Installation and Configuration Guide

Step-by-step instructions for installing, configuring, and setting up the Docker MinIO WHMCS module, including Docker server preparation, n8n workflow setup, WHMCS integration, email templates, and product configuration.

- Basic concepts and requirements
- WHMCS setup (install/update)
- Preparing Docker Server
- Setting up n8n workflow
- Add server
- Product Configuration
- Metric Billing
- Email Template (puqDockerMinIO Welcome Email)
- Email Template (puqDockerMinIO Update Email)
- Email Template (puqDockerMinIO Notification disk limit)

Basic concepts and requirements

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> Before you start, it is important to read and familiarize yourself with the following articles at this link: https://doc.puq.info/books/docker-modules

The **WHMCS Docker MinIO module** is part of the **WHMCS Docker module series** developed by **PUQcloud**. This module enables service providers to offer **MinIO Docker containers** as a service to their clients, allowing for seamless automation and integration.

The system consists of three core components:

WHMCS Module

The **core component**, installed in WHMCS, manages service provisioning and automation from the WHMCS side.

Debian 12 Server

A server running **Debian 12** with the following pre-installed:

- **Docker** — For container management

We have prepared instructions for installing and configuring Docker:
https://doc.puq.info/books/docker-modules/page/installing-docker-for-puqcloud-modules

n8n Server

This server facilitates communication between the WHMCS module and the Docker server, ensuring smooth workflow execution. To explore n8n's full potential, visit the **official n8n website** for documentation, tutorials, and community support.

Key Features & Concepts

Workflow Automation

n8n provides a **graphical workflow builder**, allowing users to automate various tasks, such as:

- **Sending notifications**
- **Configuring firewalls** on external routers
- **Managing DNS settings**
- **Custom automation processes** tailored to specific needs

Flexibility & Customization

The module offers **personalized settings** and supports **elastic automation**, giving clients full control over their n8n workflows.

WHMCS setup (install/update)

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System requirements

The module uses ionCube encoding. Your server must meet the following requirements:

Requirement	Minimum
PHP	8.2
WHMCS	9+ or higher
ionCube Loader	v13 or newer (v14, v15)

> **Note:** Module is coded with ionCube v13

> To install and update a module, you must perform one and the same action.

Step 1 — Download the latest version of the module

PHP 8.2

```
wget http://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-Docker-MinIO/php82/PUQ_WHMCS-Docker-MinIO-latest.zip
```

All versions are available via link: https://download.puqcloud.com/WHMCS/servers/PUQ_WHMCS-Docker-MinIO/

Step 2 — Unzip the archive with the module

```
unzip PUQ_WHMCS-Docker-MinIO-latest.zip
```

Step 3 — Copy and Replace

Copy the `puqDockerMinIO` directory from the extracted `PUQ_WHMCS-Docker-MinIO` archive to your WHMCS installation:

```
WHMCS_WEB_DIR/modules/servers/
```

> **Note:** To install and update a module, you must perform one and the same action — download and copy the latest version over the existing files.

Preparing Docker Server

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To install the Docker server for this module, please follow the instructions at the following link:

https://doc.puq.info/books/docker-modules/page/installing-docker-for-puqcloud-modules

Setting up n8n workflow

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Overview

The **Docker MinIO WHMCS module** uses a specially designed workflow for **n8n** to automate deployment processes. The workflow provides an API interface for the module, receives specific commands, and connects via SSH to a server with Docker installed to perform predefined actions.

Prerequisites

- You must have your own **n8n** server.
- Alternatively, you can use the official **n8n** cloud installations available at: n8n Official Site

Installation Steps

Install the Required Workflow on n8n

You have two options:

Option 1: Use the Latest Version from the n8n Marketplace

- The latest workflow templates for our modules are available on the official n8n marketplace.

- Visit our profile to access all available templates: PUQcloud on n8n

Option 2: Manual Installation

- Each module version comes with a workflow template file.
- You need to manually import this template into your n8n server.

n8n Workflow API Backend Setup for WHMCS

Configure API Webhook and SSH Access

- Create a **Basic Auth Credential** for the Webhook API Block in n8n.
- Create an **SSH Credential** for accessing a server with Docker installed.

Modify Template Parameters

In the **Parameters** block of the template, update the following settings:

- `server_domain` — Must match the domain of the WHMCS Docker server.
- `clients_dir` — Directory where user data related to Docker and disks will be stored.
- `mount_dir` — Default mount point for the container disk (recommended not to change).

Do not modify the following technical parameters:

- `screen_left`
- `screen_right`

Deploy-docker-compose

In the **Deploy-docker-compose** element, you have the ability to modify the Docker Compose configuration, which will be generated in the following scenarios:

- When the service is created
- When the service is unlocked
- When the service is updated

nginx

In the **nginx** element, you can modify the configuration parameters of the web interface proxy server.

- The **main** section allows you to add custom parameters to the **server** block in the proxy server configuration file.
- The **main_location** section contains settings that will be added to the **location /** block of the proxy server configuration. Here, you can define custom headers and other parameters specific to the root location.
- The **console** section allows you to add custom parameters to the **server** block in the WEB console proxy server configuration file.
- The **console_location** section contains settings that will be added to the **location /** block of the WEB console proxy server configuration. Here, you can define custom headers and other parameters specific to the root location of WEB console.

Bash Scripts

Management of Docker containers and all related procedures on the server is carried out by executing Bash scripts generated in **n8n**. These scripts return either a JSON response or a string.

- All scripts are located in elements directly connected to the **SSH** element.
- You have full control over any script and can modify or execute it as needed.

Add server

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Add a new server to the system WHMCS

Navigate to: **System Settings → Servers → Add New Server**

- Enter the correct **Name** and **Hostname**

> **Attention: Important Information** The **hostname** field represents the actual domain of the server running Docker and must match the **server_domain** parameter in the **n8n workflow**. If they do not match, communication will not function correctly. Additionally, this domain must be configured so that all its subdomains resolve to the IP address of the server running Docker.

Module settings

In the **Server Details** section, select the **"PUQ Docker MinIO"** module and enter the correct **username** and **password** for the **API endpoint** in the n8n workflow.

> Additionally, in the **Access Hash** field, insert the **URL of the API entry point** for the n8n workflow.

Server Details

Module	PUQ Docker MinIO — Test Connection — ✓ Connection successful. Some values have been auto-filled.
Username	minio
Password	••••
Access Hash	https://n8n.puqcloud.com/webhook/docker-minio
Secure	☑ Check to use SSL Mode for Connections
Port	443 ☐ Override with Custom Port

Save Changes | Cancel Changes

Product Configuration

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Add new product to WHMCS

Navigate to: **System Settings → Products/Services → Create a New Product**

In the **Module Settings** section, select the **"PUQ Docker MinIO"** module.

Configuration parameters

Parameter	Description
License key	A pre-purchased license key for the PUQ Docker MinIO module. For the module to work correctly, the key must be active
Disk space (GB)	Allocated disk space for the Docker container in GB
CPU	CPU cores allocated for the Docker container (e.g., 0.1, 1, 2)
RAM (GB)	RAM allocated to the Docker container in GB (e.g., 0.1, 1, 2)
Main domain	The primary domain for the web interface of the application. If not set, the main domain will be taken from the **hostname** parameter in the server settings
Subdomain	A personal subdomain assigned to each service. If left empty or if the subdomain is already taken, it will be automatically generated
Link to instruction	URL to a guide that will be displayed in the client panel if provided
Notification at %	The percentage threshold for disk space usage that triggers a notification to the client. Set 0 to disable

Parameter	Description
Notification email template	The email template for the notification that will be sent when the threshold is reached

Supported Macros for Subdomain

Macro	Description
`{user_id}`	Client ID
`{service_id}`	Service ID
`{random_digit_x}`	Random number (x defines the length)
`{random_letter_x}`	Random letter (x defines the length)
`{unixtime}`	Unix timestamp
`{year}`	Year
`{month}`	Month
`{day}`	Day
`{hour}`	Hour
`{minute}`	Minute
`{second}`	Second

Default subdomain template: `{user_id}-{service_id}-{second}`

License key: XXXXXX-XXXXXXX-XXXXXX-XXXXXX-XXXXXX

success: 2027-04-09T17:58:30+02:00

Docker Settings

Disk space (GB)

10

Allocated disk space for Docker container in GB. Ex: 1

CPU

1

CPU cores allocated. Ex: 0.1

RAM (GB)

1

RAM allocated in GB. Ex: 0.1

Domain Settings

Main domain

The main domain to which the container subdomain will be added.
If not filled in, the server domain will be used.

Subdomain

{user_id}-{service_id}-{second}

The app subdomain template using macros.
`{user_id}`, `{service_id}`, `{random_digit_x}`, `{random_letter_x}`
`{unixtime}`, `{year}`, `{month}`, `{day}`, `{hour}`, `{minute}`, `{second}`

Service Notifications

Notification at %

80

Threshold to notify the user about disk space usage. Set 0 to disable.

Notification email template

puqDockerMinIO Notification disk limit

Email template for disk limit notifications

Client Area

Link to instruction

https://puq.info/

A link to the instruction will be reflected in the client area.

Metric Billing

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To bill certain metrics separately, you can use the standard WHMCS Metric Billing mechanism.

To configure it, you need to enable the required metrics and set the desired prices. Metrics work based on the standard WHMCS mechanism, the description of which can be found here:

https://docs.whmcs.com/products/configuration-options/usage-billing/

The module provides the following metrics:

Metric	Description
Traffic IN (GB)	Incoming network traffic in gigabytes
Traffic OUT (GB)	Outgoing network traffic in gigabytes



Email Template (puqDockerMinIO Welcome Email)

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Create an email template for customer notifications.

Navigate to: **System Settings → Email Templates → Create New Email Template**

Template configuration

Parameter	Value
Email Type	Product/service
Unique Name	`puqDockerMinIO Welcome Email`

Email Subject

```
MinIO Order Information
```

Email Body

```
Dear {$client_name},

Your order has been accepted for implementation.

Product/Service: {$service_product_name}
Payment Method: {$service_payment_method}
Amount: {$service_recurring_amount}
Billing Cycle: {$service_billing_cycle}
Next Due Date: {$service_next_due_date}



The installation and setup of your MinIO instance is in progress.
Within the next 4 minutes, you will be able to use your MinIO instance.

Upon your first login, you will need to create an account.

Here is the link to your MinIO server.

https://console.{$service_domain}/
Thank you for choosing us.

{$signature}
```

Available template variables

Variable	Description
`{$client_name}`	Client full name
`{$service_product_name}`	Product/service name
`{$service_payment_method}`	Payment method
`{$service_recurring_amount}`	Recurring amount
`{$service_billing_cycle}`	Billing cycle

Variable	Description
`{$service_next_due_date}`	Next due date
`{$service_domain}`	Service domain

> **Note:** Standard WHMCS merge fields are also available in this template.

Email Template (puqDockerMinIO Update Email)

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Create an email template for customer notifications.

Navigate to: **System Settings → Email Templates → Create New Email Template**

Template configuration

Parameter	Value
Email Type	Product/service
Unique Name	`puqDockerMinIO Update Email`

Email Subject

```
MinIO Update Information
```

Email Body

```
Dear {$client_name},

Your instance is currently being updated.
You will be able to use your MinIO server again within 3 minutes.

Here is the link to your MinIO server.

https://console.{$service_domain}/
Thank you for choosing us.

{$signature}
```

Available template variables

Variable	Description
`{$client_name}`	Client full name
`{$service_domain}`	Service domain

> **Note:** Standard WHMCS merge fields are also available in this template.

Email Template (puqDockerMinIO Notification disk limit)

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Create an email template for customer notifications.

Navigate to: **System Settings → Email Templates → Create New Email Template**

Template configuration

Parameter	Value
Email Type	Product/service
Unique Name	`puqDockerMinIO Notification disk limit`

Email Subject

```
Disk space usage {$disk_used_percentage}%
```

Email Body

```
Dear {$client_name},

We want to inform you that your MinIO service is running low on disk space.
Please take action to prevent service interruptions.

Service Details:

Product/Service: {$service_product_name}
Domain: {$service_domain}
Total Disk Space: {$disk_total}
Used Disk Space: {$disk_used} ({$disk_used_percentage}%)
Consider freeing up space or upgrading your plan if needed.

{$signature}
```

Available template variables

Variable	Description
`{$client_name}`	Client full name
`{$service_product_name}`	Product/service name
`{$service_domain}`	Service domain
`{$disk_total}`	Total disk space
`{$disk_used}`	Used disk space
`{$disk_used_percentage}`	Used disk space percentage

> **Note:** Standard WHMCS merge fields are also available in this template.