

ManageEngine PAM360

(A Division of Zoho Corporation)

www.manageengine.com/pam360



**ManageEngine
PAM360**

ManageEngine PAM360

INSTALLATION GUIDE

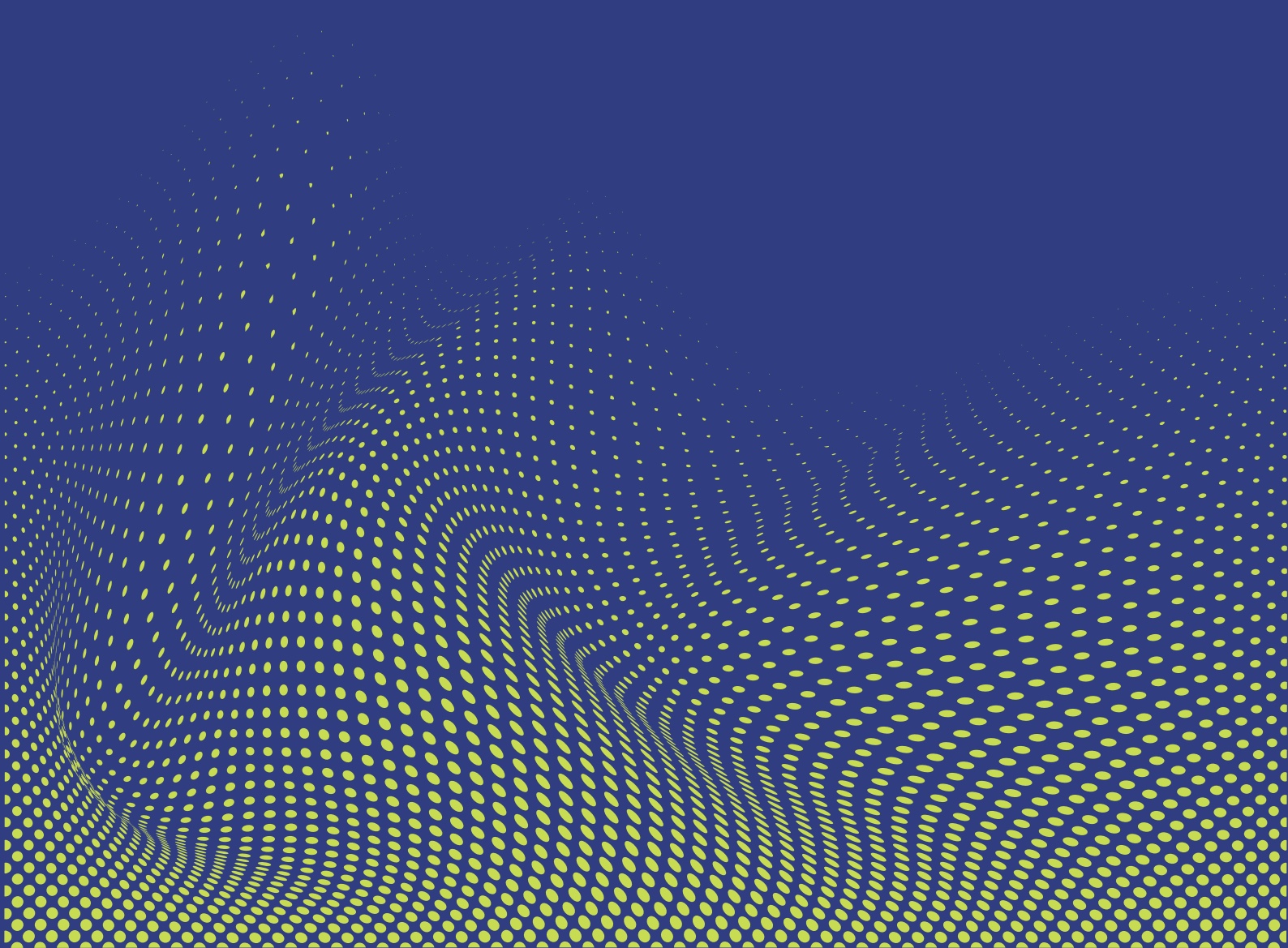


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1. Prerequisites

Apart from the standard system requirements (both hardware and software), the following elements are essential for the proper functioning of the PAM360 server:

Note: The following are required if you are planning to use PAM360's account discovery and password reset provisions.

- An external mail server (**SMTP server**) for the functioning of PAM360 server and to send various notifications to users.
- A service account that has either domain admin rights or local admin rights in the PAM360 server and in the target systems that you would like to manage.
- **Microsoft .NET framework.**
- **Visual C++ Redistributable for Visual Studio 2015 and above** (for PAM360's Account Discovery and Password Reset features).

Note: Once you complete the installation, from the user profile drop-down, navigate to **Support > Software Requirements > Check Configurations** to check whether the minimum requirements are satisfied for the PAM360 application.

2. System Requirements

The below table details the hardware and software configurations required by PAM360:

Hardware	Operating Systems	Web Interface
Processor QuadCore or above	Windows <ul style="list-style-type: none"> • Windows Server 2025 • Windows Server 2022 • Windows Server 2019 • Windows Server 2016 	HTML client requires one of the following browser** to be installed in the system: Microsoft Edge (on Windows), Chrome, Firefox, and Safari (on Windows, Linux and Mac) **PAM360 is optimized for 1280 x 800 resolution and above.
RAM 8 GB or above	Linux <ul style="list-style-type: none"> • Ubuntu 18.04 and above • CentOS 6 and above 	Database PostgreSQL 14.17, bundled with the product.

Hardware	Operating Systems	Web Interface
Storage 20 GB or above	<ul style="list-style-type: none"> Red Hat Linux 9.0 Red Hat Enterprise Linux 5.x and above AlmaLinux 9.x and above 	MS SQL Server 2022 MS SQL Server 2019 MS SQL Server 2016 The SQL server should be installed in Windows Server 2016 and above.
Note: For Session Recordings, the disk space requirement may vary based on the usage levels.	Note: In general, PAM360 works well with any flavor of Linux and can also be run on VMs of the above operating systems.	

3. Components of PAM360

You will need a set of basic components that helps you run PAM360 in your environment effectively.

They are:

1. The **PAM360 server**
2. The **PAM360 Agent** (optional):
 - To perform operations in the PAM360 server from the other transient machines
 - To establish connections with remote resources that are not connected to the PAM360 server and manage them from PAM360
 - Remote password resets of domain accounts without the domain controller's admin credentials
3. The **PAM360 Remote Connect** (optional):
 - To launch direct remote connections via password-less login to Windows and SSH-based target resources without needing to install multiple third-party remote clients or web browser based clients
4. The database **PostgreSQL 14.17**:
 - Bundled with PAM360 and runs as a separate process
 - Accepts connections only from the host where it is running
 - Allows a connection from a configured secondary server for replication.

4. Ports used by PAM360

The below table lists the set of all TCP ports used by PAM360 for remote access:

Port Name	Port Number	Direction
PostgreSQL	3456	Outbound
Web client	8282 {Https access}	Inbound
SSH	22	Outbound
LDAP without SSL	389	Outbound
LDAP with SSL	636	Outbound
SMTP	25	Outbound
MS SQL	1433	Outbound
Oracle	1521	Outbound
Sybase ASE	5000	Outbound
Password verification	135, 139, 445	Outbound
SSH CLI	6622	Inbound
Auto Logon Spark View Gateway	8283 {Https access}	Inbound
RDP	3389	Outbound
REST API	8282	Inbound
SNMP	162	Outbound
Syslog	514	Outbound

5. Installing PAM360

You can install PAM360 in both Windows and Linux operating systems.

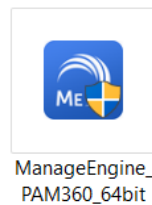
5.1 Prerequisites

Before you begin the installation, ensure to do the following:

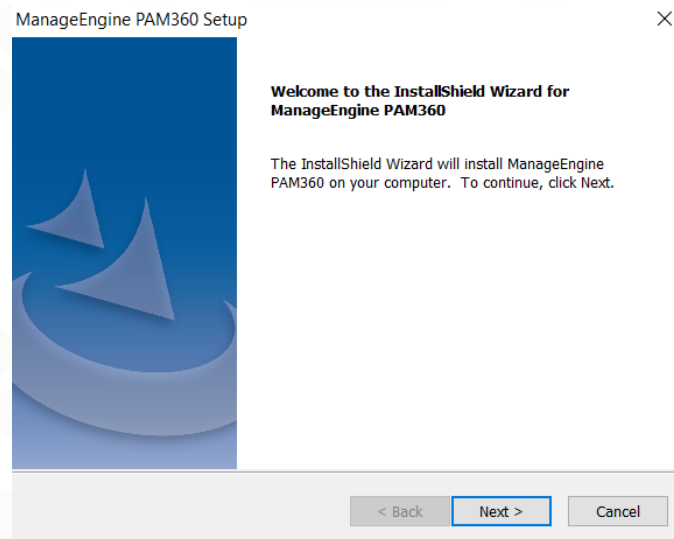
- [Download](#) the latest version of PAM360.
- Ensure that it satisfies the System Requirements.

5.2 Steps to Install PAM360 in Windows

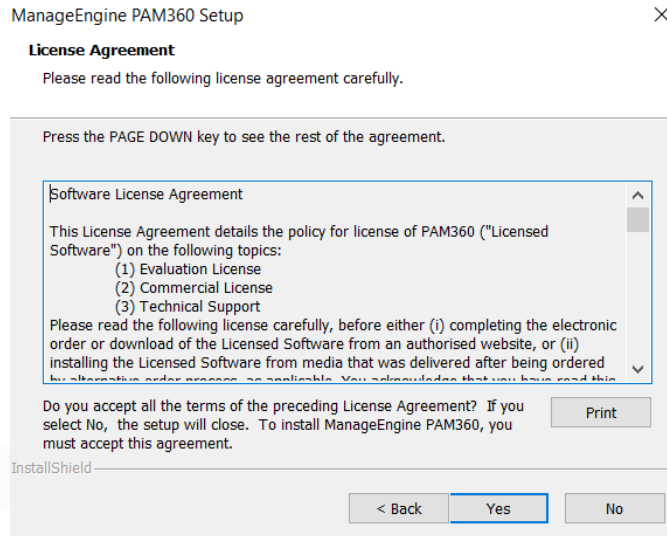
1. To begin the installation, double click the **ManageEngine_PAM360.exe** icon.



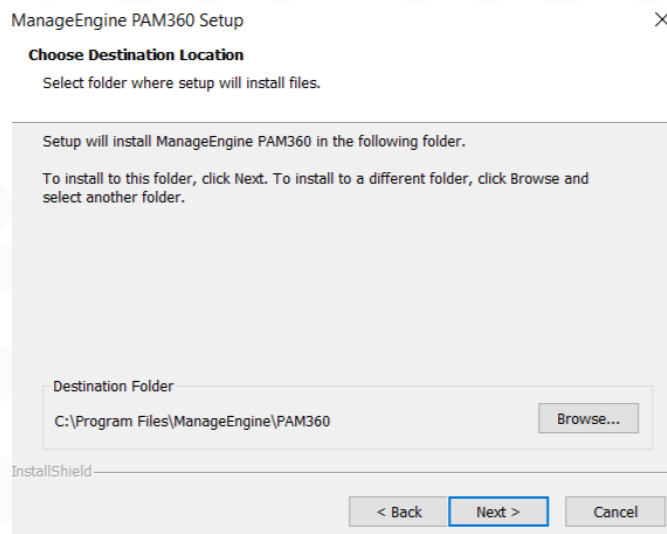
2. The **InstallShield Wizard** for PAM360 appears on the screen. Click **Next** to continue the installation.



3. The Software **License Agreement** appears. Read the Agreement carefully. Click **Yes** to agree and proceed with the installation. Click **Back** to go back to the previous wizard. Click **No** to exit the setup. You can also **Print** the License Agreement for future reference.



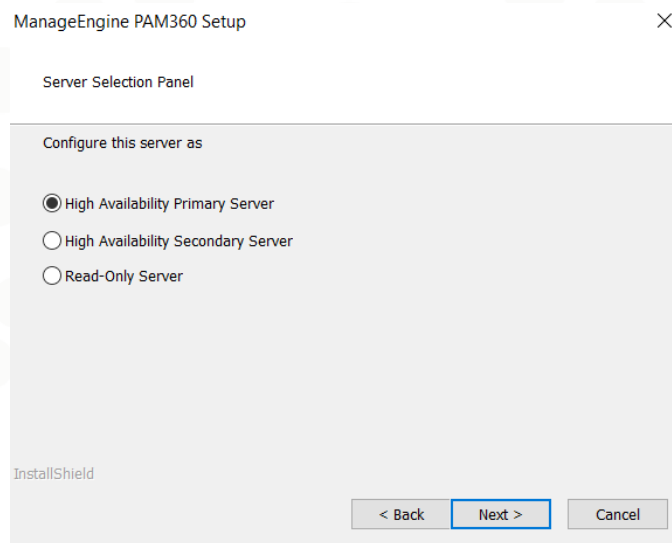
4. Choose the folder to install PAM360 on your system. You can either go with the default location, **C:\Program Files\Manage Engine\PAM360** or click **Browse** to install PAM360 in a different location. Click **Next** to proceed with the installation. Click **Back** to go back to the previous wizard.



5. The **Server Selection Panel** appears. Here, select the option relevant to the server you are setting up, e.g., **Read-Only Server**.
 - i. **High Availability Primary Server** - The primary server will be your predominant server, which controls and manages PAM360's operations and services. It will always be fully functional, with all the features and functions provided by the PAM360 intact.
 - ii. **High Availability Secondary Server** - Select this option if you wish to install PAM360 in another instance - a secondary server. The secondary server will offer 'Read/Write' access

to users (except password reset) whenever the primary server is down and until it is brought back to service. The changes made in the database in the intervening period will be automatically synchronized with the primary server upon connection restoration.

- iii. **Read-Only Server** - Select this option to configure PAM360 in multiple instances in your system environment. The Read-Only server(s) acts like mirror server(s) and synchronizes all the actions carried out by the primary server. In case of a primary server failure, any Read-Only server can be configured as the primary server.



6. The **Registration for Technical Support** dialog box appears. Fill in the necessary details, such as **Name**, **E-mail Id**, **Phone**, **Company Name**, and **Country**. Click **Next** to proceed with the installation. Click **Skip** if you do not want to register. Click **Back** to go back to the previous wizard.

ManageEngine PAM360 Setup ×

Registration for Technical Support (Optional)
Enter Your Details below

Name	<input type="text"/>
E-mail Id *	<input type="text"/>
Phone	<input type="text"/>
Company Name	<input type="text"/>
Country *	-Select- ▼

By clicking 'Next', you agree to our terms and conditions [Privacy Policy](#).

7. Now, the **Begin Installation** wizard appears that will require you to review your settings and begin the installation. Click **Back** to make any changes or click **Next** to proceed with the installation.

ManageEngine PAM360 Setup ×

Begin Installation
Review settings and begin installation

Setup has enough information to begin the installation. Click Back to make any changes. Click Next to begin the installation.

Current Settings:

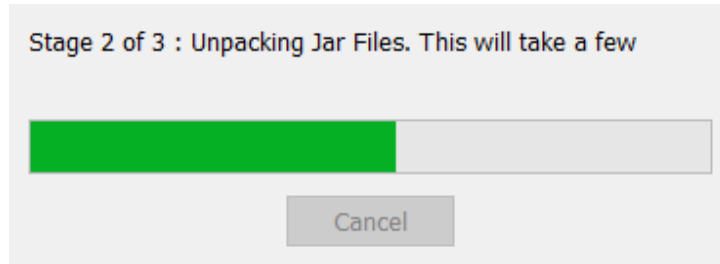
Installation Directory : C:\Program Files\ManageEngine\PAM360

InstallShield

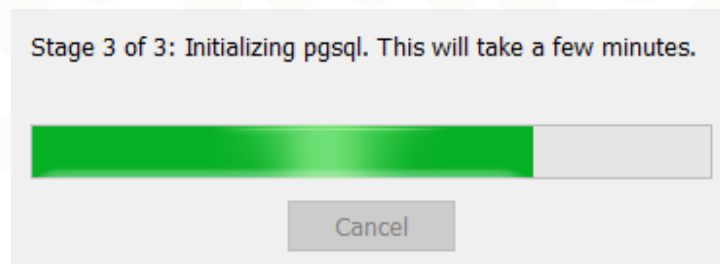
8. The installation begins and the following happens step-by-step:
- i. **Extracting files**

Stage 1 of 3 : Extracting files. This will take a few minutes.

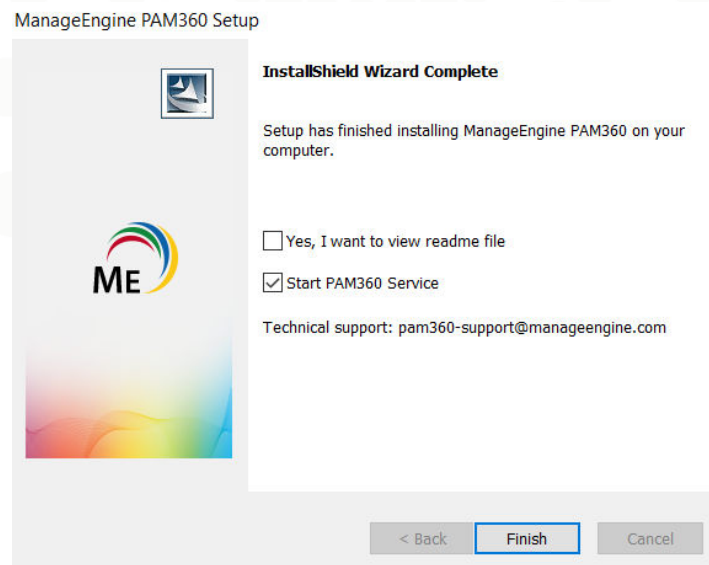
ii. Unpacking Jar Files



iii. Initializing PostgreSQL

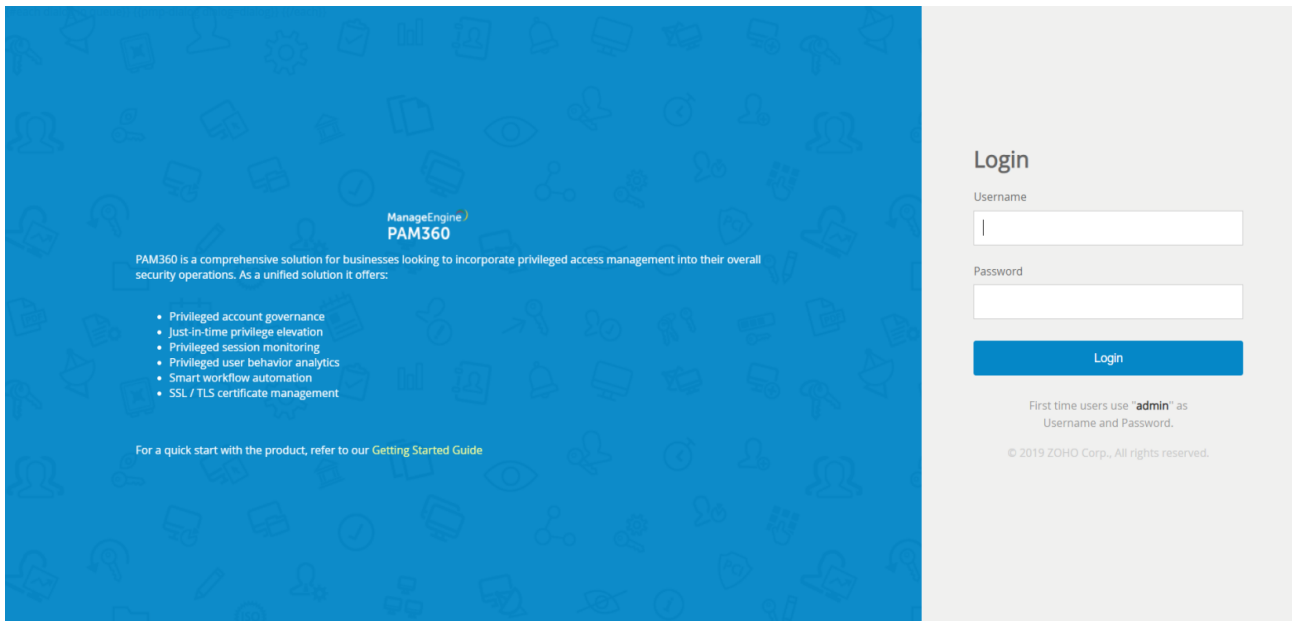


9. Now, a wizard appears, indicating the completion of installation process. Choose to do any of the following by selecting the corresponding checkboxes:
- Select the **Yes, I want to view readme file** check box, to view the readme file.
 - Select the **Start PAM360 Service** check box, to start the PAM360 service.
 - Uncheck the box(es) if you do not want to view the readme file and/or start PAM360 service.



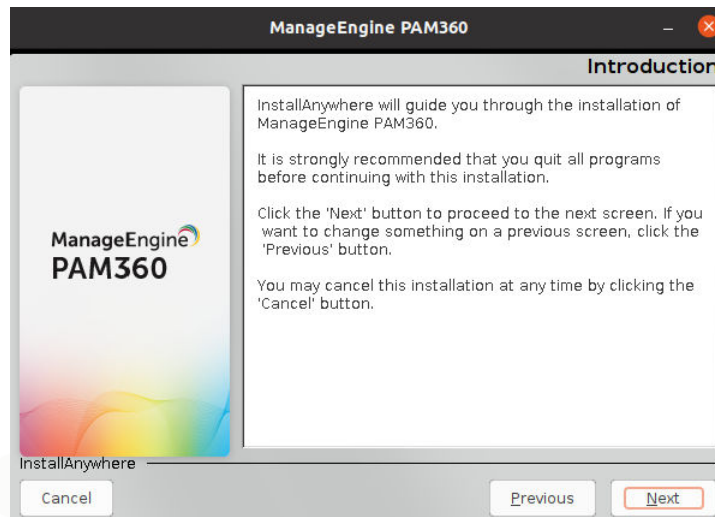
10. Click **Finish**.

The login page of PAM360 shows up in your default browser, as shown below. Enter **'admin'** as the **Username** and **Password** to login into the default administrator account and to proceed to work with PAM360 application.

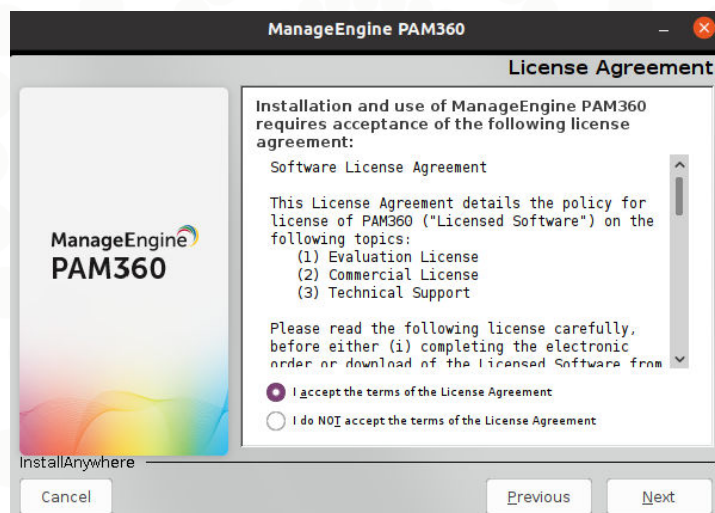


5.3 Steps to Install PAM360 in Linux

1. Download the file **ManageEngine_PAM360.bin** for Linux.
2. Execute the command: **chmod a+x <file-name>** to assign the executable permission.
3. Execute the command: **./<file_name>** or **./<file_name> -i console** (if you are installing on a headless server).
4. The **InstallAnywhere** wizard for PAM360 appears on the screen with an introduction. Click **Next** to continue the installation.



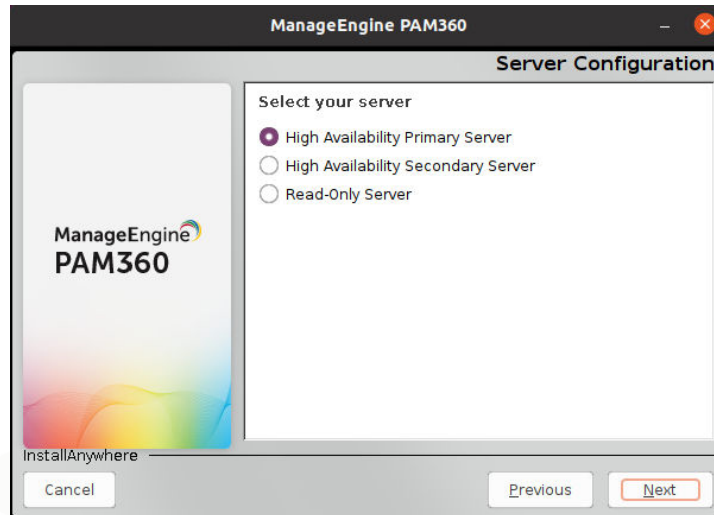
5. The PAM360 **License Agreement** appears. Read the Agreement carefully and click **I accept the terms of the License Agreement** to proceed with the installation. Click **Previous** to go back to the previous wizard. Click **Cancel** to exit the setup anywhere between the installation.



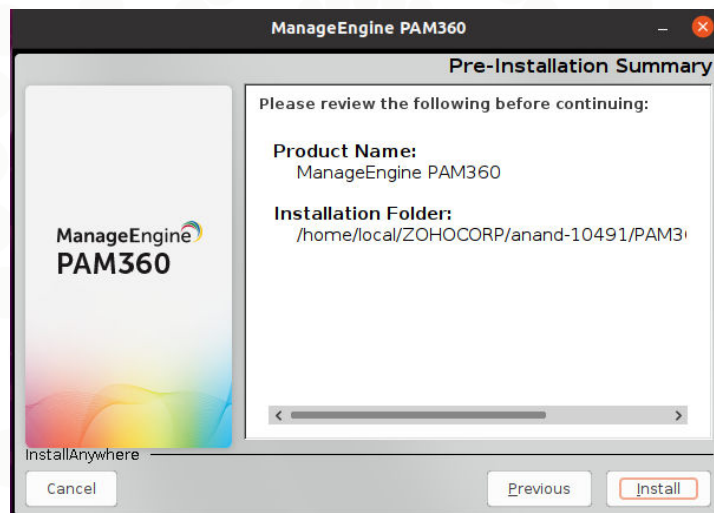
6. Choose the folder to install PAM360 on your system. You can either go with the default location, or click **Choose** to install PAM360 in a different location. You can also click **Restore Default Folder** to change from the given different location to the default location. Click **Next** to proceed with the installation. Click **Previous** to go back to the previous wizard.



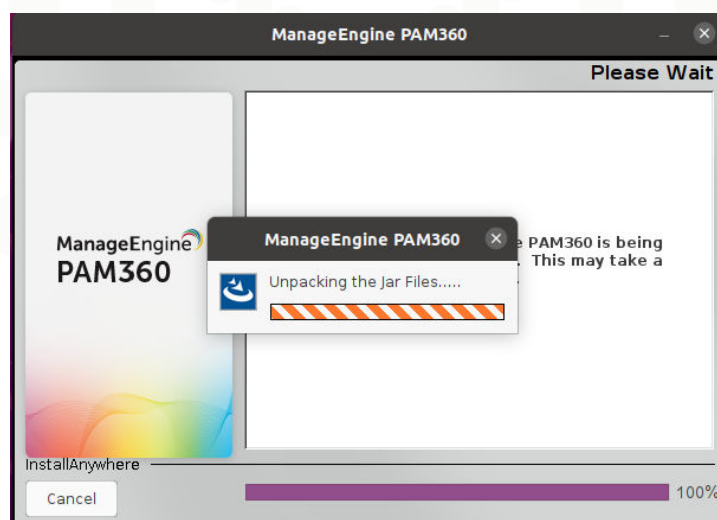
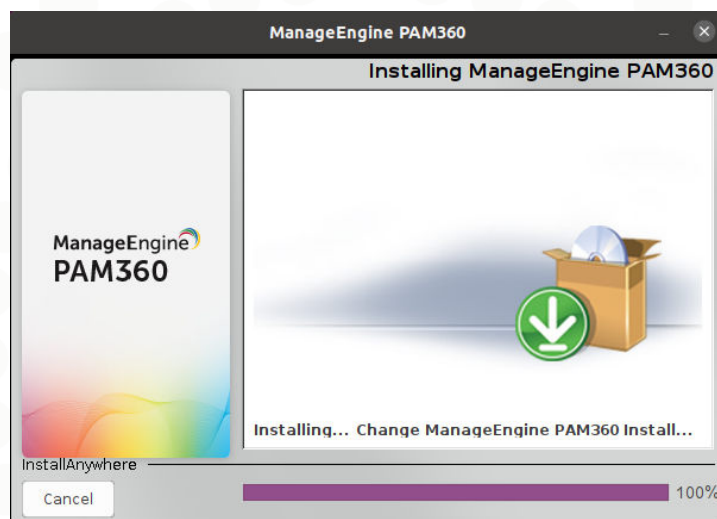
7. The **Server Configuration** panel appears. Here, select the option relevant to the server you are setting up. For example, select **Read-Only Server** to configure a Read-Only server.
 - i. **High Availability Primary Server** - The primary server will be your predominant server, which controls and manages PAM360's operations and services. It will always be fully functional, with all the features and functions provided by the PAM360 intact.
 - ii. **High Availability Secondary Server** - Select this option if you wish to install PAM360 in another instance - a secondary server. The secondary server will offer 'Read/Write' access to users (except password reset) whenever the primary server is down and until it is brought back to service. The changes made in the database in the intervening period will be automatically synchronized with the primary server upon connection restoration.
 - iii. **Read-Only Server** - Select this option to configure PAM360 in multiple instances in your system environment. The Read-Only server(s) acts like mirror server(s) and synchronizes all the actions carried out by the primary server. In case of a primary server failure, any Read-Only server can be configured as the primary server.



8. Now, the **Pre-Installation Summary** wizard appears that will require you to review your settings and begin the installation. Click **Previous** to make any changes or click **Install** to proceed with the installation.



9. Now, the **InstallAnywhere** wizard begins with the **PAM360** installation process.



10. Now, a wizard appears, indicating the completion of installation process. Click **Done** to complete the installation.



5.3.1 Installing PAM360 as a Startup Service

1. Login as a non-root user.
2. Open the console and navigate to the **<PAM360_Home>/bin** directory.
3. Execute **"sh pam360.sh install"** (In Ubuntu, execute as **"bash pam360.sh install"**).

6. Silent Install

Silent installation is a process that facilitates the installation of an application with zero interaction with the UI. This type of installation is helpful for applications with limited installation steps, where, before commencing, parameters, such as Name, Email-Id, Path, etc., are preset or manually entered.

Execute the commands as instructed below to install the application automatically.

6.1 Steps to Silent Install PAM360 in Windows Server

6.1.1 Primary Server

1. Download the file **ManageEngine_PAM360_64.bit.exe**.
2. [Download](#) the zip and extract the installation file **WindowsPrimaryNonMSP.iss**.
3. Open **WindowsPrimaryNonMSP.iss** file in Notepad and edit **Name, Mail ID** (mandatory), **Phone, Company, Country** (mandatory), and **save**.
4. Move **WindowsPrimaryNonMSP.iss** file to **C:\Windows**.
5. Open Command Prompt as administrator and navigate to the **ManageEngine_PAM360_64.bit.exe** file location.

6. Execute the command:

```
ManageEngine_PAM360_64bit.exe -a -s -f1"C:\Windows\WindowsPrimaryNonMSP.iss" -  
f2"C:\Windows\WindowsPrimaryNonMSP.log"
```

PAM360 will get installed, and the service will start automatically.

6.1.2 Secondary Server

1. Download the file **ManageEngine_PAM360_64.bit.exe**.
2. [Download](#) the zip and extract the installation file **WindowsSecondaryNonMSP.iss**.
3. Open **WindowsSecondaryNonMSP.iss** file in notepad and edit **Name**, **Mail ID** (mandatory), **Phone**, **Company**, **Country** (mandatory), and **Save**.
4. Move **WindowsSecondaryNonMSP.iss** file to **C:\Windows**.
5. Open Command Prompt as administrator and navigate to the **ManageEngine_PAM360_64.bit.exe** file location.
6. Execute the command:

```
ManageEngine_PAM360_64bit.exe -a -s -f1"C:\Windows\WindowsSecondaryNonMSP.iss" -  
f2"C:\Windows\WindowsSecondaryNonMSP.log"
```

PAM360 will get installed, and the service will start automatically.

6.1.3 Read-Only Server

1. Download the file **ManageEngine_PAM360_64.bit.exe**.
2. [Download](#) the zip and extract the installation file **WindowsRONonMSP.iss**.
3. Open **WindowsRONonMSP.iss** file in notepad and edit **Name**, **Mail ID** (mandatory), **Phone**, **Company**, **Country** (mandatory), and **Save**.
4. Move **WindowsRONonMSP.iss** file to **C:\Windows**.
5. Open Command Prompt as administrator and navigate to the **ManageEngine_PAM360_64.bit.exe** file location.
6. Execute the command:

```
ManageEngine_PAM360_64bit.exe -a -s -f1"C:\Windows\WindowsRONonMSP.iss" -  
f2"C:\Windows\WindowsRONonMSP.log"
```

PAM360 will get installed, and the service will start automatically.

6.2 Steps to Silent Install PAM360 in Linux Server

6.2.1 Primary Server

1. Download the file **ManageEngine_PAM360_64bit.bin** for Linux.
2. [Download](#) the zip and extract the installation file **LinuxPrimaryNonMSP.txt**.
3. Open **LinuxPrimaryNonMSP.txt** in notepad.
4. Mention the user installation directory's path (**USER_INSTALL_DIR**) and file overwrites (**fileOverwrite_**) path.
5. Save and move **LinuxPrimaryNonMSP.txt** to home directory.
6. Open the Console and navigate to **ManageEngine_PAM360_64bit.bin** file location
7. Execute the command:

```
chmod a+x ManageEngine_PAM360_64bit.bin
```

8. Execute the command:

```
./ManageEngine_PAM360_64bit.bin -i silent -f /home/LinuxPrimaryNonMSP.txt
```

PAM360 will get installed.

6.2.2 Secondary Server

1. Download the file **ManageEngine_PAM360_64bit.bin** for Linux.
2. [Download](#) the zip and extract the installation file **LinuxSecondaryNonMSP.txt**.
3. Open **LinuxSecondaryNonMSP.txt** in notepad.
4. Mention the user installation directory's path (**USER_INSTALL_DIR**) and file overwrite's (**fileOverwrite_**) path.
5. Save and move **LinuxSecondaryNonMSP.txt** to home directory.
6. Open the console and navigate to **ManageEngine_PAM360_64bit.bin** file location.
7. Execute the command:

```
chmod a+x ManageEngine_PAM360_64bit.bin
```

8. Execute the command:

```
./ManageEngine_PAM360_64bit.bin -i silent -f /home/LinuxSecondaryNonMSP.txt
```

PAM360 will get installed.

6.2.3 Read-Only Server

1. Download the file **ManageEngine_PAM360_64bit.bin** for Linux.
2. [Download](#) the zip and extract the installation file **LinuxRONonMSP.txt**.
3. Open **LinuxRONonMSP.txt** in notepad.
4. Mention the user installation directory's path (**USER_INSTALL_DIR**) and file overwrite's (**fileOverwrite_**) path.
5. Save and move **LinuxRONonMSP.txt** to home directory.
6. Open the console and navigate to **ManageEngine_PAM360_64bit.bin** file location.
7. Execute the command:

```
chmod a+x ManageEngine_PAM360_64bit.bin
```

8. Execute the command:

```
./ManageEngine_PAM360_64bit.bin -i silent -f /home/LinuxRONonMSP.txt
```

PAM360 will get installed.

7. Starting and Shutting Down PAM360

7.1 In Windows

Using the Start Menu	Using the Tray Icon
<ol style="list-style-type: none"> 1. Navigate to Start >> Run [OR] press Win+r. The Run box appears. Type services.msc and hit Enter. 2. Locate the PAM360 service 'ManageEngine PAM360' in the Services console. 3. You can start, stop or restart the service from the services console. 	<ol style="list-style-type: none"> 1. Once you have successfully installed PAM360 in your system, you will find the PAM360 icon in the windows tray area on the far right end of your task bar. 2. Right click the tray icon and click the desired operation: <ul style="list-style-type: none"> • Start the PAM360 Service • Stop the PAM360 Service • Launch the PAM360 web console

Using the Start Menu	Using the Tray Icon
	3. Startup Options - Automatic start ' Start PAM360 Web Console on Service Startup ' is recommended.

7.2 In Linux

Starting & Stopping the Server as a Service
<p>To Start PAM360 as a service in Linux:</p> <ol style="list-style-type: none"> 1. Login as non-root user. 2. Execute <code>/etc/rc.d/init.d/pam360-service start</code>. 3. PAM360 server runs in the background as service. <p>To Stop PAM360 Server started as a service, in Linux:</p> <p>Execute <code>/etc/rc.d/init.d/pam360-service stop</code>(as non-root user).</p> <p>(From build 7200 onwards)</p> <p>To Start PAM360 as a service in Linux:</p> <ol style="list-style-type: none"> 1. Login as non-root user. 2. Execute <code>systemctl start pam360.service</code>. 3. Execute <code>systemctl status pam360.service</code> to check the status of the service. <p>To Stop PAM360 Server started as a service, in Linux:</p> <p>Execute <code>systemctl stop pam360.service</code>.</p>

8. Launching the PAM360 Web Client

- For a newly configured setup, the default **User name/Password** is **admin/admin**. It is strongly recommended to change your login password after your initial login.
- Every time you start the server, PAM360 will be automatically launched in the browser.

There are different ways of connecting to the PAM360 web client:

8.1 Automatic Browser Launch

Once the server has started after the successful installation of PAM360, the **PAM360 Login screen** shows up in a browser window. As PAM360 uses **secured HTTPS** connection, you will be prompted to accept the **Security Certificate**. Hit **Yes**, type the **User name** and **Password** in the login screen and press **Enter**.

8.2 Launching the Web Client Manually

In Windows:

Right-click the **PAM360 tray icon** and click **PAM360 Web Console** to launch the web client manually. The PAM360 Login screen shows up in a browser window. As PAM360 uses the **secured HTTPS** connection, you will be prompted to accept the **Security Certificate**. Hit **Yes**, type the **User name** and **Password** in the login screen and press **Enter**.

In Linux:

Open a browser and connect to the URL specified below:

https://<hostname>:portnumber/

where,

<hostname> - the host where the PAM360 server is running.

<portnumber> - the default port is **8282**.

Example: **https://demo-server:8282**

8.3 Connecting the Web Client in Remote Hosts

If you want to connect to the PAM360 web client in a remote machine (different from the one where PAM360 is running), open a browser and connect to the below URL:

https://<hostname>:port

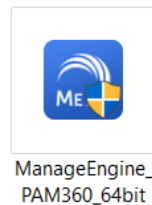
As PAM360 uses the secured HTTPS connection, you will be prompted to accept the Security

Certificate. Hit **Yes**, type the **Username** and **Password** in the login screen and press **Enter**.

9. Uninstalling PAM360

9.1 Steps to Uninstall PAM360 in Windows

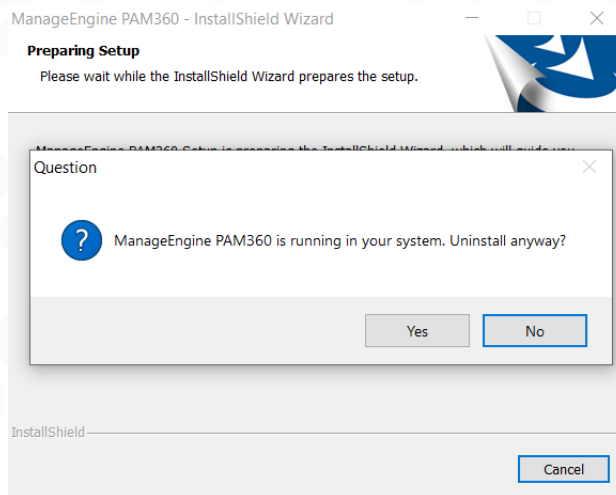
1. To Uninstall PAM360, double click the **ManageEngine_PAM360.exe** icon.



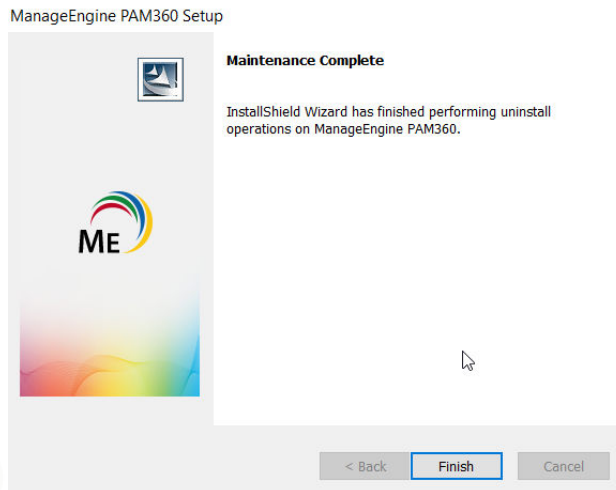
(OR)

Navigate to **Control Panel\Programs\Programs and Features**, select **Manage Engine PAM360** and click **Uninstall** on the top bar.

2. The **InstallShield Wizard** for PAM360 appears on the screen. Click **Yes** to continue to Uninstall.



3. Now, click **Finish** to complete the uninstallation process.



PAM360 has been successfully uninstalled from your machine.

9.2 Steps to Uninstall PAM360 in Linux

1. To uninstall PAM360 in Linux, login as root user and navigate to **<PAM360_Home>/bin**.
2. Execute the following command:

```
sh pam360.sh remove (In Ubuntu, execute as "sh/bash pam360.sh remove")
```

PAM360 has been successfully uninstalled from your machine.

10. Best Practices Post-Installation

10.1 Changing the Administrator Login Password

By default, the username and the password of the PAM360 account will be **'admin'**. It is strongly recommended to change the PAM360 login password during the initial login after the PAM360 installation. To do this, navigate to **Admin >> Settings >> Change PAM360 Login Password** and do the steps that follow:

1. Enter the **Old Password**.
2. Enter the **New Password**. You can also use the built-in password generator to generate passwords accordingly.
3. Re-enter the new password to confirm the password.
4. Browse and select the **User Certificate** for smartcard/PKI/Certificate authentication.

5. Click **Save** to change the old password.

Notes:

- The new password will not be emailed, so you need to remember your new password.
- If you have configured the mail server settings and forgot your password, use the '**Forgot password**' link available on the login page of PAM360 to reset your password.
- If you have forgotten your new password with an unconfigured mail server setting, contact our support team for further assistance.

10.2 Managing the PAM360 Encryption Key

PAM360 uses **AES-256** encryption to secure passwords and other sensitive information in the database. The key used for encryption is auto-generated and is unique for every installation. By default, this encryption key is stored in a file named **pam360_key.key** under the **<PAM360 installation directory>/conf** folder. For production instances, PAM360 does not allow the encryption key to be stored within its installation folder. This is to ensure that the encryption key and the encrypted data, in both live and backed-up databases, do not reside together.

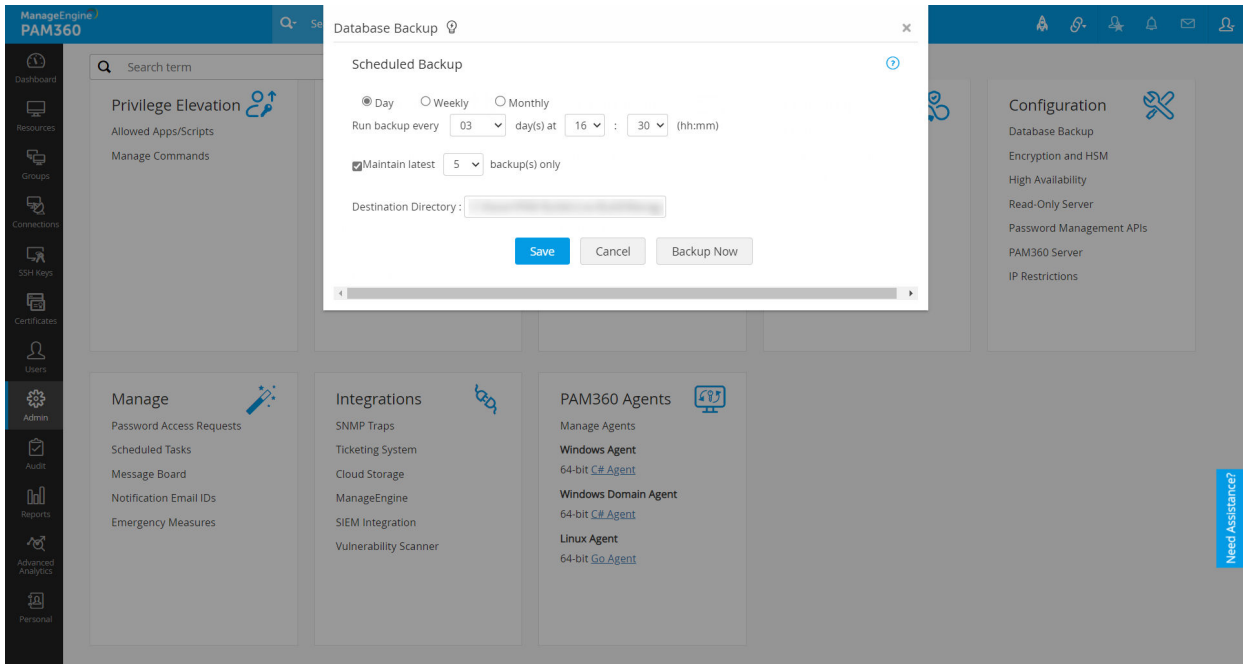
PAM360 will store the location of the **pam360_key.key** in a configuration file named **manage_key.conf**, present under the **<PAM360 installation directory>/conf** folder. We strongly recommend that you move and store this encryption key outside the machine where PAM360 is installed, in another machine or an external drive. Once you have moved the encryption key, update the **manage_key.conf** file with the new key's directory path. The path can be a mapped network drive or an external USB (hard drive/thumb drive) device.

PAM360 requires the **<PAM360 installation directory>PAM360\conf** path to be accessible with the necessary permissions to read the **pam360_key.key** file when it starts up every time. After a successful start-up, it does not need access to the file anymore, and the device with the file can go offline.

10.3 Configuring Database Backup

Using the default bundle database as your backend database, we recommend configuring the database backup feature. To configure the database backup schedule, do the steps that follow:

1. Navigate to **Admin >> Configurations >> Database Backup**.
2. Select the backup field data as per your requirement and convenience and click **Save**.



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