
DeskPRO On-Premise Sysadmin Documentation

Release 1.0

DeskPRO

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REQUIREMENTS

If you want to get started quickly with DeskPRO On-Premise, without worrying about requirements, we have created preconfigured virtual machine images for VirtualBox or VMWare. This is the quickest way to get an On-Premise helpdesk up and running.

See *Run from a VM* for details.

1.1 Hardware requirements

DeskPRO runs well on modest hardware, and can handle typical helpdesk loads when run from a virtual machine, or even a virtual hosting account.

At least 2GB of RAM is recommended.

If you are expecting a very busy helpdesk, the limiting factor for speed is generally the database, which can be helped by increasing the amount of RAM, using fast disks for storage (SSD), and installing Elasticsearch.

You can run all the required software on a single machine, but you may wish to have separate servers for the database and web server.

See the section on *Performance & scaling* for more information.

1.2 Software Requirements

DeskPRO's base requirements allow it to run on most servers that run PHP software:

- PHP 7.0 is strongly recommended and will soon become required.
- Access to the command line version of PHP (often called php or php-cli on Linux or php-win.exe on Windows (usually installed by default; may not be available with some hosting services)
- **Any web server that works with PHP (Apache with php5-fpm, IIS and nginx are all supported).**
- We do not recommend using mod_php with Apache2 on Windows - Thread Safe PHP is not reliable. Instead use NTS PHP FastCGI using mod_fcgid; or use IIS.
- MySQL version 5.0 or newer (latest version recommended)
- The web server must have write-access to some specific DeskPRO directories: `backups/`, `attachments/`, `var/`*
- You should be able to run a cron job (or Windows Scheduled Task) once per minute (this may not be possible with some hosting services)

DeskPRO also requires certain PHP extensions to be installed. All of these extensions are enabled by default in common PHP installations. The installation wizard will warn you if a required extension is missing.

- icon
- json
- session
- ctype
- tokenizer
- SimpleXML
- pcre
- mbstring
- zlib
- xml
- filter
- pdo and pdo_mysql
- gd

Checking Requirements

The easiest way to verify you meet DeskPRO requirements is to download DeskPRO from <https://www.deskpro.com/downloads/deskpro.zip> and then run the command-line checker:

```
/path/to/php /path/to/deskpro/bin/check_requirements
```

1.2.1 Hardware requirements

DeskPRO runs well on modest hardware, and can handle typical helpdesk loads when run from a virtual machine, or even a virtual hosting account.

At least 1GB of RAM is recommended.

If you are expecting a very busy helpdesk, the limiting factor for speed is generally the database, which can be helped by increasing the amount of RAM, using fast disks for storage, and installing Elasticsearch.

You can run all the required software on a single machine, but you may wish to have separate servers for the database and web server.

See the section on *Performance & scaling* for more information.

RUN FROM A VM

To make it easy to get started with DeskPRO On-Premise, we have created ready-made virtual machine images which contain DeskPRO pre-installed on Ubuntu Linux.

You can use these to set up a working On-Premise helpdesk in two minutes, with no fiddly configuration, and sign up for a free 14-day trial (no credit card required).

You can find the images on the [On-Premise downloads page](#).

We provide images for both [VMware](#) and [VirtualBox](#) virtualization software.

2.1 Running the VMware image

This section explains how to run DeskPRO from our [VMware virtual machine image](#).

You will need a suitable [VMware product](#) installed: we have tested the image in VMWare Player on Windows and VMWare Fusion Pro on Mac.

Note: You may need to convert the image into OVF format before importing into some VMWare products. Please consult VMWare's documentation for your product for details.

1. Download the [VMware image](#) and unzip it.
2. In the folder where you unzipped the image, click on **DeskPRO- Helpdesk.vmx** to start the VM. (If you are prompted to install VMware tools or upgrade the virtual machine, cancel.) Don't worry about any messages that scroll by while it boots up.
3. When prompted, enter a password for the Linux root user. It's important that you remember this.



Re-enter the password to confirm, highlight **Set password** , and press Enter.

4. The VM will now display a welcome screen showing the IP address where you can access DeskPRO in your browser.



5. Go to the IP address and follow the instructions to create your DeskPRO admin account and register for your free trial.

If the VMware window turns black, you can press any key to see the welcome screen again.

2.2 Running the VirtualBox image

This section explains how to run DeskPRO from our [VirtualBox virtual machine image](#).

You will need a recent version of [VirtualBox](#) installed. We have tested the image on VirtualBox 4.3 and 5.0.

1. Download the [VirtualBox image](#).
2. Click on the **DeskPRO-Helpdesk-VirtualBox.ova** file.
3. Click **Import**.
4. Make sure that the new DeskPRO-Helpdesk image is selected, then click Settings.
5. If there are warnings about any invalid settings, fix them. For example, you may be prompted to increase the amount of video memory allocated in the Display section.
6. Under Network, ensure that the Network Adapter type is set to **Bridged Adapter**.
7. Start the VM. Don't worry about any messages that scroll by while it boots up.
8. When prompted, enter a password for the Linux root user. It's important that you remember this password.



Re-enter the password to confirm, highlight Set password, and press Enter.

9. The VM will now display a welcome screen showing the IP address where you can access DeskPRO in your browser.



10. Go to the IP address and follow the instructions to create your DeskPRO admin account and register for your free trial.

If the VM screen goes black, you can press any key to get back to the welcome screen.

2.3 VM configuration details

The virtual machine images are specially designed to work with a minimum of configuration.

If you are using an image in production or want to try out advanced features, it can be useful to know these technical details. Note that these details are the same for both VMWare and VirtualBox images.

2.3.1 Using the VM command line

You will occasionally need to access the command line in the VM (for example, to perform software updates).

You can log in to the server command line by selecting the **Login to server** option from the menu. The username is `root` and the password is whatever you specified when you were first setting up the VM.

Note that you are logging in with the Linux root account, which is completely separate from your DeskPRO admin account.

2.3.2 VM configuration details

The image uses Ubuntu Linux 14.04, php 7.0 and the nginx webserver.

Elasticsearch (required for full-text search) is installed and running.

DeskPRO uses a MySQL database. The MySQL password is randomised when you first run the image; you can find out what it is by looking at `config.php` in the install folder.

The folder where DeskPRO is installed is:

`/usr/share/nginx/html/deskpro`

The path to PHP is:

`usr/bin/php`

On Linux, DeskPRO uses a cron job to run scheduled tasks (like checking for new emails). The file used to configure the cron job is:

`/etc/cron.d/deskpro`

You should not need to edit this file.

The default cron job is

```
* * * * * deskpro /usr/bin/php /usr/share/nginx/html/deskpro/cron.php
```

which simply runs the `cron.php` file in the DeskPRO install directory once per minute.

2.3.3 VM networking options

The **Advanced** menu option enables you to access the **Networking** menu to change networking settings for the VM. By default, the VM will try to connect to your network using DHCP.

If you want to assign a static IP address (recommended for production use), select the Static IP option. Remember to go to **Admin > Setup > Settings** and change the Helpdesk URL to include the new IP.

Note that with VirtualBox, you must always run the VM with the **Bridged Adapter** network setting (in **Settings > Network** in the VirtualBox interface).

INSTALL ON UBUNTU LINUX

This section describes how to install DeskPRO on Ubuntu/Apache from scratch.

Installing and maintaining DeskPRO On-Premise on Linux requires basic server administration skills. We offer a DeskPRO On-Premise [installation service](#).

DeskPRO does not require a large investment in hardware and will run well on a standard virtual machine; almost any physical dedicated server will run DeskPRO.

If you are expecting to have a very busy helpdesk with a large number of agents, the limiting performance factor will generally be the database. Performance can be improved by increasing available RAM, and using fast disks for storage.

You can run all of DeskPRO on a single server, or run the database and webserver on separate machines.

3.1 Automated Deployment

The quickest way to install DeskPRO on a clean Ubuntu installation is using our automated install script.

Note: If you are installing on a server that has already been configured to host other software apart from DeskPRO, do not use this script. Use the manual install instructions for your platform.

The script will work on a clean installation of:

- Ubuntu 14.04
- Ubuntu 16.04

The machine you run it on must be connected to the Internet.

Run this from the command-line to start the automated install:

```
wget -q -O - https://www.deskpro.com/go/install.sh | sudo bash
```

3.2 Manual installation

Run these commands to install PHP 5, MySQL, Apache, and some utilities.

```
apt-get update  
apt-get -y install wget unzip mlocate  
apt-get -y install apache2
```

```
apt-get install -y php5 php5-gd php5-mysql php5-curl php5-cli php5-cgi
php5-dev php5-ldap php5-gd php5-json php-apc libapache2-mod-php5

apt-get install mysql-server mysql-client
```

You will be asked to set a root password for MySQL. Remember this password.

If you are using a version of PHP before 5.5, you should also run:

```
apt-get install php5-apc
```

to install the APC opcode cache.

If you plan to use an IMAP email account with DeskPRO, install and enable the PHP IMAP extension:

```
apt-get install php5-imap
php5enmod imap
```

3.2.1 Update Apache config

Run `a2enmod rewrite`

Edit the `default.conf` or `000-default.conf` file in `/etc/apache2/sites-available/`.

In this file, search and replace `/var/www/html` with `/var/www/deskpro/www`

- If there is a section like this:

```
<Directory ...>
...
</Directory>
```

change `AllowOverride None` to `AllowOverride All`.

If the file has no `<Directory ...>` section, add:

```
<Directory /var/www/deskpro/www>
  AllowOverride All
</Directory>
```

below the line `DocumentRoot`.

Restart Apache:

```
service apache2 restart
```

3.2.2 Install DeskPRO

1. Download the latest version of DeskPRO:

```
mkdir -p /var/www/deskpro
wget http://www.deskpro.com/downloads/deskpro.zip -O /var/www/deskpro/deskpro.zip
cd /var/www/deskpro
```

2. Extract the zipped DeskPRO files:

```
unzip deskpro.zip rm deskpro.zip
```

3. Run the installer:

```
bin/install
```

3.2.3 Set up cron job

Set a cron job to run your PHP CLI executable using the cron.php file in the install folder as an argument:

```
echo "* * * * * root /usr/bin/php /var/www/deskpro/bin/cron.php" >> /etc/crontab
```

This makes the cron job run once per minute to carry out tasks like processing email.

3.2.4 Complete installation

Your DeskPRO helpdesk is now installed. You should open DeskPRO in your web browser at the relevant URL (or IP address) for the server and follow the final steps.

For production use, you should change ownership of the installed files so they are owned by the web server user or by a dedicated DeskPRO user account:

e.g. `chown -R www-data /var/www/deskpro`

You should also have DeskPRO access the database through a MySQL user with more limited privileges than the root user.

After installation, you will have a MySQL client installed on your system. Type:

```
mysql --user=root --password=rootpass deskpro
```

(replacing “rootpass” with the password for the MySQL root user you chose during installation; “deskpro” should be replaced with the name of your DeskPRO database if you are using another name).

Execute the following MySQL commands:

```
CREATE USER 'deskpro_user'@'localhost' IDENTIFIED BY 'password1';
```

(replacing “password1” with a more complex password of your choice).

```
GRANT ALL PRIVILEGES ON deskpro.* TO 'deskpro_user'@'localhost';
```

(this assumes the default database name ‘deskpro’ is being used: if you have changed the DeskPRO database, you should replace ‘deskpro’ in the `deskpro.*` part above with whatever name you used).

```
FLUSH PRIVILEGES;
```

Now edit `config/config.database.php` to reference the new MySQL user.

3.2.5 Install Elasticsearch

You should now install Elasticsearch to greatly improve the search features of your helpdesk. This is optional, but strongly recommended.

Note: Without Elasticsearch, DeskPRO search will still function, but searching will only match certain helpdesk content (e.g ticket titles instead of the full text of a ticket) and it will be slower.

For best performance, you should run Elasticsearch on a local server (the same server where you installed DeskPRO, or one on the same network). You can also use a third-party hosted Elasticsearch service - see [Using hosted Elasticsearch from Found](#) for an example of how to set this up.

Warning: You must install the stable 2.x version of Elasticsearch to use with DeskPRO. Elasticsearch 1.x or 5.x is not supported.

To install Elasticsearch on the same server and connect it to your helpdesk:

1. Install Oracle Java if you don't have it already. (The alternative OpenJDK Java runtime is not recommended for production use.)

```
sudo add-apt-repository ppa:webupd8team/java sudo apt-get install
oracle-java7-installer
```

2. Accept the Oracle binary license and check that Java is working by running:

```
java -version
```

3. Download the latest 1.x [Elasticsearch DEB package](#), for example:

```
wget https://download.elastic.co/elasticsearch/release/org/elasticsearch/distribution/
```

4. Install the package you downloaded:

```
dpkg -i elasticsearch-2.3.5.deb
```

(using the filename of the DEB file you downloaded)

5. Locate the `elasticsearch.yml` config file in `/etc/elasticsearch` and edit it.

Search for the line that mentions “`network.bind_host`”, delete any leading # and make sure it says:

```
network.bind_host: localhost
```

Then add:

```
script.disable_dynamic: true
```

6. Restart Elasticsearch

```
sudo service elasticsearch restart
```

7. You should see a series of messages as the Elasticsearch node starts.

8. To check that Elasticsearch is running correctly, run:

```
curl -X GET http://localhost:9200/
```

You should get output similar to this:

```
{
  "status" : 200,
  "name" : "Agon",
  "version" : {
    "number" : "1.3.2",
```

```
"build_hash" : "dee17544e2f254f3f269435345d7591939aaefd12f",
"build_timestamp" : "2014-08-13T14:29:30Z",
"build_snapshot" : false,
"lucene_version" : "4.9"
},
"tagline" : "You Know, for Search"
}
```

9. In the DeskPRO admin interface, go to **Server > Elasticsearch**, check **Enable Elasticsearch** and enter the URL of the service (e.g. `http://localhost` if it is running on the same server).

Warning: Depending on the Elasticsearch configuration, you may need to specify the port to connect to as well, e.g. `http://my-es-host:80/` or `https://my-es-host:443/`.

10. Click **Test Settings** to check that your DeskPRO installation can connect to Elasticsearch, then **Save Settings**.

For production use, we recommend that you consult the Elasticsearch documentation for more information about [configuration](#) and [running Elasticsearch as a service on Linux](#).

Note: If the Elasticsearch service stops or crashes, DeskPRO will revert to using the more limited, default search system.

3.2.6 Troubleshooting

You should be able to troubleshoot most installation problems by following the installation wizard's instructions.

If you run into another problem, browse or search [the installation section of the DeskPRO Knowledgebase](#).

These articles cover the most common problems that can prevent you getting to the installation wizard stage:

[Invalid php.ini directive error](#)

[“Existing tables were detected in your database” error](#)

[Data directory is not writable on Linux](#)

[Finding the path to PHP](#)

INSTALL ON CENTOS/RED HAT

This section describes how to install DeskPRO on CentOS or Red Hat 7 using the Apache web server from scratch.

Installing and maintaining DeskPRO On-Premise on Linux requires basic server administration skills. We offer a DeskPRO On-Premise [installation service](#).

DeskPRO does not require a large investment in hardware and will run well on a standard virtual machine; almost any physical dedicated server will run DeskPRO.

If you are expecting to have a very busy helpdesk with a large number of agents, the limiting performance factor will generally be the database. Performance can be improved by increasing available RAM, and using fast disks for storage.

You can run all of DeskPRO on a single server, or run the database and webserver on separate machines.

4.1 Automated Deployment

The quickest way to install DeskPRO on a clean CentOS installation is using our automated install script.

Note: If you are installing on a server that has already been configured to host other software apart from DeskPRO, do not use this script. Use the manual install instructions for your platform.

The script is known to work on a clean installation of:

- CentOS 7

The machine you run it on must be connected to the Internet.

Run this from the command-line to start the automated install:

```
curl -s -L https://www.deskpro.com/go/install.sh | sudo bash
```

4.2 Manual installation

1. Run these commands to install PHP 5, mariadb, Apache, and some utilities.

```
yum -y install wget unzip  
  
yum -y install httpd  
  
yum -y install php php-mysql php-gd php-cli php-ldap php-pdo php-common  
php-imagick php-mbstring php-xml php5-curl
```



```
yum -y install mariadb-server mariadb
```

Note: mariadb is a drop-in MySQL replacement used in newer versions of CentOS/Redhat. Apart from the installation/setup commands, it works the same way as MySQL for the purposes of using DeskPRO.

If you are using a version of PHP before 5.5, also run `yum -y install php-pecl-apc` to install APC cache.

2. Set up database:

```
systemctl start mariadb /usr/bin/mysql_secure_installation
```

You will be asked for the database password; just press Enter, since no password is set yet.

Set a root password for MySQL and remember this password. For the rest of the install steps, enter y (for Yes).

Ensure that the mySQL service starts on reboot using:

```
systemctl enable mariadb
```

4.2.1 Update Apache config

Edit the `/etc/httpd/conf/httpd.conf` file.

Search and replace in this file:

- `/var/www/html` to `/var/www/deskpro/www`
- Fine the `<Directory` block and change `AllowOverride None` to `AllowOverride All`

Note that there are other `AllowOverride` statements in different parts of the file. You must make sure to edit the right statement.

Make sure Apache starts:

```
systemctl start apache systemctl enable apache
```

4.2.2 Install DeskPRO

1. Download the latest version of DeskPRO:

```
mkdir -p /var/www/deskpro
wget http://www.deskpro.com/downloads/deskpro.zip -O /var/www/deskpro`
```

2. Extract the DeskPRO files from the ZIP:

```
cd /var/www/deskpro
unzip deskpro.zip
```

3. Delete the ZIP file:

```
rm deskpro.zip
```

4. Run the installer from the command-line:

bin/install

4.2.3 Set up cron job

Set a cron job to run your PHP CLI executable using the cron.php file in the install folder as an argument:

```
sed -i "* * * * * root /usr/bin/php /var/www/deskpro/bin/cron"
/etc/crontab
```

This makes the cron job run once per minute to carry out tasks like processing email.

4.2.4 Complete final steps

Your DeskPRO helpdesk is now installed. You should open DeskPRO in your web browser to the URL/IP address of the server and follow the final steps.

For production use, you should change ownership of the installed files so they are owned by the web server user or by a dedicated DeskPRO user account:

e.g. `chown -R apache /var/www/deskpro`

You should also create a non-root MySQL user to access the database.

After installation, you will have a MySQL client installed on your system. Type:

```
mysql --user=root --password=rootpass deskpro
```

(replacing “rootpass” with the password for the MySQL root user you chose during installation; “deskpro” should be replaced with the name of your DeskPRO database if you are using another name).

Execute the following MySQL commands:

```
CREATE USER 'deskpro_user'@'localhost' IDENTIFIED BY 'password1';
```

(replacing “password1” with a more complex password of your choice).

```
GRANT ALL PRIVILEGES ON deskpro.* TO 'deskpro_user'@'localhost';
```

(this assumes the default database name ‘deskpro’ is being used: if you have changed the DeskPRO database, you should replace ‘deskpro’ in the `deskpro.*` part above with whatever name you used).

```
FLUSH PRIVILEGES;
```

Now edit these lines of `config/config.database.php` so that DeskPRO is accessing the database with the new MySQL user.

```
// The database username define('DP_DATABASE_USER', '');
// The password for the database user define('DP_DATABASE_PASSWORD',
'');
```

4.2.5 Install Elasticsearch

You should now install Elasticsearch to greatly improve the search features of your helpdesk. This is optional, but strongly recommended.

Note: Without Elasticsearch, DeskPRO search will still function, but searching will only match certain helpdesk content (e.g ticket titles instead of the full text of a ticket) and it will be slower.

For best performance, you should run Elasticsearch on a local server (the same server where you installed DeskPRO, or one on the same network). You can also use a third-party hosted Elasticsearch service - see [Using hosted Elasticsearch from Found](#) for an example of how to set this up.

Warning: You must install the stable 2.x version of Elasticsearch to use with DeskPRO. Elasticsearch 1.x or 5.x is not supported.

To install Elasticsearch on the same server and connect it to your helpdesk:

1. Install Oracle Java if you don't have it already. (The alternative OpenJDK Java runtime is not recommended for production use.)

Download the Linux RPM from [Oracle](#)

Install with

```
sudo rpm -Uvh jre-8u51-linux-x64.rpm
```

(using the filename of the RPM you downloaded)

2. Accept the Oracle binary license and check that Java is working by running:

```
java -version
```

3. Download the latest 1.x [Elasticsearch RPM package](#), for example:

```
wget https://download.elastic.co/elasticsearch/release/org/elasticsearch/distribution/
```

4. Install Elasticsearch with:

```
sudo rpm -Uvh elasticsearch-2.3.5.rpm
```

(using the filename of the RPM you downloaded)

5. Locate the `elasticsearch.yml` config file in `/etc/elasticsearch` and edit it.

Search for the line that mentions “`network.bind_host`”, delete any leading # and make sure it says:

```
network.bind_host: localhost
```

Then add:

```
script.disable_dynamic: true
```

6. Set Elasticsearch to start on server boot:

```
sudo systemctl enable elasticsearch
```

then start it with:

```
sudo systemctl start elasticsearch
```

7. To check that Elasticsearch is running correctly, run:

```
curl -X GET http://localhost:9200/
```

You should get output similar to this:

```
{
  "status" : 200,
  "name" : "Agon",
  "version" : {
    "number" : "1.3.2",
    "build_hash" : "dee17544e2f254f3f269435345d7591939aaefd12f",
    "build_timestamp" : "2014-08-13T14:29:30Z",
    "build_snapshot" : false,
    "lucene_version" : "4.9"
  },
  "tagline" : "You Know, for Search"
}
```

6. In the DeskPRO admin interface, go to **Server > Elasticsearch**, check **Enable Elasticsearch** and enter the URL of the service (e.g. `http://localhost` if it is running on the same server).

Warning: Depending on the Elasticsearch configuration, you may need to specify the port to connect to as well, e.g. `http://my-es-host:80/` or `https://my-es-host:443/`.

7. Click **Test Settings** to check that your DeskPRO installation can connect to Elasticsearch, then **Save Settings**.

For production use, we recommend that you consult the Elasticsearch documentation for more information about [configuration](#) and [running Elasticsearch as a service on Linux](#).

Note: If the Elasticsearch service stops or crashes, DeskPRO will revert to using the more limited, default search system.

4.2.6 Troubleshooting

You should be able to troubleshoot most installation problems by following the installation wizard's instructions.

If you run into another problem, browse or search [the installation section of the DeskPRO Knowledgebase](#).

These articles cover the most common problems that can prevent you getting to the installation wizard stage:

[Invalid php.ini directive error](#)

[“Existing tables were detected in your database” error](#)

[Data directory is not writable on Linux](#)

[Finding the path to PHP](#)

WINDOWS SERVER 2008

Installing and maintaining DeskPRO On-Premise requires basic server administration skills. If your organization does not have someone with the correct skills, we suggest you use [DeskPRO Cloud](#), our hosted service.

We also offer a DeskPRO On-Premise [installation service](#).

If you run into an installation issue that is not covered in this manual, search the [DeskPRO Knowledgebase](#) for troubleshooting help.

This section describes how to install DeskPRO on Windows Server 2008.

We recommend using the Automated DeskPRO Installer which will download and install all of the necessary components for you so you have a fully functional helpdesk within minutes.

5.1 Windows Installer

The Automatic Windows Installer is the preferred way to download and install DeskPRO on your Windows server or PC.

The installer will install and configure all of the necessary components required by DeskPRO including a web server, PHP, MySQL, Elasticsearch and Redis.

You can use this to configure a production helpdesk but it works equally well for testing or demoing purposes when used on any standard Windows PC.

1. Download the DeskPRO installer from <https://www.deskpro.com/deskpro-win.zip>
2. Extract the ZIP and then double-click `deskpro-win.exe` to launch the installer.
3. Follow the on-screen instructions.
4. In a couple of minutes, you will have a fully functional DeskPRO installation.

5.2 Manually Install using IIS 7

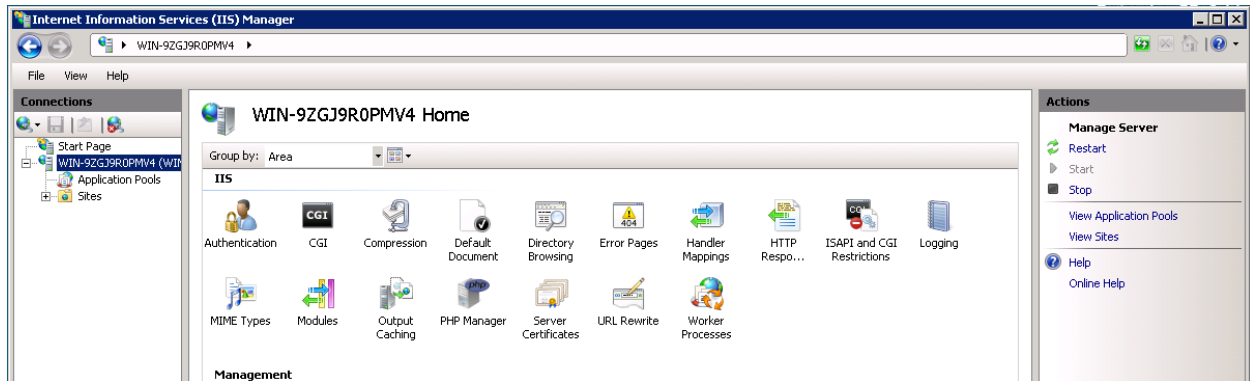
1. In Server Manager, go to **Roles** and click **Add Roles**.
 - Select **Web Server (IIS)** and under **Application Development**, select **CGI**.
 - Agree to installing any requirements.
2. Install the Microsoft Web Platform Installer from the Microsoft website.

Using the WPI, install:

- PHP (v 7.x recommended; make sure you get an x86, non-thread safe version)

- URL Rewrite 2.0
- These should install automatically; if not, install them too:
 - IIS 7.0 Fast CGI
 - PHP Manager for IIS

3. Open IIS Manager (under **Administrative tools** in the Start menu).



Open the PHP Manager panel, fix any configuration issues that PHP Manager flags up, and click **Check phpinfo()** to display information about the installation.

Note: If you have problems with steps 2 and 3, you can [install PHP manually](#).

4. Install the latest MySQL server; an easy way to do this is using [MySQL Installer](#), select **Server Only** (despite the name, this also installs the command line client) and set the configuration type as **Server Machine**.

During the install, you will be prompted to create a root MySQL password; remember this.

You will also be able to set the MySQL server so that it runs as a service and starts automatically.

5.2.1 Install DeskPRO

1. Download the latest version of DeskPRO On-Premise from <https://www.deskpro.com/downloads/deskpro.zip>.
2. Create a directory `C:\deskpro`
3. Unzip the contents of the `deskpro.zip` file into `C:\deskpro`.
4. Create a Site with the physical path being `C:\deskpro\www`.

Or you can edit the Default Web Site by right clicking it in the left navigation pane, and then select `Manage Website > Advanced Settings`.

From the Advanced Settings window, edit the Physical Path to be `C:\deskpro\www`

5. Set up a Scheduled Task to run `php-win.exe` with `C:\deskpro\bin\cron` as an argument once per minute.

To do this, open Task Scheduler and under the “Actions” section on the right, select `Create Task`. Use the following details:

- Name: DeskPRO Task
- Security Options: * Select the user who owns the files (e.g. your currently logged-in user) * Select “Run whether user is logged on or not”

- Go to the Triggers tab and click “New” * Select “Daily” * Under Advanced, input “Repeat task every every 1 minute indefinitely”
- Go to the Actions tab and click “New” * Action: Start a program * Program: Click Browse and locate `php-win.exe` (typically `C:\Program Files (x86)\PHP<version>\php-win.exe`). * Arguments: `bin\cron` * Start In: `C:\deskpro`

See also: [Manually creating a Windows Scheduled Task](#).

6. Install DeskPRO by opening the command prompt and running the special install command:

```
cd C:\deskpro
"C:\path\to\php-win.exe" bin\install
```

You will need to use the same path to PHP that you used while configuring the scheduled task. For example:

```
cd C:\deskpro "C:\Program Files (x86)\PHPv7.0\php-win.exe" bin\install
```

7. In your browser, go to <http://localhost> (or wherever IIS is serving the DeskPRO site), and follow the final steps.

If you get a warning that HTTP methods are being blocked by your server, go to the IIS Manager Handler Mappings panel, edit the settings for php files, click **Request Restrictions** and select **All verbs** ([more details here](#)).

5.2.2 Final steps

For production, you should have DeskPRO access the database through a MySQL user with more limited privileges than the root user. On Windows systems, you will have a shortcut to the command line MySQL client where you can do this.

Log in as the root MySQL user and run the following MySQL commands:

```
CREATE USER 'deskpro_user'@'127.0.0.1' IDENTIFIED BY 'password1';
```

(replacing “password1” with a more complex password of your choice).

```
GRANT ALL PRIVILEGES ON deskpro.* TO 'deskpro_user'@'127.0.0.1';
```

(this assumes the default database name ‘deskpro’ is being used: if you have changed the DeskPRO database, you should replace ‘deskpro’ in the `deskpro.*` part above with whatever name you used).

```
FLUSH PRIVILEGES;
```

Now edit `config/config.database.php` to use the new MySQL user.

We recommend that you now install Elasticsearch to enable greatly improved search capabilities for agents and users.

5.2.3 Troubleshooting

You should be able to troubleshoot most installation problems by following the installation wizard’s instructions.

If you run into another problem, browse or search [the installation section of the DeskPRO Knowledgebase](#).

These articles cover the most common problems that can prevent you getting to the installation wizard stage:

“The FastCGI process exited unexpectedly” error

“The program can’t start because MSCVR110.dll is missing” error

Invalid php.ini directive error

Can’t change invalid upload_tmp_dir value

“Existing tables were detected in your database” error

Configuring HTTP verbs on IIS

Data directory is not writable

5.2.4 Installing Elasticsearch on Windows

You can install Elasticsearch to greatly improve the search features of your helpdesk. This is optional, but strongly recommended.

Note: Without Elasticsearch, DeskPRO search will still function, but searching will only match certain helpdesk content (e.g ticket titles instead of the full text of a ticket) and it will be slower.

For best performance, you should run Elasticsearch on a local server (the same server where you installed DeskPRO, or one on the same network). You can also use a third-party hosted Elasticsearch service - see [Using hosted Elasticsearch from Found](#) for an example of how to set this up.

Warning: You must install the stable 2.x version of Elasticsearch to use with DeskPRO. Elasticsearch 1.x or 5.x is not supported.

To install Elasticsearch locally and connect it to your helpdesk:

1. For best performance, you should install [Java Server JRE](#).
2. Accept the license agreement and download the Server JRE tar.gz package.
3. Extract the package to a folder in Program Files. If you do not have suitable software to uncompress tar.gz files, we suggest [7-zip](#). Note that after you extract the package once, you will get a tar file without an extension which you then have to uncompress a second time.
4. Set the JAVA_HOME environment variable.

Go to **Control Panel > System > Advanced system settings** and find the **Environment variables** settings. The exact location may vary depending on the version of Windows.

Click **Environment variables** and set JAVA_HOME to be the full path to /jre folder you extracted in step 3, e.g.

```
C : \Program Files (x86)\Java\server-jre-8u20-windows-x64\jdk1.8.0_20\jre
```

5. Download the ZIP version of Elasticsearch 2.x from [the Download section of elastic.co](#) and extract the files to a directory.
6. In the resulting /config subdirectory, edit elasticsearch.yml to restrict access to your Elasticsearch node. Search for the line that mentions “network.bind_host”, delete the leading # and change it to:

```
network.bind_host: 127.0.0.1
```

(This assumes you are running Elasticsearch on the same server as DeskPRO. If not, consult [the Elasticsearch documentation about network settings](#)).

7. From the command prompt, go to the resulting folder and run:

```
service install then service start
```


8. You should see confirmation that the service has been installed and started.
9. To check that Elasticsearch is running correctly, go to <http://localhost:9200/> in your browser. Depending on the browser you're using you will either see output like this, or be prompted to download a JSON file with similar content:

```
{
  "status" : 200,
  "name" : "Agon",
  "version" : {
    "number" : "1.3.2",
    "build_hash" : "dee17544e2f254f3f269435345d7591939aaefd12f",
    "build_timestamp" : "2014-08-13T14:29:30Z",
    "build_snapshot" : false,
    "lucene_version" : "4.9"
  },
  "tagline" : "You Know, for Search"
}
```

10. In the DeskPro admin interface, go to **Server > Elasticsearch**, check **Enable Elasticsearch** and enter the URL of the service (e.g. <http://localhost> if it is running on the same server).

Warning: Depending on the Elasticsearch configuration, you may need to specify the port to connect to as well, e.g. <http://my-es-host:80/> or <https://my-es-host:443/>.

Note: If the Elasticsearch section of the admin interface doesn't load, see [Elasticsearch configuration page not loading in admin](#) on our Knowledgebase.

11. Click **Test Settings** to check that your DeskPRO installation can connect to Elasticsearch, then **Save Settings**.

Elasticsearch will take some time to index your helpdesk fully, but it can index thousands of records per second, so on most helpdesks the process will take a matter of minutes.

Ensure that the Elasticsearch service is configured to run on startup in case your server needs to reboot.

Note: If Elasticsearch ever crashes or stops working, DeskPRO will switch back to the default search mechanism.

For production use, we recommend that you consult the Elasticsearch documentation for more information about [configuration](#) and [running Elasticsearch as a service on Windows](#).

WINDOWS SERVER 2012

Installing and maintaining DeskPRO On-Premise requires basic server administration skills. If your organization does not have someone with the correct skills, we suggest you use [DeskPRO Cloud](#), our hosted service.

We also offer a DeskPRO On-Premise [installation service](#).

If you run into an installation issue that is not covered in this manual, search the [DeskPRO Knowledgebase](#) for troubleshooting help.

This section describes how to install DeskPRO on Windows Server 2012.

We recommend using the Automated DeskPRO Installer which will download and install all of the necessary components for you so you have a fully functional helpdesk within minutes.

6.1 Windows Installer

The Automatic Windows Installer is the preferred way to download and install DeskPRO on your Windows server or PC.

The installer will install and configure all of the necessary components required by DeskPRO including a web server, PHP, MySQL, Elasticsearch and Redis.

You can use this to configure a production helpdesk but it works equally well for testing or demoing purposes when used on any standard Windows PC.

1. Download the DeskPRO installer from <https://www.deskpro.com/deskpro-win.zip>
2. Extract the ZIP and then double-click `deskpro-win.exe` to launch the installer.
3. Follow the on-screen instructions.
4. In a couple of minutes, you will have a fully functional DeskPRO installation.

6.2 Manually Install using IIS 8

1. Using Server Manager, install IIS 8 and IIS Manager.
 - Go to **Manage > Add Roles and Features**.
 - Select **Role-based or feature-based installation**.
 - In **Server Selection**, leave the default (local) server selected.
 - In **Server Roles**, select `Web Server (IIS)`

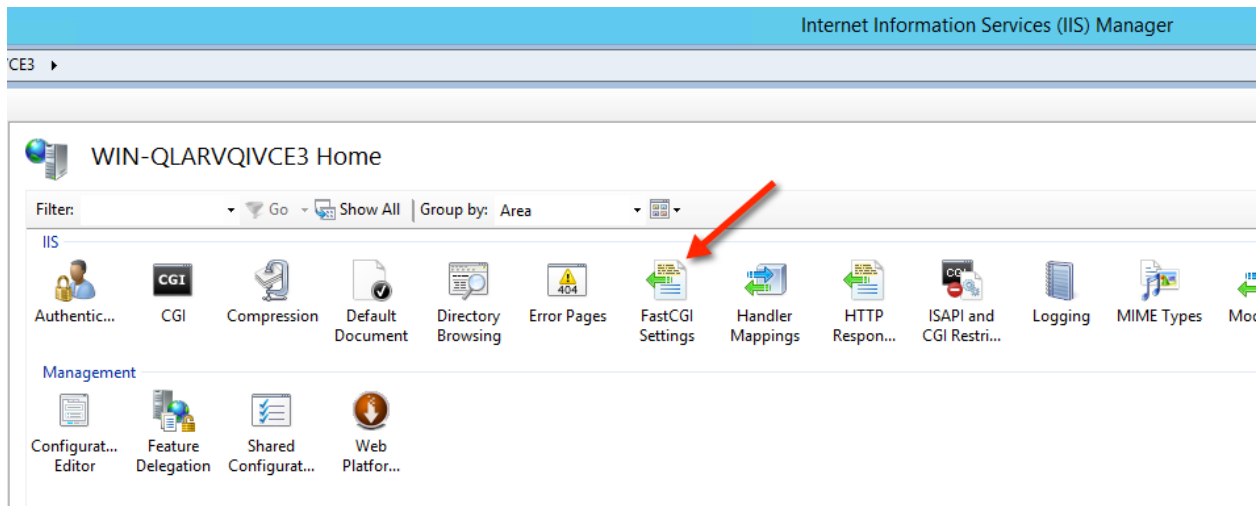
- In **Features**, make sure to select **.NET Framework 3.5 Features** and **.NET Framework 4.5 Features**

2. Using the [Microsoft Web Platform Installer](#), install:

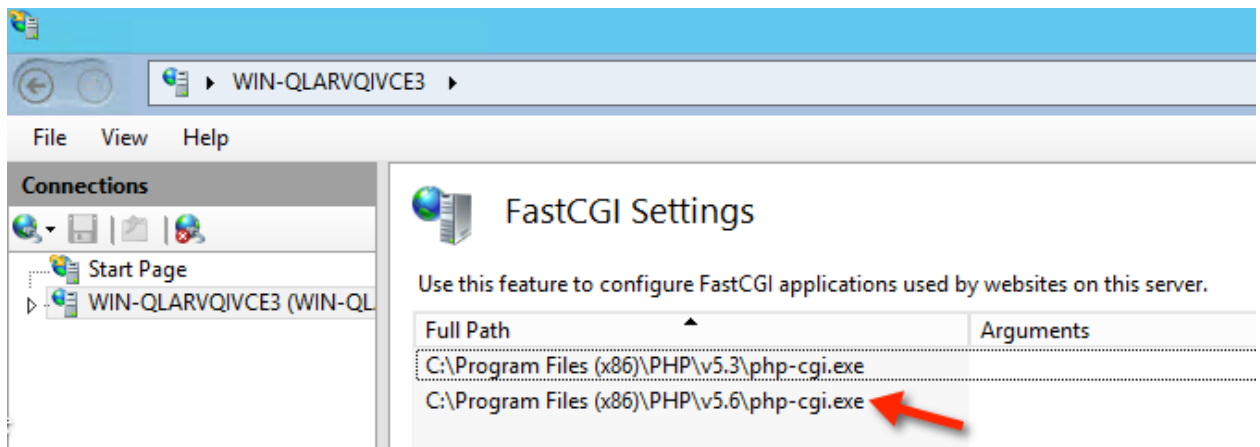
- PHP (v 7.x recommended; make sure you get an x86, non-thread safe version)
- URL Rewrite 2.0

This may download other products, including earlier versions of PHP. If you get a message about PHP Manager installation failing, don't worry.

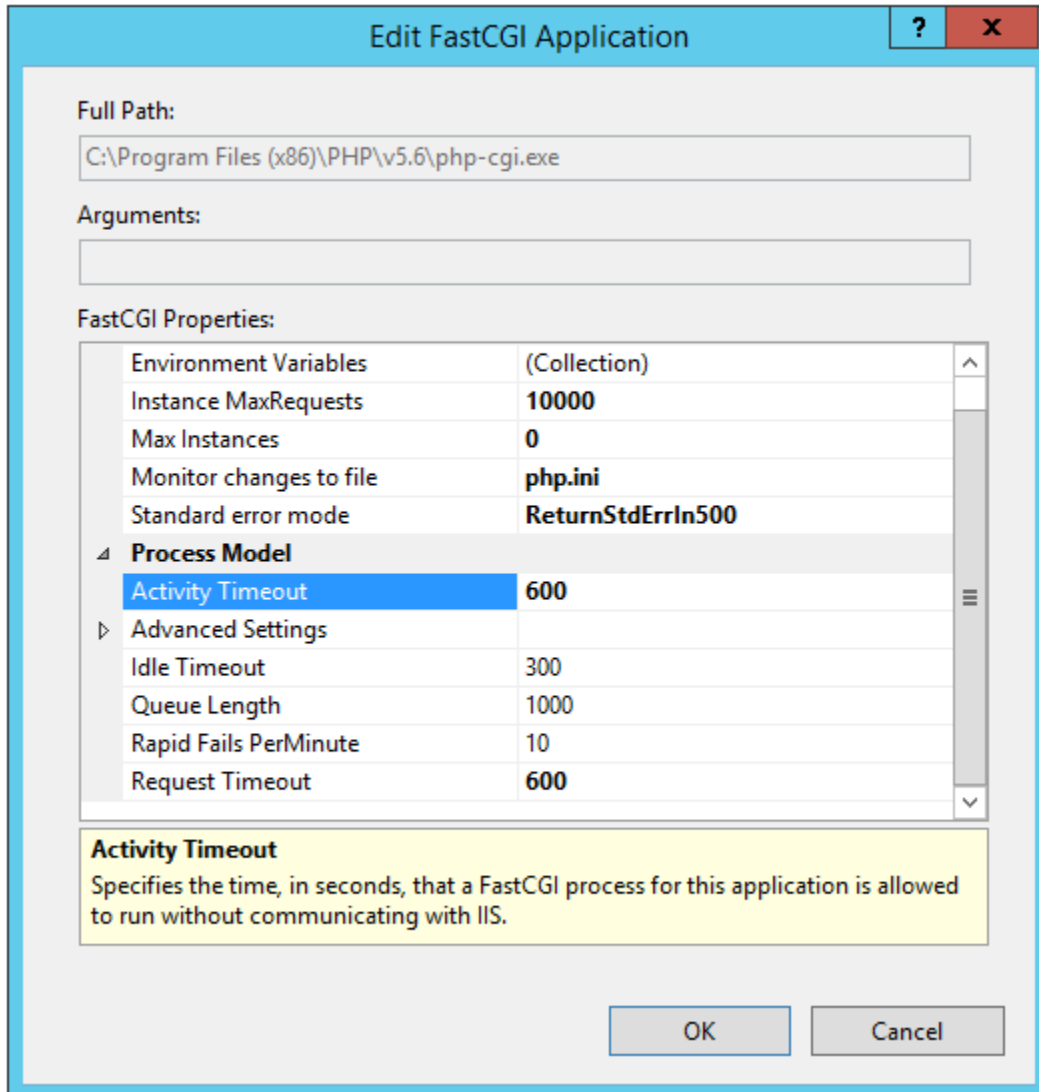
3. PHP should now be enabled as a FastCGI application in IIS. Look in IIS Manager and click **FastCGI Settings**.



Ensure that the version of PHP you want to use (usually, the newest one) is listed.



- If the version isn't listed, right-click on the **FastCGI Settings** pane and click **Add Application**. Enter the path to **php-cgi.exe** for the version of PHP you want to use with these settings:



4. Check that PHP is installed correctly by running the following from the command prompt:

```
php.exe -v
```

You should get output similar to this:

```
C:\Windows\system32>php-cgi.exe -v
PHP 5.5.11 (cgi-fcgi) (built: Apr 8 2014 15:06:59)
Copyright (c) 1997-2014 The PHP Group
Zend Engine v2.5.0, Copyright (c) 1998-2014 Zend Technologies
```

If your system has multiple versions of PHP installed, the output of this command confirms which version is actually being used.

5. DeskPRO uses all HTTP request verbs (GET, POST, DELETE, PUT), but by default the PHP Manager only enables GET and POST. You need to enable the others:
 - Open the IIS Manager

- Click on your Site in the left navigation pane.
 - Double click on the “Handler Mappings” icon
 - Double click on the PHP handler. It will have a name like “PHP_via_FastCGI”.
 - Click on the “Request Restrictions...” button
 - Switch to the “Verbs” tab, and switch the selection to “All Verbs”.
 - Click OK, then then OK again to save.
6. Install the latest MySQL server; an easy way to do this is using [MySQL Installer](#), select **Server Only** (despite the name, this also installs the command line client) and set the configuration type as **Server Machine**.

During the install, you will be prompted to create a root MySQL password; remember this.

You will also be able to set the MySQL server so that it runs as a service and starts automatically.

6.2.1 Install DeskPRO

1. Download the latest version of DeskPRO On-Premise from <https://www.deskpro.com/downloads/deskpro.zip>.
2. Create a directory `C:\deskpro`
3. Unzip the contents of the `deskpro.zip` file into `C:\deskpro`.
4. Create a Site with the physical path being `C:\deskpro\www`.

Or you can edit the Default Web Site by right clicking it in the left navigation pane, and then select Manage Website > Advanced Settings.

From the Advanced Settings window, edit the Physical Path to be `C:\deskpro\www`

5. Set up a Scheduled Task to run `php-win.exe` with `C:\deskpro\bin\cron` as an argument once per minute.

To do this, open Task Scheduler and under the “Actions” section on the right, select Create Task. Use the following details:

- Name: DeskPRO Task
- Security Options: * Select the user who owns the files (e.g. your currently logged-in user) * Select “Run whether user is logged on or not”
- Go to the Triggers tab and click “New” * Select “Daily” * Under Advanced, input “Repeat task every every 1 minute indefinitely”
- Go to the Actions tab and click “New” * Action: Start a program * Program: Click Browse and locate `php-win.exe` (typically `C:\Program Files (x86)\PHP<version>\php-win.exe`). * Arguments: `bin\cron` * Start In: `C:\deskpro`

See also: [Manually creating a Windows Scheduled Task](#).

6. Install DeskPRO by opening the command prompt and running the special install command:

```
cd C:\deskpro
"C:\path\to\php-win.exe" bin\install
```

You will need to use the same path to PHP that you used while configuring the scheduled task. For example:

```
cd C:\deskpro "C:\Program Files (x86)\PHPv7.0\php-win.exe" bin\install
```

7. In your browser, go to <http://localhost> (or wherever IIS is serving the DeskPRO site), and follow the final steps.

If you get a warning that HTTP methods are being blocked by your server, go to the IIS Manager Handler Mappings panel, edit the settings for php files, click **Request Restrictions** and select **All verbs** ([more details here](#)).

6.2.2 Final steps

For production, you should ensure that write access to the files in wwwroot is restricted to the IIS worker process using [Application Pool Identities](#).

You should also have DeskPRO access the database through a MySQL user with more limited privileges than the root user. On Windows systems, you will have a shortcut to the command line MySQL client where you can do this.

Log in as the root MySQL user and run the following MySQL commands:

```
CREATE USER 'deskpro_user'@'127.0.0.1' IDENTIFIED BY 'password1';
```

(replacing “password1” with a more complex password of your choice).

```
GRANT ALL PRIVILEGES ON deskpro.* TO 'deskpro_user'@'127.0.0.1';
```

(this assumes the default database name ‘deskpro’ is being used: if you have changed the DeskPRO database, you should replace ‘deskpro’ in the `deskpro.*` part above with whatever name you used).

```
FLUSH PRIVILEGES;
```

Now edit `config/config.database.php` to use the new MySQL user and password.

We recommend that you now install Elasticsearch to enable greatly improved search capabilities for agents and users.

6.2.3 Troubleshooting

You should be able to troubleshoot most installation problems by following the installation wizard’s instructions.

If you run into another problem, browse or search [the installation section of the DeskPRO Knowledgebase](#).

These articles cover the most common problems that can prevent you getting to the installation wizard stage:

“The FastCGI process exited unexpectedly” error

“The program can’t start because MSCVR110.dll is missing” error

Invalid php.ini directive error

Can’t change invalid upload_tmp_dir value

“Existing tables were detected in your database” error

Configuring HTTP verbs on IIS

Data directory is not writable

6.2.4 Installing Elasticsearch on Windows

You can install Elasticsearch to greatly improve the search features of your helpdesk. This is optional, but strongly recommended.

Note: Without Elasticsearch, DeskPRO search will still function, but searching will only match certain helpdesk content (e.g ticket titles instead of the full text of a ticket) and it will be slower.

For best performance, you should run Elasticsearch on a local server (the same server where you installed DeskPRO, or one on the same network). You can also use a third-party hosted Elasticsearch service - see [Using hosted Elasticsearch from Found](#) for an example of how to set this up.

Warning: You must install the stable 2.x version of Elasticsearch to use with DeskPRO. Elasticsearch 1.x or 5.x is not supported.

To install Elasticsearch locally and connect it to your helpdesk:

1. For best performance, you should install [Java Server JRE](#).
2. Accept the license agreement and download the Server JRE tar.gz package.
3. Extract the package to a folder in Program Files. If you do not have suitable software to uncompress tar.gz files, we suggest [7-zip](#). Note that after you extract the package once, you will get a tar file without an extension which you then have to uncompress a second time.
4. Set the JAVA_HOME environment variable.

Go to **Control Panel > System > Advanced system settings** and find the **Environment variables** settings. The exact location may vary depending on the version of Windows.

Click **Environment variables** and set JAVA_HOME to be the full path to /jre folder you extracted in step 3, e.g.

```
C : \Program Files (x86)\Java\server-jre-8u20-windows-x64\jdk1.8.0_20\jre
```

5. Download the ZIP version of Elasticsearch 2.x from [the Download section of elastic.co](#) and extract the files to a directory.
6. In the resulting /config subdirectory, edit elasticsearch.yml to restrict access to your Elasticsearch node. Search for the line that mentions “network.bind_host”, delete the leading # and change it to:

```
network.bind_host: 127.0.0.1
```

(This assumes you are running Elasticsearch on the same server as DeskPRO. If not, consult [the Elasticsearch documentation about network settings](#)).

7. From the command prompt, go to the resulting folder and run:


```
service install then service start
```
8. You should see confirmation that the service has been installed and started.
9. To check that Elasticsearch is running correctly, go to <http://localhost:9200/> in your browser. Depending on the browser you’re using you will either see output like this, or be prompted to download a JSON file with similar content:

```
{
  "status" : 200,
  "name" : "Agon",
  "version" : {
    "number" : "1.3.2",
```

```
"build_hash" : "deed17544e2f254f3f269435345d7591939aaefd12f",
"build_timestamp" : "2014-08-13T14:29:30Z",
"build_snapshot" : false,
"lucene_version" : "4.9"
},
"tagline" : "You Know, for Search"
}
```

10. In the DeskPro admin interface, go to **Server > Elasticsearch**, check **Enable Elasticsearch** and enter the URL of the service (e.g. `http://localhost` if it is running on the same server).

Warning: Depending on the Elasticsearch configuration, you may need to specify the port to connect to as well, e.g. `http://my-es-host:80/` or `https://my-es-host:443/`.

Note: If the Elasticsearch section of the admin interface doesn't load, see [Elasticsearch configuration page not loading in admin](#) on our Knowledgebase.

11. Click **Test Settings** to check that your DeskPRO installation can connect to Elasticsearch, then **Save Settings**.

Elasticsearch will take some time to index your helpdesk fully, but it can index thousands of records per second, so on most helpdesks the process will take a matter of minutes.

Ensure that the Elasticsearch service is configured to run on startup in case your server needs to reboot.

Note: If Elasticsearch ever crashes or stops working, DeskPRO will switch back to the default search mechanism.

For production use, we recommend that you consult the Elasticsearch documentation for more information about [configuration](#) and [running Elasticsearch as a service on Windows](#).

INSTALL ON WINDOWS 8, 9 & 10

Installing and maintaining DeskPRO On-Premise requires basic server administration skills. If your organization does not have someone with the correct skills, we suggest you use [DeskPRO Cloud](#), our hosted service.

We also offer a DeskPRO On-Premise [installation service](#).

If you run into an installation issue that is not covered in this manual, search the [DeskPRO Knowledgebase](#) for troubleshooting help.

This section describes how to install DeskPRO on Windows 8, 9 & 10.

We recommend using the Automated DeskPRO Installer which will download and install all of the necessary components for you so you have a fully functional helpdesk within minutes.

7.1 Windows Installer

The Automatic Windows Installer is the preferred way to download and install DeskPRO on your Windows server or PC.

The installer will install and configure all of the necessary components required by DeskPRO including a web server, PHP, MySQL, Elasticsearch and Redis.

You can use this to configure a production helpdesk but it works equally well for testing or demoing purposes when used on any standard Windows PC.

1. Download the DeskPRO installer from <https://www.deskpro.com/deskpro-win.zip>
2. Extract the ZIP and then double-click `deskpro-win.exe` to launch the installer.
3. Follow the on-screen instructions.
4. In a couple of minutes, you will have a fully functional DeskPRO installation.

7.2 Manually Install using IIS 8.5

This section describes how to install DeskPRO using Windows 8.1/IIS Express 8.5 from scratch.

7.2.1 Install server software

1. Install the [Microsoft Web Platform Installer](#).
2. Using the installer, find and install:
 - IIS Recommended Configuration

- PHP 7.0.x (make sure you get an x86, non-thread safe version)
 - IIS Manager
 - PHP Manager
 - URL Rewrite 2.0
3. Follow the instructions in [the section “Enabling FastCGI support in IIS” on this page.](#)
 4. Start IIS Manager and use the PHP Manager panel. Register the version of PHP you wish to use, and use **Check phpinfo()** to ensure PHP is working correctly.
 5. You should see a screen with the PHP version and PHP configuration information.
If you get an error, run the **php-win.exe** executable from the command prompt to see if there is an error message providing further information about the problem.
 6. Install the latest MySQL server; an easy way to do this is using [MySQL Installer](#), select **Server Only** (despite the name, this also installs the command line client) and set the configuration type as **Server Machine**.
During the install, you will be prompted to create a root MySQL password; remember this.
You will also be able to set the MySQL server so that it runs as a service and starts automatically.

7.2.2 Install DeskPRO

1. Download the latest version of DeskPRO On-Premise from <https://www.deskpro.com/downloads/deskpro.zip>.
2. Create a directory `C:\deskpro`
3. Unzip the contents of the `deskpro.zip` file into `C:\deskpro`.
4. Create a Site with the physical path being `C:\deskpro\www`.

Or you can edit the Default Web Site by right clicking it in the left navigation pane, and then select Manage Website > Advanced Settings.

From the Advanced Settings window, edit the Physical Path to be `C:\deskpro\www`

5. Set up a Scheduled Task to run `php-win.exe` with `C:\deskpro\bin\cron` as an argument once per minute.

To do this, open Task Scheduler and under the “Actions” section on the right, select Create Task. Use the following details:

- Name: DeskPRO Task
- Security Options: * Select the user who owns the files (e.g. your currently logged-in user) * Select “Run whether user is logged on or not”
- Go to the Triggers tab and click “New” * Select “Daily” * Under Advanced, input “Repeat task every every 1 minute indefinitely”
- Go to the Actions tab and click “New” * Action: Start a program * Program: Click Browse and locate `php-win.exe` (typically `C:\Program Files (x86)\PHP<version>\php-win.exe`). * Arguments: `bin\cron` * Start In: `C:\deskpro`

See also: [Manually creating a Windows Scheduled Task.](#)

6. Install DeskPRO by opening the command prompt and running the special install command:

```
cd C:\deskpro
"C:\path\to\php-win.exe" bin\install
```

You will need to use the same path to PHP that you used while configuring the scheduled task. For example:

```
cd C:\deskpro "C:\Program Files (x86)\PHPv7.0\php-win.exe" bininstall
```

7. In your browser, go to <http://localhost> (or wherever IIS is serving the DeskPRO site), and follow the final steps.

If you get a warning that HTTP methods are being blocked by your server, go to the IIS Manager Handler Mappings panel, edit the settings for php files, click **Request Restrictions** and select **All verbs** ([more details here](#)).

7.2.3 Final steps

For production, you should ensure that write access to the files in wwwroot is restricted to the IIS worker process using [Application Pool Identities](#).

You should also have DeskPRO access the database through a MySQL user with more limited privileges than the root user. On Windows systems, you will have a shortcut to the command line MySQL client where you can do this.

Log in as the root MySQL user and run the following MySQL commands:

```
CREATE USER 'deskpro_user'@'127.0.0.1' IDENTIFIED BY 'password1';
```

(replacing “password1” with a more complex password of your choice).

```
GRANT ALL PRIVILEGES ON deskpro.* TO 'deskpro_user'@'127.0.0.1';
```

(this assumes the default database name ‘deskpro’ is being used: if you have changed the DeskPRO database, you should replace ‘deskpro’ in the `deskpro.*` part above with whatever name you used).

```
FLUSH PRIVILEGES;
```

Now edit `config/config.database.php` to use the new MySQL user and password.

We recommend that you now install Elasticsearch to enable greatly improved search capabilities for agents and users.

7.2.4 Troubleshooting

You should be able to troubleshoot most installation problems by following the installation wizard’s instructions.

If you run into another problem, browse or search [the installation section of the DeskPRO Knowledgebase](#).

These articles cover the most common problems that can prevent you getting to the installation wizard stage:

“The FastCGI process exited unexpectedly” error

“The program can’t start because MSCVR110.dll is missing” error

Invalid php.ini directive error

Can’t change invalid upload_tmp_dir value

“Existing tables were detected in your database” error

Configuring HTTP verbs on IIS

Data directory is not writable

7.2.5 Installing Elasticsearch on Windows

You can install Elasticsearch to greatly improve the search features of your helpdesk. This is optional, but strongly recommended.

Note: Without Elasticsearch, DeskPRO search will still function, but searching will only match certain helpdesk content (e.g ticket titles instead of the full text of a ticket) and it will be slower.

For best performance, you should run Elasticsearch on a local server (the same server where you installed DeskPRO, or one on the same network). You can also use a third-party hosted Elasticsearch service - see [Using hosted Elasticsearch from Found](#) for an example of how to set this up.

Warning: You must install the stable 2.x version of Elasticsearch to use with DeskPRO. Elasticsearch 1.x or 5.x is not supported.

To install Elasticsearch locally and connect it to your helpdesk:

1. For best performance, you should install [Java Server JRE](#).
2. Accept the license agreement and download the Server JRE tar.gz package.
3. Extract the package to a folder in Program Files. If you do not have suitable software to uncompress tar.gz files, we suggest [7-zip](#). Note that after you extract the package once, you will get a tar file without an extension which you then have to uncompress a second time.
4. Set the JAVA_HOME environment variable.

Go to **Control Panel > System > Advanced system settings** and find the **Environment variables** settings. The exact location may vary depending on the version of Windows.

Click **Environment variables** and set JAVA_HOME to be the full path to /jre folder you extracted in step 3, e.g.

```
C : \Program Files (x86)\Java\server-jre-8u20-windows-x64\jdk1.8.0_20\jre
```

5. Download the ZIP version of Elasticsearch 2.x from [the Download section of elastic.co](#) and extract the files to a directory.
6. In the resulting /config subdirectory, edit elasticsearch.yml to restrict access to your Elasticsearch node. Search for the line that mentions “network.bind_host”, delete the leading # and change it to:

```
network.bind_host: 127.0.0.1
```

(This assumes you are running Elasticsearch on the same server as DeskPRO. If not, consult [the Elasticsearch documentation about network settings](#)).

7. From the command prompt, go to the resulting folder and run:


```
service install then service start
```
8. You should see confirmation that the service has been installed and started.
9. To check that Elasticsearch is running correctly, go to <http://localhost:9200/> in your browser. Depending on the browser you’re using you will either see output like this, or be prompted to download a JSON file with similar content:

```
{
  "status" : 200,
  "name" : "Agon",
  "version" : {
    "number" : "1.3.2",
```

```
"build_hash" : "deed17544e2f254f3f269435345d7591939aaefd12f",
"build_timestamp" : "2014-08-13T14:29:30Z",
"build_snapshot" : false,
"lucene_version" : "4.9"
},
"tagline" : "You Know, for Search"
}
```

10. In the DeskPro admin interface, go to **Server > Elasticsearch**, check **Enable Elasticsearch** and enter the URL of the service (e.g. `http://localhost` if it is running on the same server).

Warning: Depending on the Elasticsearch configuration, you may need to specify the port to connect to as well, e.g. `http://my-es-host:80/` or `https://my-es-host:443/`.

Note: If the Elasticsearch section of the admin interface doesn't load, see [Elasticsearch configuration page not loading in admin](#) on our Knowledgebase.

11. Click **Test Settings** to check that your DeskPRO installation can connect to Elasticsearch, then **Save Settings**.

Elasticsearch will take some time to index your helpdesk fully, but it can index thousands of records per second, so on most helpdesks the process will take a matter of minutes.

Ensure that the Elasticsearch service is configured to run on startup in case your server needs to reboot.

Note: If Elasticsearch ever crashes or stops working, DeskPRO will switch back to the default search mechanism.

For production use, we recommend that you consult the Elasticsearch documentation for more information about [configuration](#) and [running Elasticsearch as a service on Windows](#).

INSTALL ON VIRTUAL HOSTING

8.1 Requirements

You can install DeskPRO on many third-party web hosting providers.

Some shared web hosting services have limitations which are incompatible with DeskPRO:

1. You must have access to the CLI version of PHP, not just the CGI/FCGI version. If your webhost hasn't installed the CLI binary, you will see DeskPRO errors saying "This script must only be run from the CLI." You can confirm what version is running by connecting with SSH and running:

```
/usr/bin/php -v
```

You should get a result like 'PHP 7.0.7 (cli)'. If it says 'php-cgi', you will need to request access the CLI binary.
2. PHP 7.0 is required and you need to be able to enable all the PHP modules required by DeskPRO. See [Requirements](#).
3. You need to be able to specify the path to DeskPRO's web root. Some providers may only allow you to upload files to a specific folder (e.g. called 'public'). DeskPRO requires you to upload the app files and then configure the server to serve files from the `www/` directory.
4. DeskPRO has a command-line based installer and many command-line tools. You need to have access to the command-line (e.g. SSH).
5. Some web hosting providers limit the frequency of scheduled tasks. You should be able to set a cron job or Windows Scheduled Task to run once per minute.

8.2 Installation

The exact steps to install DeskPRO will vary by hosting provider.

The general steps are:

1. Download the most recent version of Download from <https://www.deskpro.com/downloads/deskpro.zip>.
2. Create a MySQL 'deskpro' user account.
3. Upload DeskPRO to your server and extract.
4. Configure your server to serve from the DeskPRO `www/` sub-directory. For example, if you uploaded DeskPRO to `/home/example/deskpro` then you need to configure the web root to be `/home/example/deskpro/www`
3. From the command-line, begin the installer: `php /home/example/deskpro/bin/install`

4. Once installation is complete, you can log on to DeskPRO with the account details you gave during installation. Start by going to the admin interface at `/admin/`.

After installing DeskPRO, we strongly recommend that you set up Elasticsearch in **Server > Elasticsearch** to enable greatly improved search capabilities for agents and users.

If your hosting provider doesn't offer Elasticsearch, you can use a hosted service such as [Found](#).

See the article [Using hosted Elasticsearch from Found](#) on our Knowledgebase for details.

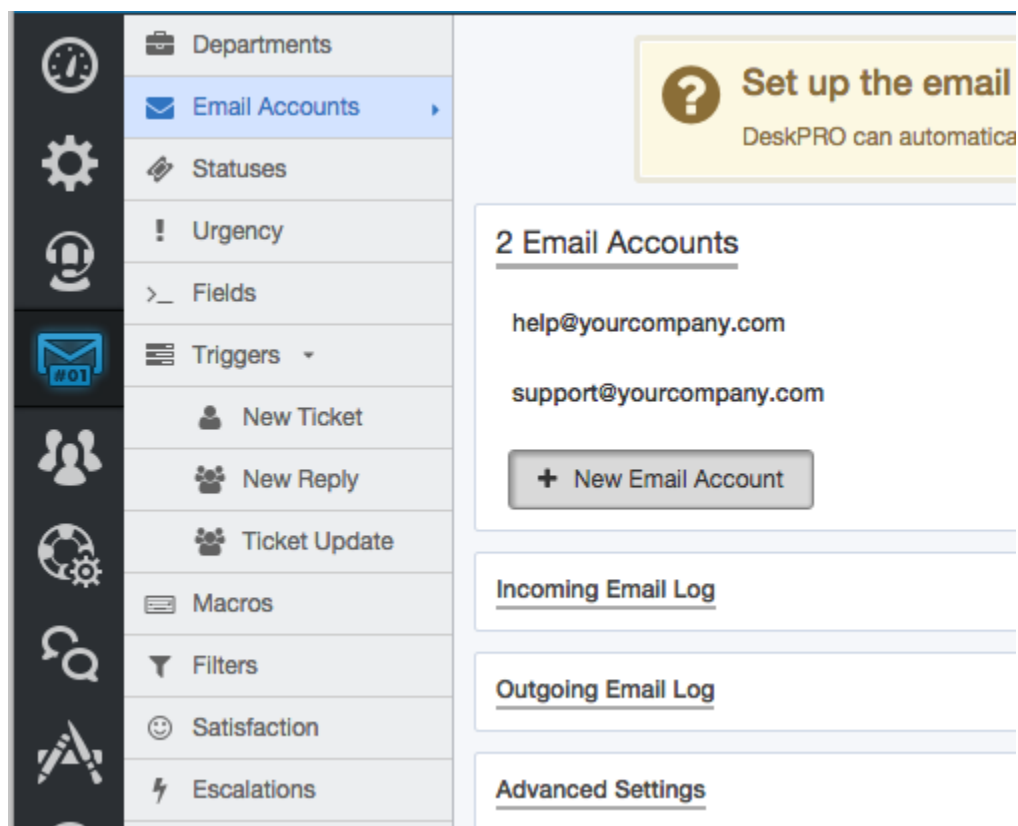
CONFIGURING ON-PREMISE

This chapter covers configuration options specific to DeskPRO On-Premise.

9.1 Email accounts

Under **Tickets > Email Accounts**, you can configure the email accounts that will be used to accept tickets and send out email notifications.

These will usually be your existing support addresses e.g. `support@yourcompany.com`.



Any new message to one of these accounts is automatically converted to a ticket within your helpdesk. If the message is part of an ongoing conversation (i.e. it is in response to a message about an existing ticket), it will be added to the ticket as a message.

A ticket email account can't also be used for a DeskPRO user or agent account. This is necessary to prevent email loops, where DeskPRO could end up replying to its own emails endlessly. It's best to add agents using individual email accounts (e.g. `john.smith@yourcompany.com`), rather than with user-facing addresses like `support@`.

Note that email account configuration differs between the Cloud and On-Premise versions of DeskPRO.

9.1.1 On-Premise email configuration

Here's how to add a ticket email account in DeskPRO On-Premise:

1. Go to **Tickets > Email Accounts** and click **New Email Account**.

Email Address *

Enter the main email address for this account.

☐ This account has additional email addresses associated with it (aliases)

Enabled

☒ Enable this email account

When enabled, new emails will be processed from this account and outgoing emails may be sent out from this address.

Type

Ticket Email Account

Ticket accounts are email accounts that DeskPRO will download emails from and process into tickets and replies.

Account Details *

POP3

Host

Port

Secure

☐ Enable secure network connection

Username

Password

⚡ Test Account Settings

Outgoing Email *

Send mail using PHP mail()

PHP Mail

Send mail through the server `mail()` function.

⚡ Test Account Settings

New Ticket Trigger

When a user submits a new ticket by emailing this address:

☒ Set Department

Support

☐ Send User Email

➕ Action

Save

Reset

2. **Email Address** is simply the user-facing email address you want to use for support e.g. `support@yourcompany.com`
3. Leave **Type** as **Ticket Email Account**.
4. Select the type of email account you are using (IMAP, POP3, Gmail/Google Apps, or MS Exchange), and en-

ter the server details requested.

If there are details you don't know, check the settings/documentation of your email program or mail provider. Note that **Host** means the address of the IMAP or POP3 (incoming mail) server.

Note: Gmail/Google Apps users: if you are using [2-Step Verification](#), you will need to create an [App Password](#) and enter that into DeskPRO instead of your usual password.

Otherwise, you may need to log in to the Google Account and enable the "Less Secure Apps" option at <https://www.google.com/settings/security/lesssecureapps>. See [this article](#) for more details.

5. Specify how DeskPRO sends outgoing email.

- The default **Send mail using PHP mail()** option sends emails directly from your DeskPRO installation with a PHP function - this will usually work without extra configuration, but you may need to configure PHP further.
- For more reliability, we recommend sending email via your server or email service provider. You must ensure that your server/service is configured to relay mail from your DeskPRO installation: consult its documentation for how to do this.

6. Click **Test Account Settings** to try sending an email to yourself and confirm that DeskPRO can send email. If you get a connection error, check the details you entered. You may also need to change your network configuration to open up the port mentioned in the error.

9.2 Domain setup

If you're using DeskPRO On-Premise, you control the domain or IP address where your helpdesk appears by configuring your webserver and DNS servers.

Once you've set this up, go to **Setup > Settings** and under **Helpdesk URL**, enter the base URL/IP that your users will use to access the helpdesk, e.g.:

`https://support.yourcompany.com` or `http://173.309.330.12`

You need to make sure this setting is correct so that DeskPRO can generate links to your portal (for example, in email notifications.)

9.3 Enabling SSL

All the set up and configuration of SSL for DeskPRO On-Premise is done at the webserver level. Consult your webserver documentation for details of how to set up SSL. Bear in mind you will also need to obtain and install an SSL certificate.

For SSL to work, you should make sure the PHP OpenSSL extension is installed (you can check this from **Admin > Server > Server Requirements**).

You should also set the Helpdesk URL in **Setup > Settings** to the [https://](#) URL.

9.4 Configuring file storage

By default, uploaded files (such as email attachments) are stored in the MySQL database. However, databases are not designed to store binary data like this efficiently.

DeskPRO supports two alternative storage methods:

- Storing files in the *filesystem of your server*.
- Storing files using [Amazon's S3 cloud storage service](#).

For better performance, we recommend switching from database storage to either of these two methods.

9.4.1 Switching to filesystem storage

To switch to filesystem storage:

1. Go to **Server > File Uploads**.
2. Click **Change Storage Mechanism**.
3. In the pop-up window that opens, select **Filesystem**.

Change Storage Mechanism

☐ Database

☒ Filesystem

This option stores files as regular files on your server filesystem. It is very efficient and is the recommended option.

Server Path: `/var/www/data/files`
You can change this by editing the `dir_data` variable in your `config.php` file.

☐ Amazon S3

Save new storage mechanism

4. Click **Save new storage mechanism**.

Binary files will begin to be stored in `/data/files` within the directory where you installed DeskPRO. Any files already stored in the database will gradually be transferred to the filesystem in small batches (a few files will be moved each time the once-per-minute cron job/Scheduled Task runs).

9.4.2 Server configuration and file size

Your server configuration determines the maximum file size DeskPRO can handle; factors include the amount of memory available to PHP and the values of some settings in your `php.ini` file. This determines the size of file that DeskPRO can handle as an upload from a web interface (agent, portal, chat widget etc) or as an email attachment.

See **Server Settings > File Uploads** for details of which settings affect the file size limit, and how to change it.

Raising the file size settings in **Setup > Settings** (under **User Attachments** and **Agent Attachments**) will not work if it exceeds the maximum file size determined by the server configuration.

9.4.3 Filesystem storage with multiple web servers

If you have multiple web servers, you must ensure that they are all accessing the same shared filesystem (e.g. using Network Attached Storage). If each web server is storing files to its own filesystem, then when web server A stores a file, web server B will not be able to access it, and you will experience errors.

You can set a custom location for filesystem storage by editing the `dir_data` variable in the DeskPRO `config.php` file. Use this to set the location of the shared filesystem.

Another way to deal with the issue of file storage with multiple servers is to use [Amazon S3](#). All the web servers will be storing and retrieving their files from a single S3 'bucket'.

9.4.4 Switching to Amazon S3 storage

Switching to Amazon S3 cloud storage has two main advantages:

- S3 storage is highly available and highly scalable. This reduces your server administration burden, since you don't have to ensure that your servers have disk space for all the files.
- If your DeskPRO installation uses multiple web servers, it's easy to have them share the same S3 storage. Using filesystem storage with multiple web servers requires extra configuration overhead.

To use Amazon S3, you must register with [Amazon Web Services](http://aws.amazon.com/s3/) at <http://aws.amazon.com/s3/>.

1. Open the **Services** menu in the top left corner of the screen and click on **S3**.
2. Click on **Create Bucket** and choose a bucket name; for compatibility the name should:
 - Have 3 to 63 characters.
 - Contain only lower case letters (at least one), numbers and `-`.

Warning: Although buckets with a `.` (full stop/period) in their name are allowed by S3, you should *not* use them for DeskPRO, since this can cause compatibility problems with SSL.

3. Select a location that is closest to the location of your DeskPRO On-Premise webserver.
4. Select your new bucket in the list and click **Properties** tab in the right pane. Expand the **Permissions** section and click **Add Bucket Policy** and paste the following policy into the box:

```
{
  "Version": "2008-10-17",
  "Statement": [
    {
      "Sid": "AllowPublicRead",
      "Effect": "Allow",
      "Principal": {
```

```

        "AWS": "*"
    },
    "Action": [
        "s3:GetObject"
    ],
    "Resource": [
        "arn:aws:s3:::YOUR_BUCKET_NAME/*"
    ]
}
]
}

```

(Replace “YOUR_BUCKET_NAME” with the name of the bucket you just created). This policy makes the bucket public, so DeskPRO can serve binary objects or “blobs” directly from the Amazon S3 servers.

5. In the top right corner of the AWS site, you will see your name with a pull-down menu control. Use this to access the **AWS Security Credentials** screen.
6. Click the + icon next to the **Access Keys** section. Click **Create New Access Key** and save the Access Key ID and Secret Access Key. It’s very important to save the Secret Access Key now; you will not be able to retrieve it once you close the window.

For security, you should create a separate IAM user with specific permissions instead of using an access key from your main AWS user (which has full AWS permission to do everything). See the section [IAM user for S3 storage](#) below for details.

7. To enable S3 storage within DeskPRO, in the admin interface go to **Server> File Uploads**. Click the **Storage Mechanism Options** button and switch the mechanism to Amazon S3.

Enter the Access Key, Secret Key and S3 Bucket Name you configured above, then click **Save**.

DeskPRO will automatically move existing files to S3. This is done gradually, in small batches, as part of the default once-per-minute scheduled task (the same one that is responsible for processing email).

If you do not see files being added to the bucket, see [Troubleshooting S3](#) below.

This process can take a long time, especially if you have a lot of data. If you would like to speed up the process, you can use the dedicated command-line tool:

```

$ cd /path/to/deskpro
$ php cmd.php dp:move-blobs          # Shows an overview
$ php cmd.php dp:move-blobs --run    # Actually starts moving files

```

It may seem insecure to have every file within your helpdesk (including email attachments) hosted publicly on S3. However, the URL for each file on S3 includes a very long string of random and unguessable characters that essentially acts as a password and ensures that people or bots browsing the web cannot find the ‘public’ files.

Only people who are authorized to see the file can get the URL. While a user or agent who is authorized to see the file could copy the URL and pass it to somebody else, they could also copy the file itself and pass it on. So enabling S3 doesn’t make your files any more accessible than if you use filesystem or database storage.

Note that in the unlikely event that the S3 service becomes unavailable, links to previously-added files will not work. For example, if you had added an image to a Knowledgebase article while you were using S3, that image would not load in the browser while S3 was down. However, your helpdesk as a whole will remain operational. If S3 is unavailable, DeskPRO automatically switches back to database storage for newly-created attachments.

IAM user for S3 storage

It is best security practice not to use your root account credentials to set up S3. It is more secure to create a dedicated IAM user within AWS, and use that for S3 access instead. That way, an attacker who steals your Secret Key only gets access to one S3 bucket, instead of your whole AWS account.

See the [AWS IAM best practices](#) for an introduction to how IAM works.

You will need to grant the IAM user access to your DeskPRO bucket.

Use this policy, either attached inline to the user, or granted through a group:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "s3:ListBucket",
        "s3:GetBucketLocation"
      ],
      "Resource": "arn:aws:s3:::YOUR_BUCKET_NAME"
    },
    {
      "Effect": "Allow",
      "Action": [
        "s3:PutObject",
        "s3:GetObject",
        "s3:DeleteObject"
      ],
      "Resource": "arn:aws:s3:::YOUR_BUCKET_NAME/*"
    }
  ]
}
```

After you have set this up, you should then generate a Secret Key for the IAM user, and enter that into the S3 settings in DeskPRO.

Note: Older keys generated for the same IAM user may not work. Generate a fresh key only after you have set up the bucket and added the policy above to the IAM user.

Troubleshooting S3

If files are not being added to the S3 bucket after you have switched to S3 storage, add this to your `config.php` file:

```
$DP_CONFIG['enable_blobstorage_log'] = true;
```

Then try adding another file to DeskPRO, then check the log at `data/logs/blob_storage.log`. The error messages logged there will give you more information about the problem.

If you see this error:

The request signature we calculated does not match the signature you provided. Check your key and signing method.

the problem is likely due to the Access Key, Secret Key or S3 Bucket Name being incorrectly entered in DeskPRO.

9.5 Error reporting

Note that in the unlikely event that DeskPRO On-Premise encounters a problem in its software, the error will be reported to the DeskPRO servers to enable rapid diagnosis and resolution of any problem. To disable this reporting, please add the following line to the bottom of your config.php file.

```
$DP_CONFIG['debug']['no_report_errors'] = true;
```


UPDATING DESKPRO

It's important to keep your helpdesk up to date. DeskPRO regularly releases updates with new features, bug fixes, performance improvements and security fixes. The best way to keep your helpdesk running smoothly is to stay up to date.

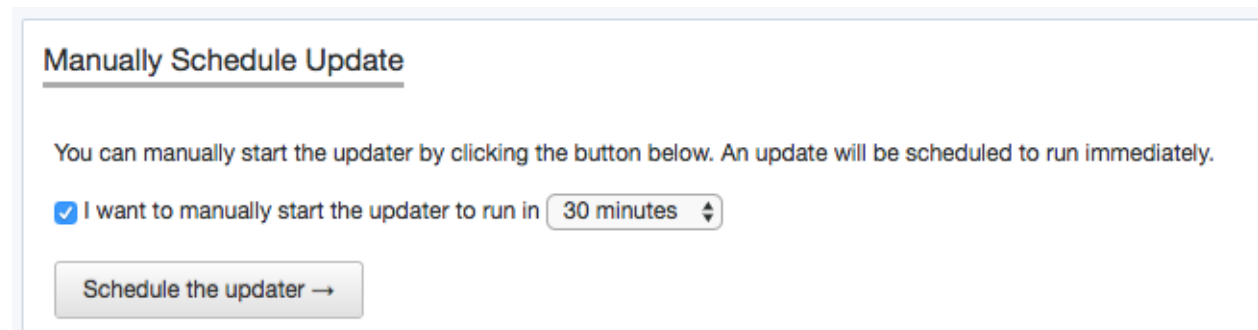
Note: Are you using an older DeskPRO build (such as #443 or older)? Refer to the guide [Upgrade to New Portal](#)

10.1 Automatic Updater

The automatic DeskPRO updater will check for an update, download, extract and install everything for you. This is the recommended way to perform an update.

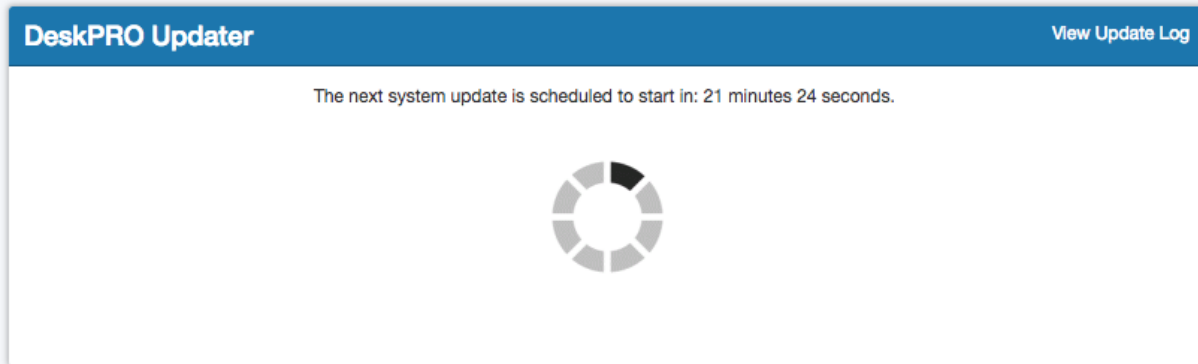
Schedule Update

Initiate the updater from Admin > Setup > Automatic Updater.



The screenshot shows a web interface titled "Manually Schedule Update". Below the title, there is a text instruction: "You can manually start the updater by clicking the button below. An update will be scheduled to run immediately." Below this, there is a checked checkbox labeled "I want to manually start the updater to run in" followed by a dropdown menu currently set to "30 minutes". At the bottom of the form is a button labeled "Schedule the updater →".

After you schedule an update, you'll see a new section on the page titled "Next Update". Click the "Open Update Status" button to load a special web page that will show you the status of any running upgrade.



This page will auto-update with the status of the updater as it runs.

10.2 Manual Updates

You can also run the updater tool yourself from the command line. Go to Admin > Setup > Automatic Updater and near the bottom of the page is a section that should give you the exact command to run.

Update from the command line

You can always run the updater yourself from the command-line by issuing the following command:

```
/usr/bin/php /opt/deskpro/bin/console dp:update
```

Running this will start the updater. It will check for updates and prompt you to install them if any are available

Just open the console on your server and type this command in exactly as it appears.

10.3 Update From Source

This page will describe how to manually update DeskPRO source files and run database migrations.

1. Download a fresh DeskPRO distribution from <https://www.deskpro.com/downloads/deskpro.zip>
2. Before going any further, make sure to back-up the files on your LIVE server.
3. On your LIVE server, delete the /app directory in the root of DeskPRO.
2. Extract the zip and upload the contents to your LIVE server except the following:
 - attachments/
 - backups/

Do NOT overwrite or delete these directories because they may contain data pertinent to your helpdesk.

3. Finally, you need to run a database migrations script to update our database with any schema changes required by the new build:

```
cd /path/to/deskpro  
/path/to/php bin/console dp:upgrade
```

10.4 Troubleshooting

UPGRADE TO DESKPRO V5 (NEW PORTAL)

DeskPRO released a major update in early August (sometimes colloquially referred to as “new portal” or “DeskPRO v5”). This new major update has new server requirements and has a slightly different web server configuration.

This document will describe how to upgrade from DeskPRO #443 to the new version released in early August.

Note: You must upgrade your current helpdesk instance to build #443 before attempting to upgrade to “new portal”.

11.1 First Steps

Backwards incompatible changes

- The new user portal is completely new. Customised templates or phrases will NOT be brought over when you upgrade. You will need to re-apply customisations.
- Custom logos, headers and footers will be upgraded. But since the portal is completely new, they may not look exactly the same. You may need to make minor alterations.
- The “Feedback and Support Tab” website widget has been removed. The functionality has been folded into a single “website widget” (which includes chat as well). But not all functions of the old widget exist yet, including browsing content and search. These features will be added back to the new website widget in a more customisable and controlled way.

Backups and tests

This is a major update. Before you update:

- Make a backup of your database and filesystem! It is very important you have a reversion strategy in the event of an issue.
- It is very highly recommended you perform a test update before attempting to update your live site to avoid downtime. Remember, this update requires changes to your server requirements and configuration, so you should verify everything works before you attempt to switch your live helpdesk over.

Backing up your database is simple. It can be done from the command-line using MySQL’s mysqldump utility:

```
mysqldump your_db_name > backup.sql
```

Make sure to disable your helpdesk before you do your last backup. This will ensure the backup contains the latest data and won’t be updated with new information during the process.

New Requirements

DeskPRO server requirements have changed.

- PHP >= 5.5 is now required. For significant performance benefits, we recommend using PHP 7.0.
- ElasticSearch 2.0 is now required. If you are using ElasticSearch in DeskPRO, you WILL need to update your ElasticSearch server. * If you were not using ElasticSearch before, now might be a good time to get it set up for significantly improved search accuracy and performance.
- Some PHP extensions that were previously optional are now required. See [Requirements](#) for details.
- Your server must be capable of “URL rewriting”. For Apache users, this means `mod_rewrite` must be enabled; for IIS users, this means the `URL Rewrite 2.0` extension must be enabled.

11.2 Update to #443 first

Please note that you must be using DeskPRO #443 before you attempt to upgrade to the new portal version.

If you are not yet running DeskPRO #443, you can update your current helpdesk the usual way to get it.

11.2.1 Updating to #443

Update message

While the update happens, the helpdesk will be unavailable for a few minutes (depending on the size of your database).

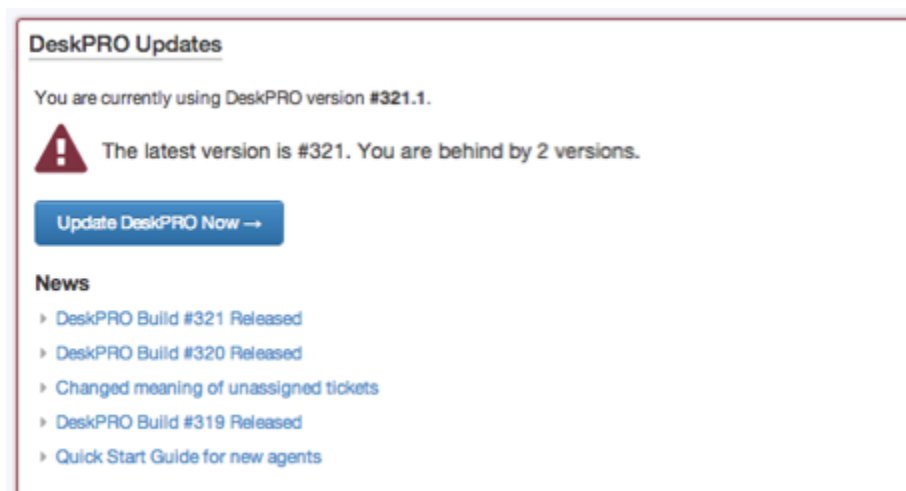
By default, this message will be displayed:

```
The helpdesk is undergoing routine maintenance. We will be back in about
10 minutes.
```

Under **Setup > Settings**, when you check **Disable the helpdesk**, you can edit the notice that users will see when the portal is disabled, including during the update.

Automatic updater

The best way to update for most installations is to use the automatic updater from **Admin > Home** by clicking **Update DeskPRO Now**.

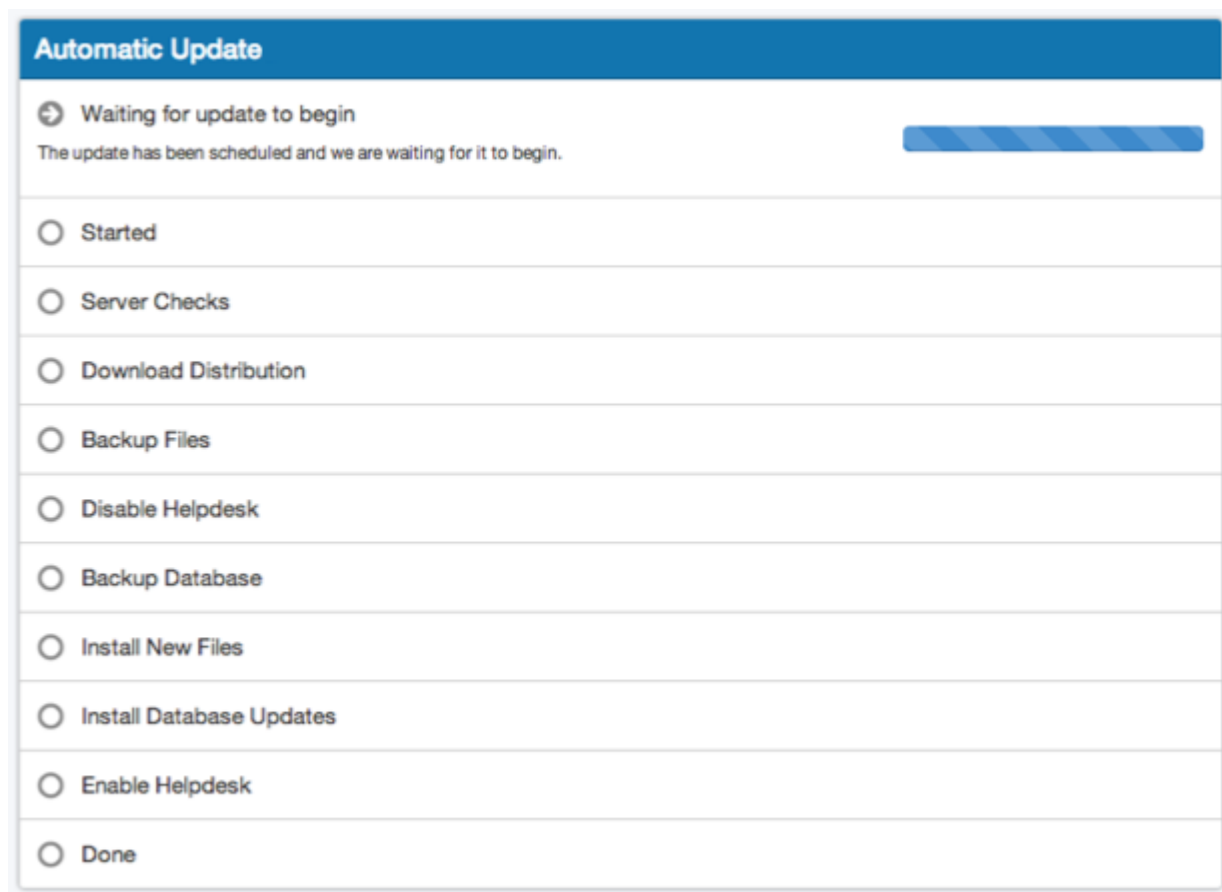


The automatic updater gives you the option to back up the database and/or the DeskPRO source files. You should back them up so you can revert to the previous version in the unlikely event that you encounter a problem.

Warning: If you are updating from a version of DeskPRO v4 before #327, you must carry out a test update before you update your live site, and will need to make some configuration changes. See this [KB article](#) for details.

You can also choose to set a time delay before the update begins. This option will show an alert to any agents who are using your helpdesk, so they know to finish their work. You can use this to schedule the update for a time when the helpdesk is not being used.

The automatic updater uses the cron/Scheduled Task system. This means the cron/Scheduled Task user must have write permissions on all DeskPRO files for the update to work. If this isn't the case, the update will fail.



If the automatic updater fails or the button is not shown, try the [command line update method](#) instead.

If the update process sticks partway through and the helpdesk remains offline, see the section on [Recovering from a stuck update](#).

Locking files during an update

In some cases, you may not want the automatic updater to replace a file. For example, you may have added a custom agent chat notification sound or edited a source code file.

See the article [Preventing certain files from being replaced during an automatic update](#) for how to do this.

Command-line updater

If updating your configuration does not work from the admin interface, you can use an interactive command-line update utility.

1. In the command line or Windows Command Prompt, navigate to the directory where you installed DeskPRO.
2. Run this command:

```
php upgrade.php
```

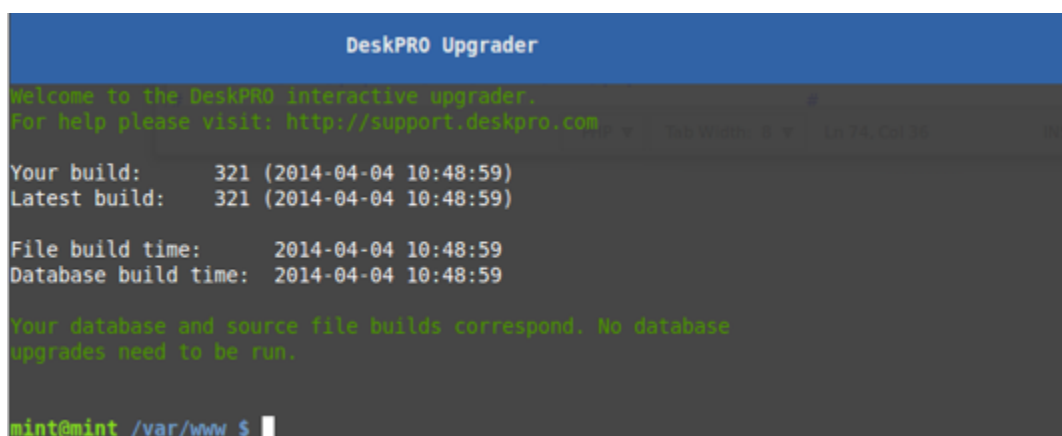
Note that in some cases, you may need to specify the full path to the version of PHP installed on your system, e.g.

```
/usr/bin/php upgrade.php (on Linux)
```

or

```
C:\Program Files\PHP\php.exe upgrade.php (on Windows)
```

3. The interactive command line updater will run:



```

DeskPRO Upgrader

Welcome to the DeskPRO interactive upgrader.
For help please visit: http://support.deskpro.com

Your build:      321 (2014-04-04 10:48:59)
Latest build:   321 (2014-04-04 10:48:59)

File build time: 2014-04-04 10:48:59
Database build time: 2014-04-04 10:48:59

Your database and source file builds correspond. No database
upgrades need to be run.

mint@mint /var/www $

```

The utility will guide you through the process of backing up and updating your helpdesk.

Manually installing updates

If neither the automatic nor the command-line updaters work, you should manually update using the following steps:

1. Download DeskPRO 443 from <https://www.deskpro.com/deskpro.443.zip>
2. Make a backup of all the current files in the directory where you installed DeskPRO before you install updates in case you need to revert back.
3. Move the existing `data/` directory from within the DeskPRO directory to a safe place.
4. Copy your existing `config.php` to a safe place.
5. Extract the contents of `deskpro.zip` you downloaded in step 1, overwriting all existing files.

Note: If your DeskPRO installation uses multiple web servers, repeat steps 2 to 5 above for each web server.

6. From inside the DeskPRO install directory, run the command-line upgrade tool:

```
php cmd.php dp:upgrade
```

The upgrade tool will ask if you want to produce a database backup before applying updates. We highly recommend you answer ‘yes’, in case you need to revert the upgrade.

7. The `data/` directory created in the install process may contain important log information, so take a copy of it.
8. Move the original `data/` directory from step 3 back into the DeskPRO install directory.
9. Move the original `config.php` file from step 4 back into the DeskPRO install directory.

Troubleshooting

Recovering from a stuck update

In rare cases, the automatic update process can get stuck - for example, if your server was forced to reboot during the update. This can leave the helpdesk offline indefinitely.

The helpdesk is put offline by the use of “trigger files” that are created while the update occurs and should be deleted when it’s complete.

Go to the directory where you installed DeskPRO and delete any of the following files that are there:

```
/auto-update-is-running.trigger  
/auto-update-status.php  
/helpdesk-offline.trigger
```

Note: These files may not all exist. You just have to delete any that are still there.

If, after removing the trigger files, DeskPRO complains that it is outdated, this means that you have files on the filesystem that are newer than your database. At this point, it is best to *manually install the update* (see below).

If you are still having trouble, please contact support@deskpro.com attaching these log files from the DeskPRO data folder:

```
/data/logs/upgrade.log  
/data/logs/upgrade-util.log  
/data/logs/error.log
```

Reverting to a previous build

If you’ve updated your helpdesk and run into a problem, you can revert to the previous build you were using.

You must have made a valid database backup *before* applying the update.

1. Disable cron job/Scheduled Task.

The first step is to disable the cron job or Scheduled Task. This ensures that no processes are running on the system while you are in the middle of restoring things.

2. Disable the helpdesk

Next, you should disable the helpdesk itself to make sure no users are trying to use the system.

You can do this by creating a file called `data/helpdesk-offline.trigger`.

(By default, the data directory is in the root of the DeskPRO directory, but if it has been moved, the path will be specified in `config.php` in the `$DP_CONFIG['dir_data']` directive.)

3. Restore DeskPRO files

If you made a file backup during your upgrade, you can find it in `data/backups`, named with the current date in the format `YYYY-mm-dd-files.zip`. You should download the file and extract it, then upload all of the old files to your web server, overwriting any that already exist.

If you did not make a file backup, you can contact support@deskpro.com and ask for the ZIP of a pristine distribution of the files for your previous build. For users looking to revert from the version which added the new admin interface, the build you want is most likely #322 which you can [download here](#).

The process is the same: Download the ZIP from DeskPRO, extract, then upload the files to your server.

Warning: Be sure you do not delete or overwrite your `data/` directory or your `config.php` file. Just to be safe, we recommend you move `data/` and `config.php` out of your DeskPRO directory until after you have replaced all of the files, then move them back.

4. Restore the database

Next you need to restore your database. If you made a database backup during your upgrade, you can find it in `data/backups` named with the current date in the format `YYYY-mm-dd-database.zip`.

Create a new database. This will be used to restore into, leaving your current database untouched. Restore the database. We recommend restoring the database directly from the command-line using the [mysql client](#).

```
mysql -u<user> -p<pass> <your_new_db_name> < /path/to/backupname.sql
```

5. Update config.php

You need to edit `config.php` and change the `DP_DATABASE_NAME` option to use the new database you created above.

6. Re-enable the helpdesk

If any of these files exist, delete them:

- `/auto-update-is-running.trigger`
- `/auto-update-status.php`
- `/data/helpdesk-offline.trigger`
- `/data/tmp/dql.cache`

Enable the cron job or Scheduled Task you disabled in step 1.

11.3 Option A: Upgrade via New Install

The first method of upgrading your helpdesk is to install a brand new copy of DeskPRO, and then move your existing helpdesk to the new installation, and then run the database upgrade script.

Doing it this way means you can configure the server in isolation and make sure everything is set up in an optimal way. You can even use the new installation as a way to test DeskPRO's new features before you upgrade your live helpdesk.

11.3.1 Option A: Upgrade via New Install

1. First, ensure your current helpdesk is using build #443 by using the standard upgrader in your current version.

Read more: [Upgrade to 443 first](#)

2. Next, install a brand new version of DeskPRO. Refer to any of the guides in this manual as listed on the left.

3. Finally, follow the guide [Moving servers](#) to move your existing data into place.
4. If you have a data/encryption-key.bin file, copy it to the config/ directory.

11.4 Option B: Upgrade via configuration

The second method is to use your existing server, but re-configure the necessary components to support the new version of DeskPRO. This will involve updating server software and changing web server configuration.

11.4.1 Option B: Upgrade via Re-Configuration

Download DeskPRO

Download DeskPRO from <https://www.deskpro.com/deskpro.zip>

Extract the Zip and upload it somewhere on your server. Keep the absolute path of the files handy; the next section will walk you through configuring your web server.

Note: Extract to a NEW directory on your server. Do NOT extract to your existing DeskPRO directory.

Prepare your server

IMPORTANT: The older DeskPRO #443 does NOT support PHP7. This means that when you update your server with a new version of PHP, your live helpdesk will stop working. So you should only start this process when you are sure you are ready to move to the new system. If you want to test the new system before committing to it, we recommend you [upgrade via a new install](#) instead.

Refer to the guide for your web server.

Re-configure nginx Server

Requirements

- Ensure PHP \geq 5.5 (ideally PHP 7) is installed and ready to use.

Configuration

You need to configure nginx with the following `server` block:

- Near the top of the server block, you should replace or update the `server_name` so it targets your actual domain.
- Replace `$fastcgi_pass` with your php-fpm host:port. If you're using a socket, make sure to prefix the path with `socket:`
- Replace `$deskpro_www_root` with the absolute path to your DeskPRO files.

```
server {
    server_name support.example.com;
    listen 80;

    set $fastcgi_pass 127.0.0.1:19000;
    set $deskpro_www_root /path/to/deskpro/www;
```

```

root $deskpro_www_root;

proxy_buffer_size 128k;
proxy_buffers 4 256k;
proxy_busy_buffers_size 256k;

fastcgi_buffer_size 128k;
fastcgi_buffers 4 256k;
fastcgi_busy_buffers_size 256k;

location / {
    index index.php;
    try_files $uri /index.php?$query_string;
}

location ~ /\.php$ {
    include fastcgi_params;
    fastcgi_pass $fastcgi_pass;
    fastcgi_split_path_info ^(.+\.php)(/.*)$;
    fastcgi_param SCRIPT_FILENAME $deskpro_www_root/index.php;
}

location ~ /assets/[a-zA-Z0-9_\-\.\.]+/(pub|web)/.*?$ {
    add_header 'Access-Control-Allow-Origin' '*';
    add_header 'Access-Control-Allow-Credentials' 'true';
    add_header 'Access-Control-Allow-Methods' 'GET, POST, OPTIONS';
    add_header 'Access-Control-Allow-Headers' 'DNT,X-Mx-ReqToken,Keep-Alive,User-Agent,X-Requested-With,If-Modified-Since,Cache-Control,Content-Type';

    if ($request_method = 'OPTIONS') {
        add_header 'Access-Control-Max-Age' 1728000;
        add_header 'Content-Type' 'text/plain charset=UTF-8';
        add_header 'Content-Length' 0;
        return 204;
    }
}
}

```

Verify and Check Requirements

After you have made the necessary server changes, load the following URL to test it:

- http://your-url/__serverinfo/check_requirements

You should see a simple page load that will show you if the server meets the minimum requirements. If your server is ready, you will see a message in bright green stating “All checks passed successfully. Your system is ready to run DeskPRO”. If you see that message, you can proceed to the next step.

Re-configure Apache Server

Requirements

- DeskPRO now requires the `mod_rewrite` module. You must install/enable this module before you proceed.
- Ensure that the “www” sub-directory of DeskPRO has `AllowOverride All` enabled (which enables the `.htaccess` file).
- Ensure PHP `>= 5.5` (ideally PHP 7) is installed and ready to use.

Configuration

1. Modify your current configuration to change the paths:

- Old path: `/path/to/deskpro`
- New path: `/path/to/NEW_deskpro/www`

So that is: Change the old path to the “www” sub-directory of the new DeskPRO directory.

Paths may appear in multiple locations depending on how you have Apache configured. Most often these are:

- `DocumentRoot`
- `<Directory ...>` or `<Files ...>`

2. Ensure that the “www” sub-directory includes `AllowOverride All`. If you don’t see this anywhere in your current configuration, add it with a block like this:

```
<Directory /path/to/NEW_deskpro/www>
    AllowOverride All
</Directory>
```

Example

Here is a minimal example `<VirtualHost>` block:

```
<VirtualHost *:80>
    ServerName www.example.com
    ServerAdmin your@email.com
    DocumentRoot /path/to/deskpro/www

    <Directory /path/to/deskpro/www>
        AllowOverride All
    </Directory>
</VirtualHost>
```

Verify and Check Requirements

After you have made the necessary server changes, load the following URL to test it:

- `http://your-url/__serverinfo/check_requirements`

You should see a simple page load that will show you if the server meets the minimum requirements. If your server is ready, you will see a message in bright green stating “All checks passed successfully. Your system is ready to run DeskPRO”. If you see that message, you can proceed to the next step.

Re-configure IIS server

Prepare

We suggest you create a NEW directory at `C:\deskpro` for DeskPRO.

Download and Extract

1. Download the newest version of DeskPRO from <https://www.deskpro.com/deskpro.zip>
2. Extract this directly into your `C:\deskpro` directory.

Requirements

- DeskPRO now requires the URL Rewrite module. You can install this via the [Microsoft Web Platform Installer](#), just search for “URL Rewrite”.

- Ensure PHP \geq 5.5 (ideally PHP 7) is installed and ready to use.

Change Site Physical Path

Using the IIS Manager, right click on your Site in the left navigation sidebar and select `Manage Website > Advanced Settings`.

From the Advanced Settings window, edit the `Physical Path` to be `C:\deskpro\www`.

Verify and Check Requirements

After you have made the necessary server changes, load the following URL to test it:

- `http://your-domain/___serverinfo/check_requirements`

You should see a simple page load that will show you if the server meets the minimum requirements. If your server is ready, you will see a message in bright green stating “All checks passed successfully. Your system is ready to run DeskPRO”. If you see that message, you can proceed to the next step.

If you have missing PHP extensions, you can use the PHP Manager from within IIS Manager to enable them.

Going forward, we will refer to two directory `OLD_deskpro` which is your current installation, and `NEW_deskpro`, which is the path of the NEW DeskPRO files.

The idea here is that you are leaving your old installation in place; those files are not being deleted or touched at all. After you are fully moved over to the new version you can delete them if you wish.

File Permissions

Make sure that your web server can write to the `var/` directory *and all sub-directories*.

Windows users, you may need to manually change permissions yourself. See: [https://technet.microsoft.com/en-us/library/cc754344\(v=ws.11\).aspx](https://technet.microsoft.com/en-us/library/cc754344(v=ws.11).aspx)

DeskPRO Config Files

Set Config

New configuration files are used with the new version. Use the following command to generate a set of new config files:

```
# Linux
cd /path/to/NEW_deskpro
/path/to/php bin/console install:fresh-config

# Windows
cd "C:\path\to\NEW_deskpro\"
"C:\path\to\php.exe" bin\console install:fresh-config
```

After config files are generated, you need to manually edit two files:

- `config/config.database.php` - Enter your database details in here
- `config/config.paths.php` - Enter paths to php, mysql and mysqldump here

Finally, if you have a `data/encryption-key.bin` file on your old server, copy it to the `config/` directory.

Move blobs

If you have blobs stored in the filesystem, you will need to move them to the new DeskPRO directory:

```
# Linux
mv /path/to/OLD_deskpro/data/files/* /path/to/NEW_deskpro/attachments

# Windows
move "C:\path\to\OLD_deskpro\data\files\*" "C:\path\to\NEW_deskpro\attachments"
```

Perform Upgrade

Now you must update your database for the new version. Before you do this make sure you have made a database backup! If you don't make a backup and there is a problem during the upgrade, there is NO WAY to reverse it. Make a backup.

From the command-line, run the upgrader script:

```
# Linux
cd /path/to/NEW_deskpro
bin/console dp:upgrade

# Windows
cd "C:\path\to\NEW_deskpro"
"C:\path\to\php.exe" bin\console dp:upgrade
```

Depending on the size of your database, this may take a long time. The process is completely automated and can be left unattended.

Update Cron

Update the path in your cron/scheduled task. For example, the paths become:

```
# Linux
/path/to/php /path/to/NEW_deskpro/bin/cron

# Windows
"C:\path\to\php.exe" "C:\path\to\NEW_deskpro\bin\cron"
```

Done!

Now you're all done! You can re-enable your helpdesk from Admin > Setup > Settings.

UPGRADE FROM V3

If you have a DeskPRO installation from v3 or earlier (i.e. you last updated several years ago), you will need to follow a special process to upgrade to a modern (v4) DeskPRO version.

This is an example of what the v3 interface looks like:

The screenshot shows the 'Configuration' tab of the DeskPRO v3 settings interface. The page has a top navigation bar with tabs: General Settings, Ticket Settings, Email Settings, Knowledgebase, Email Gateway Settings, and Advanced Settings. Below this is a sub-navigation bar with tabs: Configuration, Users, Dates, Troubleshooter, Language, and Cache CSS. The main content area is titled 'Configuration : These settings control your DeskPRO configuration'. It contains four settings sections, each with a description, a text input field, and a 'Revert to Default' button. The settings are: 'Your Site URL' (http://site/), 'The URL to DeskPRO' (http://site/deskpro/), 'Your Site Name' (Site), and 'Helpdesk Enabled' (Yes: ☒ No: ☐). At the bottom of the configuration area is an 'Update' button.

Configuration : These settings control your DeskPRO configuration		
Your Site URL This setting specifies the URL to your company's main web site. This is not DeskPRO's URL, but just a link of convenience to make available to your users. They can click this link to exit your support pages and return here. This can be any link you desire; it does not affect DeskPRO's behaviour.	<input type="text" value="http://site/"/>	<input type="button" value="Revert to Default"/>
The URL to DeskPRO This setting specifies the base URL your users will use to access your DeskPRO installation. This is used to generate links within DeskPRO's interface. In most cases, the installation and upgrade scripts' auto detected value are correct. The url must end with a trailing slash.	<input type="text" value="http://site/deskpro/"/>	<input type="button" value="Revert to Default"/>
Your Site Name This setting specifies the human-readable name DeskPRO to your users.	<input type="text" value="Site"/>	<input type="button" value="Revert to Default"/>
Helpdesk Enabled Set yes to turn the helpdesk on. If the helpdesk is not turned on, users will not be allowed to enter the help desk; instead they will be shown the Help desk disabled message. The administrator and tech interfaces will still be active. If you have POP3 mail collection setup, mail will not be processed. Mail sent by PIPE will be logged to the database awaiting the turning on of the helpdesk.	Yes: <input checked="" type="radio"/> No: <input type="radio"/>	<input type="button" value="Revert to Default"/>

The process of upgrading from v1, v2 or v3 to DeskPRO v4 is done using a completely automated tool. The process is different from a normal v3 upgrade.

Warning: Be sure to download the [special v4 version](#). You must use that specific version of DeskPRO to run the import process.

The upgrade process installs DeskPRO v4 into a new database and directory, leaving your old v3 DeskPRO installation intact.

The v4 upgrade process runs on v3 databases of at least version 3.3 (from 2008-09-18). If you are using v1 or v2, or an older version of v3, then the upgrade tool will automatically upgrade your helpdesk to v3.3 before proceeding with the v4 upgrade. If you are already using v3.3 or newer, then your old v3 database is only used as a read-only database and the v4 upgrade will not write any changes to it.

12.1 Preparing to upgrade

DeskPRO v4 has new server requirements. Specifically:

- The minimum PHP version is now v5.3.9 (up from v5.0).
- The minimum MySQL version is now 5.0 (up from 4.1).
- GD (or imagick) is now required.
- OpenSSL is now required.
- iconv is now required.

DeskPRO will automatically check all of the server requirements when you attempt to upgrade.

12.1.1 Switch email piping to POP accounts

If you are currently using the piping mechanism in DeskPRO v3, convert your email accounts into POP3 accounts before upgrading.

12.1.2 Improving import performance

You can enable a `fast_import` option under **DeskPRO Import Settings** in your `config.php` to skip processing some unnecessary data (the KB search log, tech timelog, and data saving of unsupported tables).

```
$DP_CONFIG['import'] = array(
    //...
    'fast_import' => true,
    //...
);
```

You can also improve performance by moving file attachments from the v3 database to the filesystem. This will reduce the number of queries needed to copy files from the database.

You can move v3 files to the filesystem from **Admin > Settings > File Storage** or in `config.php` add:

```
store_attachment_files => true
```

If you have a very large number of tickets in your helpdesk and find the import is still running too slowly, see the [Upgrading large v3 databases](#) section for more ways to improve performance.

12.2 Running the upgrade

If you want to test that the upgrade process works, you can run the upgrade and leave your v3 helpdesk running as it is. Once you are ready to move for good, you should run the upgrade again.

When you are ready to switch permanently, you should disable the v3 helpdesk (from **Admin > Settings > Modify Settings**) and disable the v3 cron jobs.

1. Download the [special version of v4 DeskPRO including the importer](#). You must use this version.
2. Extract the files and upload them to a new, empty directory on your webserver (*not* your existing v3 directory). Make sure the `/data` directory inside is writable by the webserver.

3. Create a new empty MySQL database for v4.
4. In the new v4 directory, copy `/config.new.php` to `/config.php`.
5. Edit `/config.php` with a text editor and insert your new database details near the top.
6. Further down the file, find the section titled “DeskPRO Import”, enter your old database details.

Now proceed to the section below which matches your platform:

On Linux/BSD:

7. Use SSH to connect to your server, or if you have a local install, open a new terminal window.
8. Change to the DeskPRO v4 directory. For example: `cd /var/www/`.
9. Execute the command: `php import.php` (you may need to specify the path to your PHP binary.)
10. Follow the on-screen instructions.
11. Log into DeskPRO v4 using your browser.
12. Schedule a cron task to run `/cron.php` every minute.

You would typically do this by editing your crontab file to add a line similar to this: `* * * * * /usr/bin/php /var/www/deskpro/cron.php`
13. Back up the old DeskPRO v3 files and then delete them from the v3 install directory.
14. Move the new DeskPRO v4 files to the v3 install directory.
15. Enable your imported email accounts in **Admin > Tickets > Email Accounts**.
16. You are now on an outdated version of v4. Update to the latest version using the [command-line updater](#) or following the [manual update process](#).

On Windows:

7. Run `cmd.exe`.
8. Go to the DeskPRO v4 directory. For example: `cd "C:\inetpub\deskpro"`.
9. Execute the command: `"C:\wamp\bin\php\php5.3.0\php.exe" import.php` (using the location where PHP.exe is installed on your server).
10. Follow the on-screen instructions.
11. Log into DeskPRO v4 using your browser.
12. Run `/schedule.bat` from the new install folder to create a scheduled task that runs `cron.php` every minute (or use Task Scheduler to do it manually).
13. Back up the old DeskPRO v3 files and then delete them from the v3 install directory.
14. Move the new DeskPRO v4 files to the v3 install directory.
15. Enable your imported email accounts in **Admin > Tickets > Email Accounts**.
16. You are now on an outdated version of v4. Update to the latest version using the [command-line updater](#) or following the [manual update process](#).

12.3 Upgrading large v3 databases

Upgrading to v4 involves copying all of your data from a v3 database into a fresh v4 database. This is a fairly intensive task, and if you have a very large database there will be millions of queries being executed and lots of data being moved around.

12.3.1 Run the upgrade tool on a separate server

Since the process involves so many queries (both read and write queries), you should not run the upgrade tool on a live server. Ideally you want a spare server that is doing nothing but running the upgrade tool. This way, the upgrader isn't competing for resources with other services you might be running.

12.3.2 Store attachments in the filesystem

To avoid large blobs being sent to and from the database, you should make sure you have the filesystem storage mechanism enabled for your attachments. In your `config.php` file make sure under the "import" section you have the following option enabled:

```
store_attachment_files => true
```

12.3.3 Make sure your server has lots of memory

The best way to improve performance for large databases is to ensure MySQL has lots of memory at its disposal.

Use MySQL with a ramdisk for best performance; alternatively, use MySQL with an SSD.

12.3.4 Tune MySQL's INNODB Settings

MySQL's default configuration may not be suitable for your server. There is no perfect combination of settings that will work for everyone; it will take some experimentation. There are many guides available which explain MySQL performance tuning. One useful resource is the [MySQL Performance Blog](#).

Further reading: [InnoDB Performance Optimization Basics](#) on the MySQL Performance Blog.

12.3.5 Importing very large v3 databases with minimal downtime

When running the v3 to v4 importer, your helpdesk has to be disabled for the duration of the import to prevent data corruption (e.g. a half-inserted ticket).

If your helpdesk has a very large database, the import process may take a long time and the downtime may be unacceptable. To avoid this, you can use a two- stage import to reduce downtime to a matter of minutes rather than hours.

You must take a snapshot of the live database that the importer will run on. See the [MySQL manual](#) for one possible method of duplicating your database.

Stage 1: Running the import

The first stage is running the import from start to finish. Refer to our "Upgrading to DeskPRO v4" guide. The instructions are exactly the same, except make sure you run the import against your duplicated database you just made.

Stage 2: Running the rerun tool

Now that you have a completed import, you need to update the database with changes made on your live helpdesk since the import first ran. For example, your live helpdesk will have new tickets and new replies and the v4 database will need to be updated with that new data.

Disable your v3 helpdesk. Now that we are preparing to go live with v4, we need to make sure the v3 helpdesk is no longer processing any new tickets. Edit your v4 /config.php file and change the database information under "DeskPRO Import Settings" to point to your live v3 database. Your live database will have the most up to date data and this is the data we need to process now. From the command-line, run the import tool the rerun flag:

```
/usr/bin/php import.php --rerun
```

Since the rerun is only processing new data, the dataset is much smaller and will complete very quickly. As soon as the rerun finishes, you can proceed to put the v4 helpdesk “live”.

BACKUPS

To take a backup or snapshot of all your helpdesk data, you need to copy **both** the contents of the MySQL database **and** all files within the DeskPRO install folder.

As a DeskPRO sysadmin, you must set up a regular process to do both of these backups. Otherwise, you risk losing all your helpdesk data.

13.1 MySQL backup

To back up the MySQL database, use the `mysqldump` tool to create a backup file.

`mysqldump` is a standalone tool which is usually installed automatically when you install MySQL.

The recommended `mysqldump` command to use is:

```
mysqldump --opt -Q --hex-blob -u 'your user' -p'your password' your_db_name >
deskpro-backup.sql
```

(Note that there must NOT be a space between the `-p` switch and your password.)

We recommend that you do this with the command line version of `mysqldump`, not through `phpmyadmin`.

Of course, you should then store the backup file on a separate server, secured from unauthorised access.

Note: You do not need to disable the helpdesk to do this backup.

Warning: This database backup is not enough to restore your helpdesk. You must also do the file backup below. Both are required for recovery.

13.2 File backup

Copy all the files within the DeskPRO install directory with any file backup tool.

Note: Alternatively, you can back up just the `/attachments` directory, which contains just your file attachments/binary file data.

However, doing this can make the process of restoring to a fully working helpdesk take longer because you won't have the DeskPRO source files. You will need to re-download and re-install DeskPRO before a restore would be possible.

13.3 Restoring from backup

To restore from a backup:

1. Install the webserver and MySQL.
2. Unzip the files you backed up into the desired DeskPRO install folder (or install a fresh copy of DeskPRO, then replace the contents of the /data directory with the file backup).
3. Create a new empty database within MySQL.
4. Restore the database from the database backup into the new database e.g. `mysql -u<user> -p<pass> <your_new_db_name> < /path/to/backupname.sql`
5. Edit config.php to point to the new database name.
6. Create the cron/Scheduled Task as per the installation instructions for your platform.

TROUBLESHOOTING

This chapter collects some troubleshooting functions that are possible on DeskPRO On-Premise using the command line or config file settings.

All the commands below should be run from the directory where you installed DeskPRO.

If you're running DeskPRO using one of our VM images, the install folder is
`/usr/share/nginx/html/deskpro.`

We're assuming that your command line environment is set up so that php runs the php executable: if not, you may need to specify the path to php e.g: `/usr/bin/php` or `C:\Program Files\PHP\PHP5.3.0\php.exe.`

14.1 Token login

If you are unable to log in to your helpdesk (for example, you've disabled DeskPRO Authentication and the alternative authentication system you were using isn't working), you can use this token-based login method to get access.

Run:

```
php cmd.php dp:login-token youremail@example.com
```

(replacing `youremail@example.com` with the email address of your admin account).

If you're not sure what email address you used for your admin account, run:

```
php cmd.php dp:agents
```

 to see a list of all agents.

The command will output a list of Quick Login URLs for each DeskPRO interface. You can access the helpdesk just by visiting them. They will only be valid for 5 minutes.

If IP whitelisting is enabled and you are accessing from an unconfirmed IP, the token login method will not work. See the section [Bypass IP whitelisting](#) below.

14.2 Manage logins from command line

In some situations, you may end up unable to log in to the admin interface.

This may be because you forget your password, or because you've lost admin privileges on your account.

You can manage agent passwords and grant admin/billing access from the command line.

Navigate to the DeskPRO install folder in the terminal/Command Prompt window.

Run

```
php cmd.php dp:agents
```

to see a list of all agents.

You can then reset a password with:

```
php cmd.php dp:agents reset-password
```

or grant admin privileges with:

```
php cmd.php dp:agents make-admin
```

DeskPRO will prompt you for the email address of the agent.

Run `php cmd.php dp:agents --help` to get full details of what this command can do.

14.3 Bypass IP whitelisting

DeskPRO's IP whitelisting feature requires you to confirm your identity by clicking on a link in an email when you access the helpdesk from a new IP address.

If email delivery from your helpdesk stops working after you enable IP whitelisting, you can end up locked out. The token login method will not work in this situation.

You can manually whitelist an IP using:

```
php cmd.php dp:agents whitelist-ip
```

You will be prompted to enter the email address of an agent and the IP to whitelist.

You can disable whitelisting altogether by entering this line in your `config.php` file:

```
$DP_CONFIG['SETTINGS'] = array('agent.ip_security.enabled' => false);
```

Once you have regained access, remember to remove this line or comment it out before you try to turn IP whitelisting back on.

14.4 Enable cron logging

DeskPRO uses a cron job or Windows Scheduled Task to carry out scheduled tasks that need to happen on a regular basis - for example, checking for new emails every minute.

You can see these from the admin interface at **Server > Scheduled Tasks**.

If you find that cron/Scheduled Task is crashing and you want to investigate, you can enable logging by adding this to the `config.php` file:

```
$DP_CONFIG['debug']['write_cron_logfile'] = 1;
```

When cron runs, debug information will be appended to `data/logs/cron.log`

Warning: Since scheduled tasks run so often, this file can get large quite quickly. You should either rotate this file, or remember to disable logging once you've solved the problem.

14.5 Manually run cron task

As an alternative to enabling logging, you can disable the cron job or Scheduled Task, then run it manually.

On Linux/Unix, to disable the cron job, go to the file which defines the cron job (usually `/etc/crontab`, but `/etc/cron.d/deskpro` if you're using a VM image) and comment out the line which mentions `cron.php` by adding `#` at the beginning of the line.

On Windows, disable the Scheduled Task in Task Scheduler.

To run the cron job manually, use:

```
php cron.php --verbose -f
```

or on Windows:

```
php.exe cron.php --verbose -f
```

14.6 Manually run email processing

Sometimes you may want to manually run incoming email processing, for example, to debug connection problems.

To do this on Linux/Unix:

```
php cron.php --verbose -f --job=process_email_gateways
```

To do this on Windows:

```
php.exe cron.php --verbose -f --job=process_email_gateways
```

The `--verbose` flag means that you will receive a full log of the session as DeskPRO connects to the email server and processes emails.

14.7 Enable outgoing email logs

You can enable more detailed logging of all outgoing email sent, including the transaction between DeskPRO and the SMTP server and copies of the raw email.

This can be useful to diagnose intermittent connection problems.

Edit the `config.php` file in your install folder and add the following lines to the bottom:

```
$DP_CONFIG['debug']['mail']['save_to_file'] = true;
$DP_CONFIG['debug']['mail']['enable_mail_log'] = true;
```

Make sure `data/logs` in your install folder is writable, and the directory `data/logs/emails` exists and is writable.

The log file is `data/logs/mailer.log`, and a raw copy of the email itself will be saved to `data/logs/email`.

Be sure to rotate these logs regularly as they will grow rapidly. We recommend that you disable this option once you are finished debugging.

MOVING SERVERS

Moving DeskPRO to a new server involves installing a fresh version of DeskPRO on the target server first, and then moving your database and attachments over.

15.1 Install a fresh copy of DeskPRO

Note: This step is run on your NEW server

The first step is to install a fresh version of DeskPRO using any of the methods described in this manual. Use the navigation menu to the left to find the guide that suits you best.

15.2 Reset DeskPRO to prepare it for your existing database

Note: This step is run on your NEW server

You now have a simple, initial DeskPRO running on this server. Since you won't actually be using this temporary helpdesk, you **MUST** delete it.

From the command-line:

```
cd /path/to/deskpro
/path/to/php bin/console install:clean --keep-config

# Example
cd /opt/deskpro
/usr/bin/php bin/console install:clean --keep-config

# Example on Windows
cd C:\deskpro
"C:\Program Files\PHP\7.0\bin\php.exe" bin\console install:clean --keep-config
```

Running this command will completely delete the current DeskPRO installation and prepare it to accept the existing installation that you want to move here.

15.3 Disable your helpdesk

Note: This step is run on your OLD server

From Admin > Setup, turn off your helpdesk so no new tickets or other work is done on it.

15.4 Export your MySQL database

Note: This step is run on your OLD server

Next, you need to move your MySQL database. You can do this by first making a database dump on the old server, and then importing the dump on the new server.

```
# Old server: Make a backup
mysqldump --opt -Q --hex-blob -u<user> -p<pass> <dbname> > db-backup.sql
```

15.5 Move your MySQL database

You now need to move the database dump (db-backup.sql) from your old server to your new server (e.g. via SFTP). You may wish to gzip/zip the export to make the transfer quicker.

15.6 Import your MySQL database

Note: This step is run on your NEW server

Warning: You now need to import the dump into the empty database you cleaned in the 2nd step. Please check that the database is completely empty (i.e. no tables at all). If there are any tables, the process will fail.

```
# And on the new server, import the data into a new database:
mysql -u<user> -p<pass> <database> < db-backup.sql
```

Note: You can confirm the database username, password and database name inside the /config/config.database.php file.

Note: If you have a separate database server, you can simply copy the /config/config.database.php file from your OLD server to your NEW server.

15.7 Update config/ files

If you have imported your database into a different MySQL database than the one you have defined in config/config.database.php, then you need to edit that file and set the proper database name.

If you have a data/encryption-key.bin file on your old server, copy it to the config/ directory.

15.8 Copy attachments/

Note: This step is run on your OLD & NEW server

If you have attachments/blobs stored in the filesystem, you will need to move or copy the `attachments/` directory from the old server to this new one.

If you are not storing blobs in the filesystem, you can skip this step.

15.9 Run database upgrade

Note: This step is run on your NEW server

The version of DeskPRO you had on your old server may not be the same as the newest version you just downloaded. You need to run the following command to make the system update your database so its using the right schema:

```
cd /path/to/deskpro
/path/to/php bin/console dp:upgrade

# Example
cd /opt/deskpro
/usr/bin/php bin/console dp:upgrade

# Example on Windows
cd C:\deskpro
"C:\Program Files\PHP\7.0\bin\php.exe" bin\console dp:upgrade
```

15.10 All Finished

You have now migrated. Login to DeskPRO and confirm the interface is functioning and there are no errors in the admin interface. You can then disable your old server.

SECURING ON-PREMISE

The standard security precautions for any web-based software apply to DeskPRO On-Premise.

This section will outline several recommended methods that add extra security to your DeskPRO helpdesk.

16.1 Securing file permissions

This section describes the best way to secure your filesystem.

1. Create a new `deskpro` user on your server.
2. Change the owner of all files to the `deskpro` user. For example, on Linux:

```
chown -R deskpro:deskpro /path/to/deskpro
```

And make sure to disable write permission on files and directories:

```
find . -type d -print0 | xargs -0 chmod 755
find . -type f -not -path "*/bin/*" -print0 | xargs -0 chmod 644
```

3. The web server still needs to write to a few specific directories, so you need to make them writable:

```
chmod -R 0777 /path/to/deskpro/attachments /path/to/deskpro/var
```

Note: If you want to secure permissions even more, you can use groups or ACL's to make it so only `deskpro` and your web server user (e.g. `www` or `nobody`) can write to these directories, instead of world like we show here.

4. Next, you need to re-configure scheduled tasks for automatic updates. Since your regular task is now running as a user who cannot modify the filesystem, it means the updater won't work; it will cause a permission error.

So you need to create a new task that only performs the update task, and you need to run it as the `deskpro` user you just created.

- Edit the scheduled task you already have configured on your server. The command will be for `bin/cron`. Change it to `bin/cron --no-auto-updater`
- Create a NEW scheduled task that runs minutely that is run by your `deskpro` user. This time, create the task `bin/cron --auto-updater`

For example, here's what a `/etc/crontab` might look like:

```
* * * * * www-data /opt/deskpro/bin/cron --no-auto-updater
* * * * * deskpro /opt/deskpro/bin/cron --auto-updater
```

16.2 Server access

Ensure your various services (MySQL, mail, Elasticsearch etc) are not accessible from the internet.

For example:

- Enable the firewall and only open specific service ports
- For internally-used servers like MySQL, only allow access from machines that require it.
- MySQL's own account management features allow you to specify specific hosts on user accounts. For example, if MySQL is only used locally on the same server as DeskPRO, you should create a user 'deskpro'@'localhost'. The localhost host means that user can only be used locally.

16.3 Enable IP Whitelisting

Enable [IP whitelisting](#) in **Admin > Agents > Settings**.

16.4 Enable mail password encryption

Enable [encrypted mail passwords](#) from **Admin > Server > Encryption**.

16.5 Monitoring

Install intrusion-detection software such as [OSSEC](#) (see also [this useful guide](#)).

This class of software helps you monitor files and log files so you can be notified when something changes.

16.5.1 Encrypting mail passwords

User, agent and admin account passwords are secured storely in the DeskPRO MySQL database using [one-way hashing](#). This means that DeskPRO doesn't store the original passwords at all; even if a malicious attacker could inspect the database, they can't recover the passwords.

However, the passwords for ticket/outgoing email accounts cannot be stored in this way; DeskPRO needs access to the original password to retrieve mail from the server.

This means that if an attacker accessed your helpdesk's MySQL database (or a backup), they could recover your email account credentials from the database.

To prevent this, you can choose to store an encrypted version of your email passwords. The encryption key will be stored within your DeskPRO install directory in `data/encryption-key.bin` (and must stay there for email checking to work).

To enable encryption, go to **Server > Encryption**, confirm you have read the warnings, then click **Generate Key File & Enable Encryption**.

Warning: If you lose the encryption key file, you won't be able to recover the mail passwords.

Warning: You must back up the key file in a secure manner. Remember, you need to back up all the files in the data folder as well as the MySQL database. If you store the encryption key with your database backups, there's no gain in security.

Enabling this will **not** prevent an attacker who can access both the key file and the database from recovering the passwords.

Disabling password encryption

To disable encryption:

1. Create a file within your DeskPRO install data directory called `can-disable-encryption.txt`. (The content of the file doesn't matter; this step is to prove that you have direct filesystem access.)
2. Go to **Server > Encryption** and click **I have created the file**.

PERFORMANCE & SCALING

For most helpdesks, DeskPRO is fast and reliable when properly configured, even on relatively modest hardware or budget virtual private server hosting.

This chapter explains how to increase performance and how to scale for large helpdesks with 100+ agents.

17.1 Performance

If you are experiencing slow performance of the agent UI, consider the following:

1. Check **Server > Error Logs** for any repeated errors that are impacting performance. Note that while the DeskPRO Error Log is specific to DeskPRO, the PHP error logs will include PHP errors from any other PHP applications you are running on the server.
2. Ensure you have updated to the latest build of DeskPRO. If you are using an old version, a newer build will include many performance improvements.
3. Be sure to configure your helpdesk to use [Elasticsearch](#), so that user and agent searches are handled by this specialist search technology, instead of the database. See the end of the installation chapter for your platform in this manual for details.
4. Make sure you have switched from storing binary files in the MySQL database to either filesystem storage or Amazon S3 cloud hosting. See the sections on switching to *switching to filesystem storage* or *switching to Amazon S3 storage* for details.
5. If you are using a version of PHP below 5.5, either upgrade to 5.5, or install a supported **PHP accelerator** (software which caches compiled PHP code to improve performance):

- [APC](#) (Alternative PHP Cache) for Apache or nginx
- [Windows Cache Extension](#) for IIS

Note that these are *not* required with PHP 5.5 or above, which uses its own OPcache accelerator.

6. If you are using PHP 5.5 or above with OPcache, see the [recommended OPcache settings](#).
7. On Windows, ensure that you edit the DP_DATABASE_HOST value in `config.php` to make it '127.0.0.1', not 'localhost'.
8. If you have a very large number of resolved tickets (over a million) and the agent interface is slow, enable *ticket archiving*.
9. If you are running DeskPRO on a virtual machine, give the VM the same number of processors that the physical machine it runs on actually has.
10. If you have a very busy helpdesk with many agents, you may want to consider separate webserver and database servers, or using multiple load-balanced nodes.

11. Some helpdesks may benefit from increasing the PHP memory limit. If you are getting ‘Allowed memory exhausted’ errors, or getting slow sync performance with Active Directory/LDAP/database Auto Sync, increase the `memory_limit` value in `php.ini` to “256M”.
12. See our Knowledgebase article [Configuring read-only database for expensive queries](#) if you find certain operations (like complex reports) slow down the whole helpdesk.
13. If your agents are using low-end laptops or tablet devices (e.g. Microsoft Surface) to access the helpdesk, check to see if performance is slow with a high-end laptop or recent desktop. Some less powerful devices can’t run the agent UI well.

17.2 Proxies & load-balancing

DeskPRO has a proxy mode which tells it to trust IP addresses forwarded in HTTP headers.

You should enable proxy mode in these cases:

- Your network configuration requires that you access DeskPRO through proxy servers.
- You are running DeskPRO on multiple load-balanced nodes to increase availability.

To enable proxy mode, in the DeskPRO `config.php` edit the following line:

```
$DP_CONFIG['trust_proxy_data'] = false;
```

You must specify the IP addresses or address ranges of trusted proxies using [CIDR notation](#):

```
$DP_CONFIG['trust_proxy_data'] = array(
    '192.168.1.83',           // whitelist this specific IP
    '192.168.0.0/24'         // whitelist this range (192.168.0.0 - 255)
    '@/etc/proxy_list.php', // read addresses from file (as PHP array)
);
```

If this is not configured correctly, it may appear that all users have the same IP address (the address of the proxy server).

For DeskPRO to function properly, the servers it interacts with must be sending proper headers with each request:

- **X-Forwarded-For:** The IP address of the user.
- **X-Forwarded-Host:** The real hostname the user requested.
- **X-Forwarded-Port:** The real port the user requested (usually 80 or 443 for SSL)
- **X-Forwarded-Proto:** The protocol (HTTP or HTTPS) of the user request

17.3 Ticket archiving

Once a ticket has been marked resolved, most helpdesks can leave it that way. There is no need to delete resolved tickets.

However, if your helpdesk has a very large number of old tickets (over a million), you can greatly improve agent interface performance by enabling **ticket archiving**.

Archiving automatically moves resolved tickets to a special **archived** status which means they don’t show up in the main filters.

Agents can still view archived tickets using the **Archived** filter, and find them from the Quick Search bar or by carrying out an advanced search and including archived status.

Agents can change archived tickets back to another status if they have the correct permission.

To enable archiving, go to **Tickets > Statuses > Archived** and check **Enabled**.

Enabled ☒

Auto-Archive Automatically move resolved ticket to the archive after
5 days ▼

Reset Search Index When archiving is enabled, DeskPRO uses a special optimized search index that filters are run off of. This allows the system to improve performance of filters.
If there was a problem with the helpdesk such as an error or database problem, it is possible the search index became misaligned and may need resetting.

[✖ Reset Search Index](#)

[Save](#)

The **Auto-Archive** setting controls how long DeskPRO leaves a ticket as ‘resolved’ before setting it to ‘archived’.

The **Reset Search Index** button is used to resolve certain very rare errors and database issues that can happen when archiving is enabled. There is no need to use it unless you are directed to do so by a DeskPRO technical support agent.

17.4 High Availability

To achieve high availability with DeskPRO, you need to create a server infrastructure capable of handling failure. This is not really a DeskPRO problem more than a general architecture problem.

There are four main places where you need to handle redundancy for HA. We’ll go over each in this document and provide links to further reading.

17.4.1 Database

To make MySQL highly available, you need some kind of replication and failover strategy.

The two most common options:

1. MySQL’s own [master-slave replication](#) is easy to configure and well understood. When a failure occurs, you need a way to promote a slave to be the new master. There are many possible solutions to this, such as [mysql-failover](#).
2. There is also a more automated clustering technology called [Galera Cluster](#) which aims to automate some tedious aspects of MySQL replication and failover, and is a more “all in one” solution which doesn’t require as

much custom scripting to handle provisioning and failover. Note that although Galera is a multi-master cluster, DeskPRO itself does not yet support multi-master setups. If you choose to use Galera, please refer to [this document](#) for instructions.

When a failure occurs and a new master is chosen, you need a way to update DeskPRO to use the new master server. You can of course choose to do this manually by editing DeskPRO's configuration files to change the database host. But there are ways to automate this too.

For example, you can combine a failover script with a MySQL proxy such as [ProxySQL](#). By using a proxy like ProxySQL, DeskPRO connects to the proxy, and the proxy is able to dynamically determine the best host to pass the connection through.

17.4.2 Web Servers

You should create many web servers with all identical configuration (i.e. DeskPRO config files use the same database). A load balancer such as [HAProxy](#) can be installed in front of your servers distribute requests. HAProxy is able to detect a failed server and remove it from the rotation.

DeskPRO does not normally store any important application state in the filesystem aside from configuration. That means web servers are stateless and can be added/removed at will.

Note: Updating DeskPRO becomes slightly more difficult because you need to make sure file updates are made to every server.

17.4.3 Proxies

Proxies can be useful both in managing database connections (e.g. with ProxySQL) and web requests (e.g. HAProxy). But when you employ a proxy, the proxy itself becomes a single point of failure. That is, if the proxy server crashes for some reason, then everything still breaks.

Proxy servers “do less” and are generally expected to be more stable. But you still need a strategy for failing over the proxy to redundant proxy standby in the event of a problem.

How you do this will depend on your provider. For example, many providers will allow you to obtain a floating IP address that you can attach/detach on-the-fly.

17.4.4 Blobs / File Attachments

DeskPRO will store blobs (file attachments) in the database by default. However, storing blobs in the database is inefficient and we often suggest moving blobs into a more suitable store.

In a HA set up, web servers become “dumb” (necessary so you can add/remove them at will). This means it's not possible to write blobs to the local filesystem.

There are two other options:

1. You can create shared filesystem used by every web server node. For example, you could use NFS to create a networked filesystem. If you go this route, you just configure DeskPRO to write blobs to your shared filesystem. From the DeskPRO point of view, it's just a regular filesystem.
2. You can use DeskPRO's Amazon S3 storage mechanism where blobs are stored in the cloud.

17.4.5 ElasticSearch

ElasticSearch includes [clustering features](#) right out of the box. You just need to make sure you provision enough nodes to achieve high availability.