

Configuring FusionHub with Cloud-init for Automated Setup

January 2025

Introduction

FusionHub integrates with cloud-init to automate and streamline its configuration during deployment. It leverages the user-data mechanism to apply specific settings like credentials, license keys, and other configurations. The supported methods for providing user-data depend on the deployment platform:

NoCloud

- Supported Platforms: The VM supports mounting a CD-ROM ISO. e.g.,: VMware ESXi, Proxmox, Hyper-V
- Requires creating a user-data file and building a seed ISO image.
- The ISO is then attached to the virtual machine to deliver configuration data.

Cloud Providers

- Supported Platforms: AWS, Azure, Google Cloud
- Provide the user-data text directly through the cloud provider's console during instance deployment.

Understanding these workflows will help ensure seamless FusionHub deployments across various platforms.

Firmware Requirement

- A FusionHub base image running firmware version 8.5.1s045 (or later) is required.
- [Download the base image here.](#)
- For additional information and best practices, refer to the [FusionHub User Manual and Installation Guide](#).

Preparing the Configuration Data

User-Data File

The user-data file is the cornerstone of FusionHub's cloud-init configuration. It contains essential settings in a structured format:

```
Unset
TYPE="Peplink_User_Data"
VERSION="1"
USERNAME="YourUsername"
PASSWORD="YourPassword"
LICENSE="YourLicenseKey"
CFG="YourConfigInBase64" # The base64 encoded configuration file
(fusionhub.conf), no spaces/line breaks
```

Replace the placeholders with the appropriate values:

- **USERNAME:** The admin username for FusionHub.
- **PASSWORD:** The admin password for FusionHub.
- **LICENSE:** FusionHub license key.
- **CFG:** Base64-encoded configuration file (fusionhub.conf).
The Base64-encoded string should contain no spaces or line breaks.

Note:

- fusionhub.conf is the configuration file for FusionHub, which can be downloaded from the FusionHub Web Admin or from the "Configuration Backups" section under "InControl" > "Device Details."
- The Base64-encoded string in the CFG field must not contain spaces or line breaks.
- The USERNAME and PASSWORD in the user-data file will override those in the base64-encoded fusionhub.conf. If these fields are omitted, FusionHub will use the credentials from the configuration file.

Partial Configuration Options:

FusionHub supports partial configurations, allowing you to configure only the fields you want.

Examples:

- To set only a password, include the PASSWORD field and omit USERNAME, LICENSE, and CFG.
- To configure only the license key: Include only the LICENSE field.

Examples of user-data:

Set Only the Password:

```
Unset
TYPE="Peplink_User_Data"
VERSION="1"
PASSWORD="YourPassword"
```

Set Only the License Key:

```
Unset
TYPE="Peplink_User_Data"
VERSION="1"
LICENSE="YourLicenseKey"
```

Full Configuration (All Fields):

```
Unset
TYPE="Peplink_User_Data"
VERSION="1"
USERNAME="YourUsername"
PASSWORD="YourPassword"
LICENSE="YourLicenseKey"
CFG="YourConfigInBase64"
```

Creating the Base64 Config String

Download the Device Configuration File:

Retrieve the configuration file (e.g., fusionhub.conf) from an existing FusionHub instance via the Web UI or from InControl, to use as a configuration template.

Encode the Configuration File in Base64:

On Linux:

- Open a terminal,
- Navigate to the directory containing fusionhub.conf
- Run the following command:

```
Unset  
cat fusionhub.conf | base64 -w 0 > config_base64.txt
```

If using MacOS, run the following command on terminal

```
Unset  
cat fusionhub.conf | base64 -b 0 > config_base64.txt
```

This creates a file named config_base64.txt containing the Base64-encoded string.

Example Workflow

NoCloud Cloud-Init

Create a file named “user-data” with the following structure, and copy the string inside config_base64.txt and paste it into the CFG field.

```
Unset
TYPE="Peplink_User_Data"
VERSION="1"
USERNAME="YourUsername"
PASSWORD="YourPassword"
LICENSE="YourLicenseKey"
CFG="YourConfigInBase64"
```

Replace the placeholders:

- **YourUsername:** Enter your desired username.
- **YourPassword:** Enter your desired password.
- **YourLicenseKey:** Enter the FusionHub license key.
- **YourConfigInBase64:** Paste the Base64-encoded string from config_base64.txt.

Example “user-data” file:

```
Unset
TYPE="Peplink_User_Data"
VERSION="1"
USERNAME="thisismyusername"
PASSWORD="thisismypassword"
LICENSE="BACDXXXXXXXXXX"
CFG="LnAQRKzTUlt41l8ZdkJ7hcaH5HG3ZDLPSRQ3Nh8kLYLkRo8xZQGpKdPBgPVSrbDIjCYXP0/T/H
0v0iXNebDb70v92jiMscZek6207/Wvy2t0ju1xDQNqCU4M271SM5FCxQYuGM17NzSWprQEwvPCVbsZ
DGJjx060fTLK+x00lDp5o8jWkV0ksVGPAMVT68u0EC/gw9UIW49i0fkAGgcuY6QHwY5ZEi19CzTkbxm
04r9t1gTwl0mtHKqQEtYpnUfMv9zUw022sBzEhjEDlw74P8E0h1n++JK+2CfFUKWH/qvjqpPk0dSsA
jKdWeWc2FTSDeeawzC2D4GL94dp/hZQ=="
```

Create the ISO Image with the user-data File

On Linux:

Run the following command to create the ISO image:

```
Unset
genisoimage -output cloud-init.iso -volid cidata -joliet -rock user-data
```

On MacOS:

Place the user-data file in a subdirectory named config:

```
Unset
mkdir config
mv user-data config/
```

Create the ISO image using the hdiutil command:

```
Unset
hdiutil makehybrid -o cloud-init.iso -hfs -iso -default-volume-name cidata
./config/
```

Upload and Mount the ISO on the VM

- Upload the cloud-init.iso file to the hypervisor.
- Mount the ISO as CD-ROM of the FusionHub VM
- Power on the FusionHub VM. The user-data file in the ISO will be read during the initial boot to configure FusionHub.

AWS

- Launch the FusionHub from AWS Marketplace
- In Launch an instance, scroll down to Advanced details at the bottom of the page
- Paste the Peplink user-data (as outlined above) into the “User data” field

User data - optional [Info](#)

Upload a file with your user data or enter it in the field.

 [Choose file](#)

```
TYPE="Peplink_User_Data"
VERSION="1"
USERNAME="thisismyusername"
PASSWORD="thisismypassword"
LICENSE="BACDXXXXXXXXXX"
CFG="LnAQRKzTUlt41l8ZdkJ7hcaH5HG3ZDLPSRQ3Nh8kLYLkRo8xZQGpKdPBgPVSRbDijCYXP0/T/H0v
OiXNebDb70v92jiMscZek6207/Wvy2tOjulxDQNqCU4M271SM5FCxQYuGMI7NzSWprQEQvwPCVbsZDG
JjxO6OfTLK+x0OLDp5o8jWkVOKsVGPAMVT68u0EC/gw9UIW49i0fkAGgcuY6QHwY5ZEil9CzTkboxm04r9
tlgTwlOmtHKqqEtYpnUfMvw9zUwO22sBzEhjEDlw74P8E0h1n++JK+2CfFukWH/qvjqpPpKODsSsAjKdWe
Wc2FTSDeeawzC2D4GL94dp/hZQ=="
```

☐ User data has already been base64 encoded

Azure

- Launch FusionHub from Azure Marketplace.
- In the “Advanced” tab section during instance launch, paste the Peplink user-data into “Custom Data”.

Create a virtual machine ...


[Help me create a low cost VM](#)
[Help me create a VM optimized for high availability](#)
[Help me choose the right VM](#)

[Basics](#)
[Disks](#)
[Networking](#)
[Management](#)
[Monitoring](#)
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Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.

Extensions

Extensions provide post-deployment configuration and automation.

[Extensions](#) 
[Select an extension to install](#)

VM applications

VM applications contain application files that are securely and reliably downloaded on your VM after deployment. In addition to the application files, an install and uninstall script are included in the application. You can easily add or remove applications on your VM after create. [Learn more](#) 

[Select a VM application to install](#)

Custom data

Pass a script, configuration file, or other data into the virtual machine **while it is being provisioned**. The data will be saved on the VM in a known location. [Learn more about custom data for VMs](#) 

Custom data

```
TYPE="Peplink_User_Data"
VERSION="1"
USERNAME="thisismyusername"
PASSWORD="thisismypassword"
LICENSE="BACDXXXXXXXXX"
CFG="LnAQRKzTUlt41I8ZdkJ7hcaH5HG3ZDLPSRQ3Nh8kLYLkRo8xZQGpKdPBgP
VSRbDijCYXP0/T/H0vOiXNebDb70v92jiMscZek6207/Wvy2tOjulxDQNqCU4M27"
```

 Your image must have a code to support consumption of custom data. If your image supports cloud-init, custom-data will be processed by cloud-init. [Learn more about custom data for VMs](#) 

Google Cloud Platform

- Convert the Peplink user-data to Base64 string.

Example “user-data” file:

```
Unset
TYPE="Peplink_User_Data"
VERSION="1"
USERNAME="thisismyusername"
PASSWORD="thisismypassword"
LICENSE="BACDXXXXXXXXXX"
CFG="LnAQRKzTU1t41l8ZdkJ7hcaH5HG3ZDLPSRQ3Nh8kLYLkRo8xZQGpKdPB
gPVSRbDIjCYXP0/T/H0v0iXNebDb70v92jiMscZek6207/Wvy2t0julxDQNqC
U4M271SM5FCxQYuGM17NzSWprQEQvwPCVbsZDGJjx060fTLK+x001Dp5o8jWk
V0ksVGPAMVT68u0EC/gw9UIW49i0fkAGgcuY6QHwY5ZEil9CzTkbxm04r9t1g
Twl0mtHKqQEtYpnUfMvw9zUw022sBzEhjEDlw74P8E0h1n++JK+2CfFUKWH/q
vjqpPpK0dSsAjKdWeWc2FTSDeeawzC2D4GL94dp/hZQ=="
```

Then perform the following command in terminal:

Linux:

```
Unset
cat user-data | base64 -w 0
```

MacOS:

```
Unset
cat user-data | base64 -b 0
```

- Launch the FusionHub from GCP Marketplace, and in the bottom page of “New FusionHub Deployment”

- Paste the Base64 string of the Peplink user-data.

Custom User-Data

User-Data (Base64)

```
VFIQRT0iUGVwbGlua19Vc2VyX0RhdGEiCIZFUINJT049IjEiCIVTRVJOQU1FPSJhZG1pt
```

DEPLOY