fields are populated accurately and double-check for consistency to avoid discrepancies.”

Finally, After entering all the required information in the form, Click on the Update button to install the WaveManager database.

Congratulations! You have successfully configured WaveManager with the external database.. All the database queries will be executed on our database server.

For Linux Server

Update the System

```
sudo apt update && sudo apt upgrade -y
```

Install WaveManager Packet

After downloading the Linux WaveManager packet acksys-wavemanager_4.2.0.1RC2_amd64.deb, type the following command to install the packet:

```
Sudo apt-get install -f ./acksys-wavemanager_4.2.0.1RC2_amd64.deb
```

Installation OverView

Please note that during the installation process, you are invited to set the Database password.

```

:~/Documents$ sudo apt-get install -f ./acksys-wavenanager_4.2.0.1RC2_and64.deb
Lecture des listes de paquets... Fait
Construction de l'arbre des dépendances... Fait
Lecture des informations d'état... Fait
Note : sélection de « acksys-wavenanager » au lieu de « ./acksys-wavenanager_4.2.0.1RC2_and64.deb »
Les paquets supplémentaires suivants seront installés :
  libbson1 libldt2 libmosquitto1 libwebsockets19t64 mosquitto postgresql
Paquets suggérés :
  postgresql-doc
Les NOUVEAUX paquets suivants seront installés :
  acksys-wavenanager libbson1 libldt2 libmosquitto1 libwebsockets19t64 mosquitto postgresql
0 mis à jour, 7 nouvellement installés, 0 à enlever et 50 non mis à jour.
Il est nécessaire de prendre 627 ko/59,4 Mo dans les archives.
Après cette opération, 201 Mo d'espace disque supplémentaires seront utilisés.
Souhaitez-vous continuer ? [O/n] o
Réception de :1 http://archive.ubuntu.com/ubuntu noble/universe amd64 libbson1 amd64 1.7.17-1 [24,8 kB]
Réception de :2 http://archive.ubuntu.com/ubuntu noble/universe amd64 libmosquitto1 amd64 2.0.18-1build3 [54,1 kB]
Réception de :3 http://archive.ubuntu.com/ubuntu noble/universe amd64 libldt2 amd64 2.18.10-10 [65,4 kB]
Réception de :4 http://archive.ubuntu.com/ubuntu noble/universe amd64 libwebsockets19t64 amd64 4.3.3-1.1build3 [229 kB]
Réception de :5 http://archive.ubuntu.com/ubuntu noble/universe amd64 mosquitto amd64 2.0.18-1build3 [242 kB]
Réception de :6 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 postgresql-all 16+257build1.1 [11,6 kB]
Réception de :7 /home/noe/Documents/acksys-wavenanager_4.2.0.1RC2_and64.deb acksys-wavenanager amd64 4.2.0.1RC2 [58,8 MB]
627 ko réceptionnés en 0s (1 319 ko/s)
Sélection du paquet libbson1:amd64 précédemment désélectionné.
(Lecture de la base de données... 153189 fichiers et répertoires déjà installés.)
Préparation du dépaquetage de .../0-libbson1_1.7.17-1_amd64.deb ...
Dépaquetage de libbson1:amd64 (1.7.17-1) ...
Sélection du paquet libmosquitto1:amd64 précédemment désélectionné.
Préparation du dépaquetage de .../1-libmosquitto1_2.0.18-1build3_amd64.deb ...
Dépaquetage de libmosquitto1:amd64 (2.0.18-1build3) ...
Sélection du paquet libldt2:amd64 précédemment désélectionné.
Préparation du dépaquetage de .../2-libldt2_2.18.10-10_amd64.deb ...
Dépaquetage de libldt2:amd64 (2.18.10-10) ...
Sélection du paquet libwebsockets19t64:amd64 précédemment désélectionné.
Préparation du dépaquetage de .../3-libwebsockets19t64_4.3.3-1.1build3_amd64.deb ...
Dépaquetage de libwebsockets19t64:amd64 (4.3.3-1.1build3) ...
Sélection du paquet mosquitto précédemment désélectionné.
Préparation du dépaquetage de .../4-mosquitto_2.0.18-1build3_amd64.deb ...
Dépaquetage de libbson1:amd64 (1.7.17-1) ...
Sélection du paquet libmosquitto1:amd64 précédemment désélectionné.
Préparation du dépaquetage de .../1-libmosquitto1_2.0.18-1build3_amd64.deb ...
Dépaquetage de libmosquitto1:amd64 (2.0.18-1build3) ...
Sélection du paquet libldt2:amd64 précédemment désélectionné.
Préparation du dépaquetage de .../2-libldt2_2.18.10-10_amd64.deb ...
Dépaquetage de libldt2:amd64 (2.18.10-10) ...
Sélection du paquet libwebsockets19t64:amd64 précédemment désélectionné.
Préparation du dépaquetage de .../3-libwebsockets19t64_4.3.3-1.1build3_amd64.deb ...
Dépaquetage de libwebsockets19t64:amd64 (4.3.3-1.1build3) ...
Sélection du paquet mosquitto précédemment désélectionné.
Préparation du dépaquetage de .../4-mosquitto_2.0.18-1build3_amd64.deb ...
Dépaquetage de mosquitto (2.0.18-1build3) ...
Sélection du paquet postgresql précédemment désélectionné.
Préparation du dépaquetage de .../5-postgresql_16+257build1.1_all.deb ...
Dépaquetage de postgresql (16+257build1.1) ...
Sélection du paquet acksys-wavenanager précédemment désélectionné.
Préparation du dépaquetage de .../6-acksys-wavenanager_4.2.0.1RC2_and64.deb ...
Dépaquetage de acksys-wavenanager (4.2.0.1RC2) ...
Paramétrage de libmosquitto1:amd64 (2.0.18-1build3) ...
Paramétrage de libbson1:amd64 (1.7.17-1) ...
Paramétrage de libwebsockets19t64:amd64 (4.3.3-1.1build3) ...
Paramétrage de libldt2:amd64 (2.18.10-10) ...
Paramétrage de postgresql (16+257build1.1) ...
Paramétrage de mosquitto (2.0.18-1build3) ...
Could not execute systemctl: at /usr/bin/deb-systemd-invoke line 148.
Paramétrage de acksys-wavenanager (4.2.0.1RC2) ...
Changing ownership of directories...
Configuration de la connexion au serveur de base de données...
Enter the postgres administration password : this will be used to connect to the PostgreSQL server
Password:
Configuring PostgreSQL Server...
ALTER ROLE
Configuring UFW to allow traffic on port 5432...
Omission de l'ajout de la règle existante
Omission de l'ajout de la règle existante (v6)
Pare-feu inactif (rechargement ignoré)
Restarting PostgreSQL Server...
Configuration de Mosquitto...
Création des répertoires nécessaires...
Paramétrage de libbson1:amd64 (1.7.17-1) ...
Paramétrage de libwebsockets19t64:amd64 (4.3.3-1.1build3) ...
Paramétrage de libldt2:amd64 (2.18.10-10) ...
Paramétrage de postgresql (16+257build1.1) ...
Paramétrage de mosquitto (2.0.18-1build3) ...
Could not execute systemctl: at /usr/bin/deb-systemd-invoke line 148.
Paramétrage de acksys-wavenanager (4.2.0.1RC2) ...
Changing ownership of directories...
Configuration de la connexion au serveur de base de données...
Enter the postgres administration password : this will be used to connect to the PostgreSQL server
Password:
Configuring PostgreSQL Server...
ALTER ROLE
Configuring UFW to allow traffic on port 5432...
Omission de l'ajout de la règle existante
Omission de l'ajout de la règle existante (v6)
Pare-feu inactif (rechargement ignoré)
Restarting PostgreSQL Server...
Configuration de Mosquitto...
Création des répertoires nécessaires...
Création du fichier de configuration principal de Mosquitto...
Fichier de configuration principal créé et permissions définies sur 644.
Restant du fichier de configuration de Mosquitto...
Fichier de configuration créé et permissions définies sur 755.
Création du fichier de service Mosquitto...
Fichier de service créé et permissions définies sur 644.
Arrêtage du service Mosquitto...

```

PostgreSQL Database service Status (once installed)


```

root@kali:~# systemctl status acksys-wavemanager.service
● acksys-wavemanager.service - Acksys WaveManager server.
   Loaded: loaded (/etc/systemd/system/acksys-wavemanager.service; enabled; preset: enabled)
   Active: active (running) since Wed 2024-11-27 15:30:29 CET; 13s ago
     Main PID: 9823 (Acksys.WaveMnana)
        Tasks: 19 (limit: 7481)
       Memory: 132.3M (peak: 132.8M)
          CPU: 4.451s
      CGroup: /system.slice/acksys-wavemanager.service
              └─9823 /usr/bin/acksys-wavemanager-server

Nov. 27 15:30:30 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveMnana
Nov. 27 15:30:30 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.CommunicationServices.LocalClientServices.LocalMqttClientServ
Nov. 27 15:30:30 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.CommunicationServices.LocalClientServices.LocalMqttClientServ
Nov. 27 15:30:30 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.CommunicationServices.LocalClientServices.LocalMqttClientServ
Nov. 27 15:30:30 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.CommunicationServices.LocalClientServices.LocalMqttClientServ
Nov. 27 15:30:30 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.CommunicationServices.LocalClientServices.LocalMqttClientServ
Nov. 27 15:30:30 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.CommunicationServices.LocalClientServices.LocalMqttClientServ
Nov. 27 15:30:30 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.CommunicationServices.LocalClientServices.LocalMqttClientServ
Nov. 27 15:30:43 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.CallCenterServices.CallCenterService[8] SubProductConfigurationLoadin
Nov. 27 15:30:43 noe-VirtualBox acksys-wavemanager.service[9823]: Acksys.WaveManager.Server.Services.OperationalServices.UpdateServices.UpdateService[8] DisupdateTimeTriggered.
Linux 5.19.20 (END)

```

Mosquitto Service Status (once installed)

```

root@kali:~# systemctl status mosquitto.service
● mosquitto.service - Mosquitto MQTT Broker
   Loaded: loaded (/etc/systemd/system/mosquitto.service; enabled; preset: enabled)
   Active: active (running) since Wed 2024-11-27 15:30:06 CET; 1min 36s ago
     Docs: man:mosquitto.conf(5)
           man:mosquitto(8)
     Main PID: 8300 (mosquitto)
        Tasks: 1 (limit: 7481)
       Memory: 1.0M (peak: 1.5M)
          CPU: 68ms
      CGroup: /system.slice/mosquitto.service
              └─8300 /usr/bin/mosquitto -c /etc/mosquitto/mosquitto.conf

Nov. 27 15:30:06 noe-VirtualBox systemd[1]: Starting mosquitto.service - Mosquitto MQTT Broker...
Nov. 27 15:30:06 noe-VirtualBox mosquitto[8300]: 1732717806: Loading config file /etc/mosquitto/conf.d/acksys-mosquitto.conf
Nov. 27 15:30:06 noe-VirtualBox mosquitto[8300]: 1732717806: mosquitto version 2.0.18 starting
Nov. 27 15:30:06 noe-VirtualBox mosquitto[8300]: 1732717806: Config loaded from /etc/mosquitto/mosquitto.conf.
Nov. 27 15:30:06 noe-VirtualBox mosquitto[8300]: 1732717806: Opening ipv4 listen socket on port 443.
Nov. 27 15:30:06 noe-VirtualBox mosquitto[8300]: 1732717806: mosquitto version 2.0.18 running
Nov. 27 15:30:06 noe-VirtualBox systemd[1]: Started mosquitto.service - Mosquitto MQTT Broker.
Nov. 27 15:30:18 noe-VirtualBox mosquitto[8300]: 1732717838: New connection from 127.0.0.1:57940 on port 443.
Nov. 27 15:30:18 noe-VirtualBox mosquitto[8300]: 1732717838: New client connected from 127.0.0.1:57940 as sino (p2, ci, 400).

```

Configure your Admin account (First Login)

Open a browser and navigate to <http://<server-ip>:5000> or the domain configured and you will be invited to fill the login form and configure your admin account.

ADMINISTRATOR USER

Username

Admin

Firstname (optional)

Firstname

Lastname (optional)

Lastname

Email (optional)

Email

Phone number (optional)

Phone number

Company name (optional)

Company name

Password

Confirm password

Register

WaveManager

LOGIN

Admin

Login

Quick test to check our new install

Please configure an Acksys router to interact with the MQTT broker (WaveManager MQTT broker), you need to set up the router to act as an MQTT client. ACKSYS router support direct MQTT client functionality on the firmware version 4.28.1.1 or higher.

Configure your router to connect to the broker

Access the Web UI:

- Log in to the router's web interface.
- Navigate to Setup > Services > Cloud > and provide necessary information to configure the router .

Set Up MQTT Connection:

- **Enter the Broker's details:**
 - **Enable cloud** : enable MQTT service
 - **Cloud type** : Personal

- **Service identification** : Management purposes, this field is mandatory. Provided by the web interface when cloud is personal.
- **Server**: The broker's IP or hostname (here WaveManager IP Address).
- **Port**: The MQTT port.
- **Encryption TLS** : If required by the broker.
- **Authentication TLS**: If required by the broker.

Apply and Save Configuration:

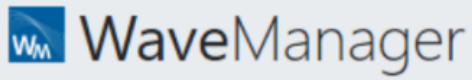
- Ensure the MQTT service is enabled.
- Save and apply the configuration.

Field name	Sample	Description
Enable	Checked	Enable MQTT service
Cloud Type	personal	Personal Cloud
Service identification	On_Premise_WM	This field is mandatory. Provided by the web interface when cloud is personal.
Server	192.168.10.17	Remote Broker's address à Wave Manager On-Premise
Port	By default :1883	Select which port the broker should use to listen for connections
Encryption TLS	Unchecked	Enable TLS/SSL authentication for the broker
Authentication TLS	Unchecked	Enable TLS/SSL authentication for the broker

Connect on the WaveManager On-Premise

Access WaveManager:

Open a browser and navigate to <http://<server-ip>:5000> or the domain configured and you will be invited to fill login/password.



LOGIN

Admin|



.....



Login



Add new products:

AllModel

50 per page0 - 0 / 0

Hostname	Serial Number	Product ID	Firmware	Firmware Version	Default IP Address	Description	Wireless Roles
----------	---------------	------------	----------	------------------	--------------------	-------------	----------------

Update firmware

Update network interface settings

Update wireless element settings

Update wireless interface settings

Update web server access settings

Validate

Charts

LED tracking

Export

Add new products

Add new products

Use discovery service

Discovery modeLocalStarting IPv4Ending IPv4

Serial Number	Code	IPv4 Address	IPv4 Server Address	Server Port	Result
---------------	------	--------------	---------------------	-------------	--------

Add

Add new products

Use discovery service

Discovery modeRemoteStarting IPv4192.168.20.1Ending IPv4192.168.20.129

Serial Number	Code	IPv4 Address	IPv4 Server Address	Server Port	Result
<input checked="" type="checkbox"/>	2010501d	112	192.168.20.117	192.168.10.96	<input checked="" type="checkbox"/> 443
<input checked="" type="checkbox"/>	23028072	142	192.168.20.128	192.168.10.96	<input checked="" type="checkbox"/> 443
<input checked="" type="checkbox"/>	20105048	112	192.168.20.115	192.168.10.96	<input checked="" type="checkbox"/> 443

Add

Products Association:

Add new products

Use discovery service

Discovery modeRemoteStarting IPv4192.168.20.1Ending IPv4192.168.20.129

Serial Number	Code	IPv4 Address	IPv4 Server Address	Server Port	Result
<input checked="" type="checkbox"/>	2010501d	112	192.168.20.117	192.168.10.96	<input checked="" type="checkbox"/> 443
<input checked="" type="checkbox"/>	23028072	142	192.168.20.128	192.168.10.96	<input checked="" type="checkbox"/> 443
<input checked="" type="checkbox"/>	20105048	112	192.168.20.115	192.168.10.96	<input checked="" type="checkbox"/> 443

Add

selected products can be disconnected. do you want to continue?

YesNo

Add new products

Use discovery service

Discovery modeRemoteStarting IPv4192.168.20.1Ending IPv4192.168.20.129

Serial Number	Code	IPv4 Address	IPv4 Server Address	Server Port	Result
2010501d	112	192.168.20.117	192.168.10.96	443	The product is well associated
23028072	142	192.168.20.128	192.168.10.96	443	The product is well associated
20105048	112	192.168.20.115	192.168.10.96	443	The product is well associated

Add

WaveManager / Acksys Network Management System

State - 54 products

Configuration State - 54 products

Firmware Version - 54 products

WiFi Rules - 51 rules

Configuration	Group	Model	Hostname	Serial Number	Product ID	Firmware	Firmware Version	Default IP Address	Description	Wireless Rules
		AKG4K V2		20105001	000011001312					
		RadBox/CDAP	AcksysHagartoAP	16206012	000011000117	E2148AC.1	4.26.0.18	192.168.20.105	User-definable	
		RadBox/CDAP V2	CDAP_AP	23028072	000011000426	E2148AC.2	4.26.0.18PCS	192.168.20.128	User-definable	
		AKG4K V2	Acksys	2010500a	000011000408	E2148AC.1	4.26.0.18	192.168.20.79	User-definable	
		AKG4K V2	Acksys	2010502d	000011007549	E2148AC.1	4.26.0.18	192.168.20.38	User-definable	
		AKG4K V2		20105003	000011001004					
		AKG4K V2	Acksys	2010503a	000011007626	E2148AC.1	4.26.0.18	192.168.20.74	User-definable	

For further assistance, consult the official WaveManager documentation or contact support.
Support : <https://support.acksys.fr>.



Documents / Resources

ACKSYS

APPLICATION NOTE

APNUS043 How To Install WaveManager On Premier

December 2024

[ACKSYS APNUS043 WaveManager Wireless Network Management](#) [pdf] User Guide APNUS043, APNUS043 WaveManager Wireless Network Management, WaveManager Wireless Network Management, Wireless Network Management, Network Management

References

- [A Acksys Communications & Systems](#)
- [A Acksys Communications & Systems](#)
- [User Manual](#)

[Manuals](#), [Privacy Policy](#)

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