



RAYMANAGESOFT[®] UNIFIED ENDPOINT
MANAGER

Unified Endpoint Management

Installation Guide
RayManageSoft Unified Endpoint Manager 2.3

•rayNET

**Copyright © Raynet GmbH (Germany, Paderborn HRB 3524). All rights reserved.
Complete or partial reproduction, adaptation, or translation without prior written permission
is prohibited.**

Installation Guide for release 2.3

Raynet and RayFlow are trademarks or registered trademarks of Raynet GmbH protected by patents in European Union, USA and Australia, other patents pending. Other company names and product names are trademarks of their respective owners and are used to their credit.

The content of this document is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Raynet GmbH. Raynet GmbH assumes no responsibility or liability for any errors or inaccuracies that may appear in this document. All names and data used in examples are fictitious unless otherwise noted.

Any type of software or data file can be packaged for software management using packaging tools from Raynet or those publicly purchasable in the market. The resulting package is referred to as a Raynet package. Copyright for any third party software and/or data described in a Raynet package remains the property of the relevant software vendor and/or developer. Raynet GmbH does not accept any liability arising from the distribution and/or use of third party software and/or data described in Raynet packages. Please refer to your Raynet license agreement for complete warranty and liability information.

Raynet GmbH Germany
See our website for locations.

www.raynet.de

Contents

Introduction	4
Prerequisites	7
Network Storage	8
Azure	8
AWS	9
MinIO	9
Installation	10
Installing on a Network Storage	10
Installing On-premise	13
First Login	16
License Activation	17
Troubleshooting	21
Appendix A: Environment Variables	22

Introduction

This guide is designed to assist IT staff to plan and complete the installation of RayManageSoft Unified Endpoint Manager 2.3 in their enterprise.

The document will guide through the creation of a cloud storage, a cloud- or on-premises installation, as well as the initial usage of the application.

Manual Conventions

The following typesetting conventions are used in this manual:

- Cross references to headings or chapters in this manual, or to other manuals, are shown in italics:
"See *RayManageSoft Unified Endpoint Manager*for..."
- Quotations from your computer screen (titles, prompts, and so on) are shown in bold:
"Go to **Devices** screen."
- Code syntax, file samples, directory paths, entries that you may type on screen, and the like are shown in a monospaced font:
"Use `docker compose -up` to set your instance up"
- Italics may also be used for emphasis: "This manual is *not*intended..."
- Bold may also be used for inline headings: "**Target**: Indicates a target frame..."

Two note formats are used in RayManageSoft Unified Endpoint Manager documentation

This is the basic format for giving additional information to the current topic.
It can come with four different headings:



Be aware:

This note format contains important information related to your current activity. You should not skip over this text.



Note:

This format is used for items of interest that relate to the current discussion.



Best practice:

If there is a best practice approach to the current topic you can decide if you want to follow it, or stick to your own plan.



Tip:

Tips are designed to help you find the easiest and quickest way to work with RayManageSoft Unified Endpoint Manager.

The second format is for very serious alerts.

**WARNING**

The information here may save you from data loss. Pay particular attention.

Documentation Requests

We welcome suggestions and input on the various documentation resources available with RayManageSoft Unified Endpoint Manager and its components. Comments and requests can be forwarded through the Raynet GmbH support representative.

Prerequisites

RayManageSoft Unified Endpoint Manager requires a cloud storage to store all uploaded package files and to make them available to all devices. In this version cloud storage backed by Azure infrastructure, Amazon Web Services, and MinIO is supported.

**Be aware:**

While it is possible to install the product in both cloud- and on-premises environments, both approaches still require a valid network storage for the files that get distributed to the managed devices.

Prerequisites

- Docker Images for RayManageSoft Unified Endpoint Manager.
- Docker for Windows (onsite installation)
 - In order to use Docker the Hyper-V and Containers Windows features must be enabled.
- Microsoft SQL Server
 - An instance of MS SQL Server or SQL Server Express must be available and the server must be reachable from the Docker environment.
- A network storage solution (Azure, MinIO, or Amazon Web Services)
- A valid RayManageSoft Unified Endpoint Manager license, either in form of an order number or in form of a license file.

**Note:**

RayManageSoft Unified Endpoint Manager uses Windows docker images, make sure that Docker has been switched to **Windows Containers** mode. It is not possible to pull the images when running **Linux Containers**.

Network Storage

The network storage is used by RayManageSoft Unified Endpoint Manager to store package files and distribute them to the client. Currently the following storage options are supported:

- Azure
- Amazon Web Services (AWS) storage
- MinIO

With MinIO the files can be stored on a local system.

Azure

**Be aware:**

Setting up an Azure Storage requires an active Azure subscription!

1. Create a new Azure Storage account.
 - Basics:
 - Set account kind to **BlobStorage**.
 - Set blob access tier to **Hot**.
 - Networking:
 - Set connectivity method to **Public Endpoint**.
 - Advanced:
 - Disable **Blob public access**.
2. Wait for the storage account to be set up.
3. Open the details of the Storage account.
4. Go to the `settings/cors` Section.
5. Add a new `CORSEntry` and ensure the following configuration is used:
 - Allowed origins: *
(For POC and test, putting asterisk is OK. In production, make sure that the origin is set to the URL under which RayManageSoft Unified Endpoint Manager will be hosted).
 - Allowed methods: `DELETE, GET, HEAD, MERGE, POST, OPTIONS, PUT, PATCH`
 - Allowed headers: *
 - Exposed headers: *
 - Max age: 0

6. The Cloud Storage should be ready to use.

AWS

To use the AWS storage, create a new user in the AWS subscription. The user needs full access to the Amazon S3 Resource. After the creation of the user, an AccessKey and a Secret Key are displayed. Save those values as they are required during the setup of RayManageSoft Unified Endpoint Manager.



Best practice:

Raynet recommends turning on the **Block Public Access settings for account** for the S3 account.

For further instructions regarding these settings please refer to <https://docs.aws.amazon.com/AmazonS3/latest/userguide/configuring-block-public-access-account.html>

MinIO

MinIO is an open source object storage which supports storing files in the cloud or on a local file system. MinIO can be hosted on multiple platforms.



Best practice:

For easy installation, Raynet recommends the usage of the *MinIO Quickstart Guide*

The configured username and password will later be required by RayManageSoft Unified Endpoint Manager in order to connect to the MinIO server.

Installation

Installing on a Network Storage

1. Create an SQL Server

Create a simple MS SQL Server using the Azure Portal or use an existing MS SQL Server which is accessible over the internet.

2. Create the database

Depending on the choice, either create a new database using the Azure portal or create a new Database on existing an MS SQL Server (for example using Microsoft SQL Server Management Studio).

3. Prepare and validate connection strings

Copy the connection string to the SQL Server either from the Azure portal or use the correct format of the connection string for the local SQL databases. Ensure that the connection string is valid.

4. Install RayManageSoft Unified Endpoint Manager Backend

Create a new container instance using the following suggested parameters:

Basics:

- Image source: Docker Hub or another registry
- Image Type: Private
- Image: `raynetnightly.azurecr.io/raynet/raymanagesoftcloud/rmsc_backend:insider`
The image name was provided together with the docker credentials and should be adjusted accordingly.
- Image registry login server: `raynetnightly.azurecr.io`
- Image registry username: `yourUser`
- Image registry password: `yourPassword`
- OS type: Windows

Networking:

- Networking type: Public
- DNS name label: `yourDnsName`
- Ports: 80 TCP

Advanced:

- Restart Policy: Always
- Environment variables
 - SystemDb: yourConnectionString
 - ResultDb: yourConnectionString

**Be aware:**

Refer to *Appendix A: Environment variables* to find out more about these values.

Once the container is up and running, make sure to note the DNS name of the instance. You will need this value in the next step.

5. Install RayManageSoft Unified Endpoint Manager Web UI

Create a new container instance, using the following suggested parameters:

Basics:

- Image source: Docker Hub or another registry
- Image Type: Private
- Image: raynetnightly.azurecr.io/raynet/raymanagesoftcloud/rmsc_frontend:insider
The image name was provided to you with the docker credentials and should be adjusted accordingly
- Image registry login server: raynetnightly.azurecr.io
- Image registry username: yourUser
- Image registry password: yourPassword
- OS type: Windows

Networking:

- Networking type: Public
- DNS name label: yourDnsName
- Ports: 80 TCP

Advanced:

- Restart Policy: Always
- Environment variables
 - SystemDb: yourConnectionString
 - ResultDb: yourConnectionString
- BackendEndpoint: yourBackendDnsName
This should be the DNS name of your backend component.
- BackendPort: 80
For a production environment a more advanced setup using the 443 Port and HTTPS is highly recommended.
- BackendProtocol: http

The following parameter depend on the chosen storage hoster:

Azure

- `DefaultHoster: Azure`
- `AzureStorageEndpoint: yourStorageEndpoint`
This is the connection string property of Azure Storage. It can be found in the **Azure Portal > Storage Accounts > Account Details > Settings > Access Keys > Connection String** (key1 or key2).
- `AzureEndpointUrl: yourStorageEndpointUrl`
This is the primary endpoint property of your Azure Storage. It can be found in the **Azure Portal > Storage Accounts > Account Details > Settings > Access Keys > Primary Endpoint**.
- `AzureTokenTimeout: 60`

AWS

- `DefaultHoster: AWS`
- `AwsAccessKey=T1SS4CC322KEYYO83C3V`
This is the access key received during the setup of the AWS IAM user.
- `AwsSecretKey=exa+tfekKDsresRuBJ65forasecr3TK3ythATYIU`
This is the secret key received during the setup of the AWS IAM user.
- `AwsRegion=eu-central-1`
This is the region which should be used to host the storage.
A full list of the regions can be found here: <https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.RegionsAndAvailabilityZones.html>

MinIO

- `DefaultHoster: MinIO`
- `MinIOEndpoint=yourMinIOEndpoint (e.g. play.min.io:80)`
The endpoint of the used MinIO instance (ip:port) or (fqdn:port)
- `MinIOAccessKey=yourMinIOAccessKey`
The access key/user that has been configured during the MinIO setup.
- `MinIOSecretKey=yourMinIOSecretKey`
The secret key/password that has been configured during the MinIO setup.
- `MinIOSSL=true`
A boolean value indictating whether the MinIO server requires/uses a https connection or not (the usage of an https connection is recommended).

**Be aware:**

Refer to *Appendix A: Environment variables* to find out more about these values.

**Note:**

Once RayManageSoft Unified Endpoint Manager is started for the first time, all necessary databases will be set up using the provided Connection String. Specifically, every tenant in RayManageSoft Unified Endpoint Manager receives his own database, so ensure that the user that is running on the backend has access and permissions for the creation of new

databases.

Installing On-premise

1. Create a SQL Server

Set-up a new MS SQL Server or use an existing MS SQL Server which is accessible from the hosting environment.

2. Create the database

Create a new database on existing MS SQL Server (for example using Microsoft SQL Server Management Studio).

3. Prepare and validate connection strings

Copy connection string to your SQL Server. Ensure that the connection string is valid.

4. Install container images

The installation on on-premises environment is straightforward with the usage of compose file, which requires only minimal adjustment.

docker-compose.yml

The file has the following content:

```
version: "3.7"
services:

  frontend:
    image: raynetnightly.azurecr.io/raynet/raymanagesoftcloud/rmsc_frontend
    ports:
      - "80:80"
    restart: always
    env_file:
      - env_frontend.list

  backend:
    image: raynetnightly.azurecr.io/raynet/raymanagesoftcloud/rmsc_backend
    depends_on:
      - frontend
    ports:
      - "8080:80"
    restart: always
    env_file:
      - env_backend.list
```

Additionally, two text files with environment variables are needed:

env_frontend.list

The file has the following content:

```
SystemDb="SQLConnectionString"  
ResultDb="SQLReportConnectionString"  
BackendEndpoint="publiclyReachableDNS"  
BackendPort="8080"  
BackendProtocol="http"
```

The following parameters depend on the chosen storage hoster:

Azure

DefaultHoster: Azure

AzureStorageEndpoint: yourStorageEndpoint

This is the connection string property of Azure Storage. It can be found in the *Azure Portal > Storage Accounts > Account Details > Settings > Access Keys > Connection String* (key1 or key2).

AzureEndpointUrl: yourStorageEndpointUrl

This is the primary endpoint property of your Azure Storage. It can be found in the *Azure Portal > Storage Accounts > Account Details > Settings > Access Keys > Primary Endpoint*.

AzureTokenTimeout: 60

AWS

DefaultHoster: AWS

AwsAccessKey=T1SS4CC322KEYYO83C3V

This is the access key received during the setup of the AWS IAM user.

AwsSecretKey=exa+tfekKDsresRuBJ65forasecr3TK3ythATYIU

This is the secret key received during the setup of the AWS IAM user.

AwsRegion=eu-central-1

This is the region which should be used to host the storage.

A full list of the regions can be found here: <https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.RegionsAndAvailabilityZones.html>

MinIO

DefaultHoster: MinIO

MinIOEndpoint=yourMinIOEndpoint (e.g. play.min.io:80)

The endpoint of the used MinIO instance (ip:port) or (fqdn:port)

MinIOAccessKey=yourMinIOAccessKey

The access key/user that has been configured during the MinIO setup.

MinIOSecretKey=yourMinIOSecretKey

The secret key/password that has been configured during the MinIO setup.

MinIOSSL=true

A boolean value indicating whether the MinIO server requires/uses a https connection or not (the usage of an https connection is recommended).

env_backend.list

The file has the following content:

```
SystemDb="SQLConnectionString"  
ResultDb="SQLReportConnectionString"
```

Save all files in the same folder, so that the folder contains the following files:

- docker-compose.yml
- env_frontend.list
- env_backend.list

Adjust the values accordingly, paying attention to connection strings and Azure Storage credentials.



Refer to *Appendix A: Environment variables* to find out more about these values.

Once all three files are ready, open a PowerShell window or a terminal of your choice, navigate to the folder where the three files exist and execute the following command:

```
docker login -u <user> -p <password> raynetnightly.azurecr.io
```

This will login to the private Raynet Docker registry. The credentials will be provided by Raynet. If they are not available, either ask the administrator or contact Raynet. Then, ensure no container is running:

```
docker-compose down
```

Ensure that the newest version of the image is used:

```
docker-compose pull
```

Start all required containers and let them run in the background (daemon):

```
docker-compose up -d
```

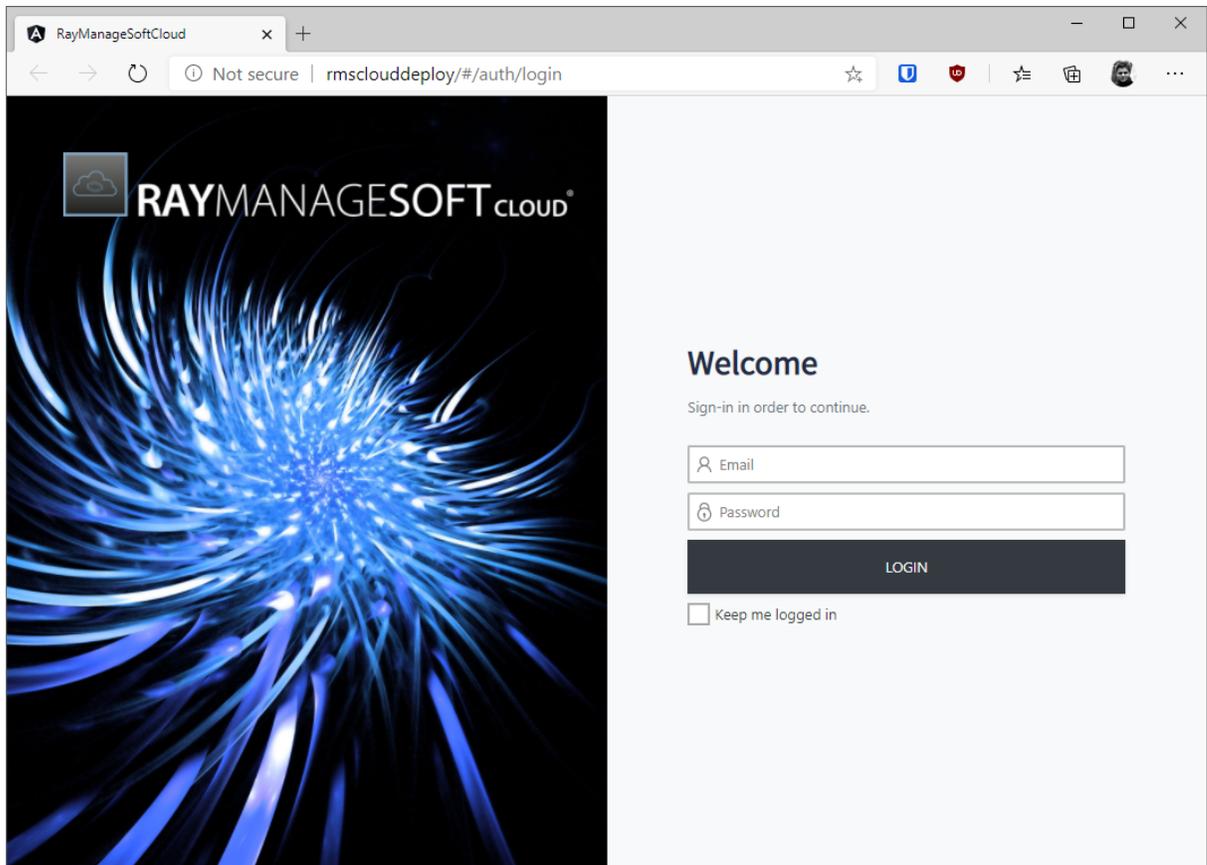
Finally, sign-out from Docker repository:

```
docker logout
```

These steps can be repeated in the future to perform an update of the instances with a minimal downtime.

First Login

Once both Docker containers are up and running, the FQDN of the hosting machine can be used to access the login page using a web browser of your choice. If RayManageSoft Unified Endpoint Manager has been installed in Azure, the FQDN of the machine can be found in the container instance details page.



The initial login information to the system are:

E-mail:
root@raynet.de

Password:
raynet

After the first login please visit the *Site-Administration / System Settings* page. There are a few important checks to be done:

- Ensure that the backend URL, port and protocol defined in the settings page are valid and match the parameters of the backend container. When a local installation is used, the FQDN of

the backend will most likely be the same as the web UI, with the only difference in port numbers. Should there be any mismatch, make sure to adjust the values as required.

- Change the initial password of the root user to something secure, using long sequence of letters, numbers and special characters.
- Download **Managed Device Client** from the **Devices** page and install it on the computers to manage. Once the agent is started, the device will appear in the **Devices** tab.



Be aware:

It may take up to 15 minutes for a machine to show up.

License Activation

RayManageSoft Unified Endpoint Manager needs a valid license to run. If there is no valid license, RayManageSoft Unified Endpoint Manager will open the activation screen.

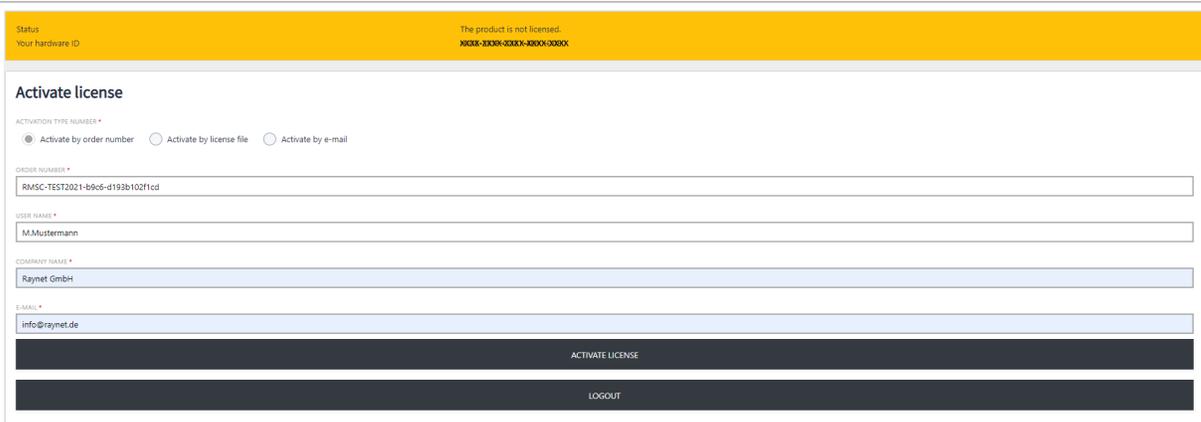
The product can be activated using one of the following methods.

- By supplying the order number.
- By supplying an already created license file (. rswl).
- By supplying a license string.

The currently selected option is marked in the selection field next to the name of the option.

Activation by Order Number

If this activation method is used, the order number that has been delivered by Raynet is used for the activation of RayManageSoft Unified Endpoint Manager.



Status: Your hardware ID The product is not licensed. XXXX-XXXX-XXXX-XXXX

Activate license

ACTIVATION TYPE NUMBER *

Activate by order number Activate by license file Activate by e-mail

ORDER NUMBER *

RMSC-TEST2021-b9cd-d193b102f1cd

USER NAME *

M.Mustermann

COMPANY NAME *

Raynet GmbH

E-MAIL *

info@raynet.de

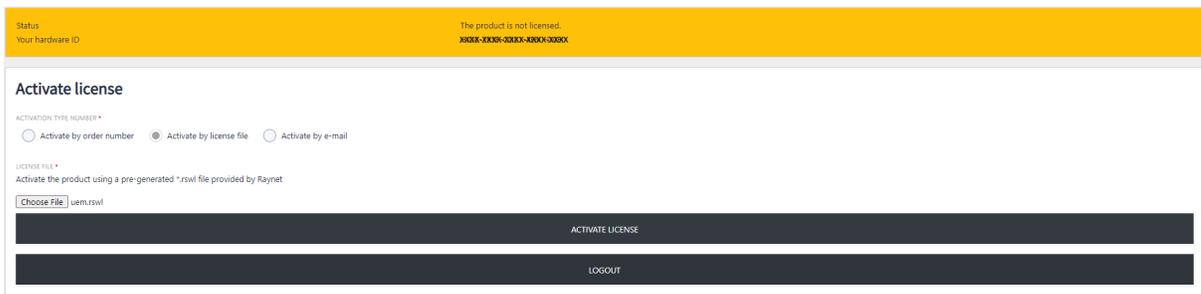
ACTIVATE LICENSE

LOGOUT

Enter all necessary information into the fields and choose the **ACTIVATE LICENSE** button. RayManageSoft Unified Endpoint Manager will check the validity of the information and then activate the product for the hardware ID which can be found at the top of the screen.

Activation by License File

This method can be used if there is already a valid license file (.rswl) for the hardware ID of the machine that is used for the installation of RayManageSoft Unified Endpoint Manager. The hardware ID of the machine can be found on the top of the screen.



Status: Your hardware ID The product is not licensed. XXXX-XXXX-XXXX-XXXX

Activate license

ACTIVATION TYPE NUMBER *

Activate by order number Activate by license file Activate by e-mail

LICENSE FILE *

Activate the product using a pre-generated *.rswl file provided by Raynet

uem.rswl

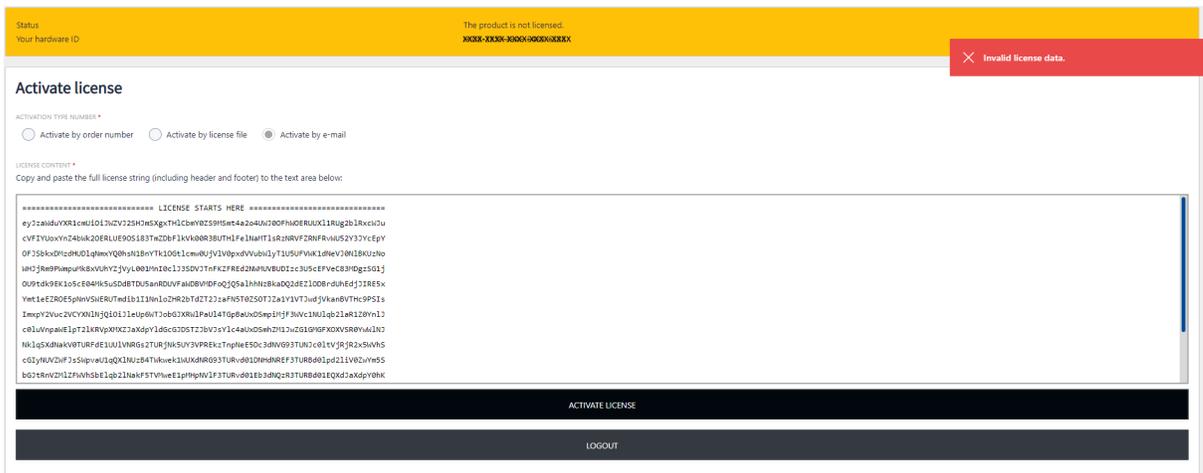
ACTIVATE LICENSE

LOGOUT

Select the **Choose File** button and browse for the license file. After the license file has been added and it is shown next to the **Choose File** button, choose the **ACTIVATE LICENSE** button to activate RayManageSoft Unified Endpoint Manager.

Activation by Email

If this method is chosen, RayManageSoft Unified Endpoint Manager can be activated by entering the license string into the text area that is shown when the option is selected. To receive this string, please contact your Raynet Support representative. It will then be delivered by email.



It is necessary to copy and paste the full license string including the header and the footer.

- Header:

===== LICENSE STARTS HERE =====

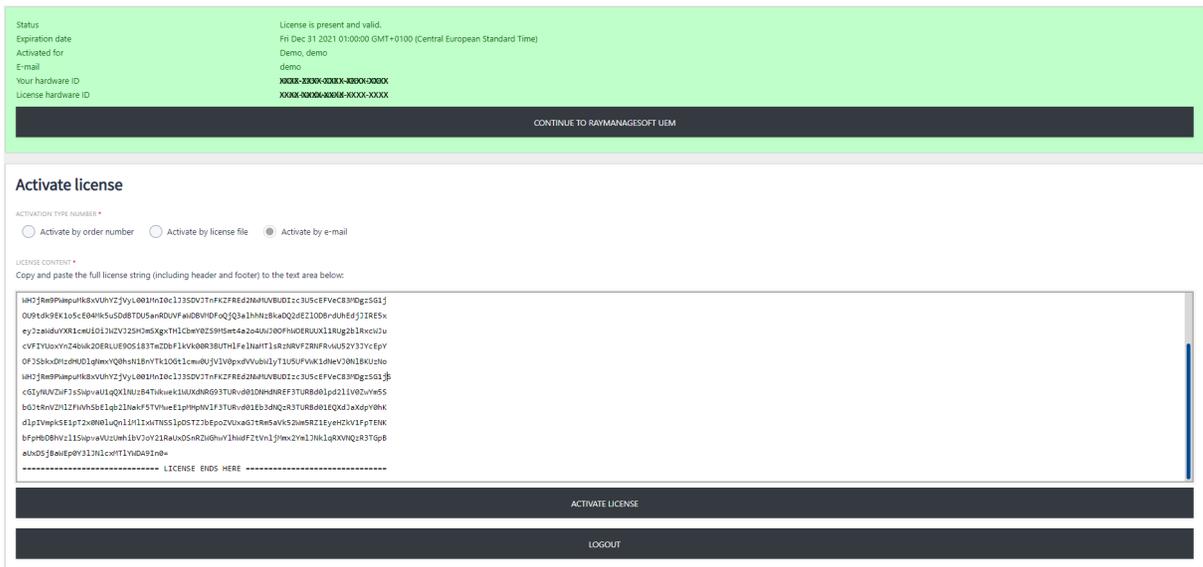
- Footer:

===== LICENSE ENDS HERE =====

If the information that has been entered is incorrect, an **Invalid license data** message will be shown on the top right side of the window. When the correct information has been entered, choose the **ACTIVATE LICENSE** button to continue with the activation.

Successful Activation

After RayManageSoft Unified Endpoint Manager has been successfully activated, the following window will be shown.



Either continue to RayManageSoft Unified Endpoint Manager by selecting the **CONTINUE TO RAYMANAGESOFT UEM** button, change the used license by selecting another license or enter different license information, or log out by selecting the **LOGOUT** button.

Troubleshooting

Application logs are available in the **Site-Administration / System Settings** section or in the Azure container details page (**Container instances > Details > Settings > Containers > Logs**).

Appendix A: Environment Variables

Docker images support a set of environment variables which can either be passed by an environment list file or directly as parameter to the docker command. The following is a reference of them.

SystemDb

This is a MSSQL connection string to the database where all system relevant data will be stored. The required tables will be created on initial start-up. In case the database does not exist yet, the user provided in the connection string requires the right to create databases.

ResultDb

This is a MSSQL connection string. It needs to point to the master database of an MSSQL Server and needs the permission to create new databases. Every time a new tenant is created from the RayManageSoft Unified Endpoint Manager web UI a new database will be created. The default Tenant which is created on start-up will use the `RMSC_default` database.

DefaultHoster

The default hoster for the storage of package files.

BackendEndpoint

This property describes the DNS name of the backend API Server which is used to communicate with the managed device agents. No protocol or port should be provided here.

BackendPort

This property describes the Port of the backend API Server which is used to communicate with the managed device agents.

BackendProtocol

This property describes the `http` protocol used to communicate with managed device agents (`http` and `https` are supported).

AzureStorageEndpoint

The default hoster specific configuration if Azure has been defined as default hoster. This must be set to the Azure Storage Endpoint. It can usually be found within the settings/Access keys section of your Azure Blob Storage.

AzureEndpointUrl

The default hoster specific configuration if Azure has been defined as default hoster. This must be set to the primary endpoint for the cloud storage. It can usually be found within the settings/

properties section of your Azure Blob Storage. The property name within this tab is Blob service/ Primary Endpoint.

AzureTokenTimeout

This value defines how long access tokens to upload/download packages from the cloud storage are valid. We recommend the value of 60.

AwsAccessKey

If AWS has been chosen as the default storage hoster, this is the access key that was received during the setup of the AWS IAM user for the default instance.

AwsSecretKey

If AWS has been chosen as the default storage hoster, this is the secret key that was received during the setup of the AWS IAM user for the default instance.

AwsRegion

If AWS has been chosen as the default storage hoster, this defines the region that is used to host the storage.

MinIOEndpoint

If MinIO has been chosen as the default storage hoster, this must be set to the endpoint of the used MinIO instance (ip:port) or (fqdn:port).

MinIOAccessKey

If MinIO has been chosen as the default storage hoster, this is the access key/user that has been configured during the MinIO setup.

MinIOSecretKey

If MinIO has been chosen as the default storage hoster, this is the secret key/password that has been configured during the MinIO setup.

MinIOSSL

If MinIO has been chosen as the default storage hoster, this defines whether the MinIO server is using an `https` connection. If set to `true`, `https` is used. If set to `false`, `https` is not used.

RayManageSoft Unified Endpoint Manager is part of the RaySuite

More information online
www.raynet.de



Raynet GmbH

Technologiepark 20
33100 Paderborn, Germany
T +49 5251 54009-0
F +49 5251 54009-29
info@raynet.de

www.raynet.de