



# Installing Pandora FMS Open on Ubuntu



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15/03/04 21:28





# Installing Pandora FMS Open on Ubuntu

Installation on Ubuntu server 22.04.1 or 22.04.2 with root user rights, systemd enabled and internet connection.

Online installation for Ubuntu (22.04 LTS):

```
curl -SsL
https://raw.githubusercontent.com/pandorafms/pandorafms/develop/extras/deploy-scripts/pandora_deploy_community_ubuntu_2204_gh.sh | bash
```

## Start

In a terminal window with user root:

```
apt install -y gawk sed grep ping
rm -rf /opt/pandora/deploy
mkdir -p /opt/pandora/deploy
cd /opt/pandora/deploy
apt update
apt install -y net-tools vim curl wget \
software-properties-common apt-transport-https \
ca-certificates gnupg lsb-release
```

## Installation of Apache2 and PHP 8

```
add-apt-repository ppa:ondrej/php
apt update
apt upgrade
apt install -y php8.0-fpm php8.0-common libapache2-mod-fcgid php8.0-cli apache2
a2enmod proxy_fcgi setenvif
systemctl reload apache2
a2enconf php8.0-fpm
systemctl restart php8.0-fpm
```

## PFMS Web Console Dependencies

```
apt install -y \
ldap-utils postfix \
wget graphviz \
xfonts-75dpi xfonts-100dpi \
xfonts-ayu xfonts-intl-arabic \
xfonts-intl-asian xfonts-intl-phonetic \
```

```

xfonts-intl-japanese-big xfonts-intl-european \
xfonts-intl-chinese xfonts-intl-japanese \
xfonts-intl-chinese-big libzstd1 \
gir1.2-atk-1.0 libavahi-common-data \
cairo-perf-utils libfribidi-bin \
php8.0-mcrypt php8.0-gd \
php8.0-curl php8.0-mysql \
php8.0-ldap php8.0-fileinfo \
php8.0-gettext php8.0-snmp \
php8.0-mbstring php8.0-zip \
php8.0-xmlrpc php8.0-xml \
php8.0-yaml libnet-telnet-perl \
whois cron

```

## PFMS server dependencies

```

apt install -y \
perl nmap \
fping sudo \
net-tools nfdump \
expect openssh-client \
unzip xprobe coreutils \
libio-compress-perl libmoosex-role-timer-perl \
libdbd-mysql-perl libcrypt-mysql-perl \
libhttp-request-ascgi-perl liblwp-useragent-chicaching-perl \
liblwp-protocol-https-perl snmp \
libnetaddr-ip-perl libio-socket-ssl-perl \
libio-socket-socks-perl libio-socket-ip-perl \
libio-socket-inet6-perl libnet-telnet-perl \
libjson-perl libencode-perl \
cron libgeo-ip-perl \
arping snmp-mibs-downloader \
snmptrapd libnsl2 make \
openjdk-8-jdk

mkdir -m 0755 -p /etc/apt/keyrings

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | \
sudo gpg --yes --dearmor -o /etc/apt/keyrings/docker.gpg

echo \
"deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg]
https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable" | \
sudo tee /etc/apt/sources.list.d/docker.list

apt update -y
apt-get install -y \
docker-ce docker-ce-cli containerd.io \
docker-buildx-plugin docker-compose-plugin

```

```
systemctl disable docker --now
systemctl disable docker.socket --now

rm -f /usr/sbin/fping
ln -s /usr/bin/fping /usr/sbin/fping
```

## Google Chrome Tool

```
wget https://dl.google.com/linux/direct/google-chrome-stable_current_amd64.deb
dpkg -i google-chrome-stable_current_amd64.deb
ln -s /usr/bin/google-chrome /usr/bin/chromium-browser
```

## IPAM utilities

```
apt install -y \
  libnetaddr-ip-perl \
  coreutils libdbd-mysql-perl \
  libxml-simple-perl libgeo-ip-perl \
  libio-socket-inet6-perl libxml-twig-perl \
  libnetaddr-ip-perl
```

## AppArmor and UFW configuration

```
systemctl stop ufw.service
systemctl disable ufw
systemctl stop apparmor
systemctl disable apparmor
```

## MySQL Installation

```
curl -O https://repo.percona.com/apt/percona-release_latest.generic_all.deb
apt install -y gnupg2 lsb-release ./percona-release_latest.generic_all.deb
percona-release setup ps80
apt install -y percona-server-server percona-xtrabackup-80
```

---

```
systemctl start mysql

mysql -uroot -p

ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY
'pandora';

create database pandora;
```

```
CREATE USER pandora IDENTIFIED BY 'pandora';

ALTER USER 'pandora' IDENTIFIED WITH mysql_native_password BY 'pandora';

GRANT ALL PRIVILEGES ON pandora.* TO 'pandora';

exit;
```

```
cat > /etc/mysql/my.cnf << EOF_DB
[mysqld]
datadir=/var/lib/mysql
user=mysql
character-set-server=utf8mb4
skip-character-set-client-handshake
# Disabling symbolic-links is recommended to prevent assorted security risks
symbolic-links=0
# Mysql optimizations for Pandora FMS
# Please check the documentation in http://pandorafms.com for better results
max_allowed_packet = 64M
innodb_buffer_pool_size = grep -i total /proc/meminfo | head -1 | awk '{printf
"%.2f \n", $(NF-1)*0.4/1024}' | sed "s/\\.\\.\\.*/M/g"
innodb_lock_wait_timeout = 90
innodb_file_per_table
innodb_flush_log_at_trx_commit = 0
innodb_flush_method = 0_DIRECT
innodb_log_file_size = 64M
innodb_log_buffer_size = 16M
innodb_io_capacity = 300
thread_cache_size = 8
thread_stack = 256K
max_connections = 100
key_buffer_size=4M
read_buffer_size=128K
read_rnd_buffer_size=128K
sort_buffer_size=128K
join_buffer_size=4M
skip-log-bin
sql_mode=""
log-error=/var/log/mysql/error.log
[mysqld_safe]
log-error=/var/log/mysqld.log
pid-file=/var/run/mysqld/mysqld.pid
EOF_DB
```

```
systemctl restart mysql
```

## Pandora FMS Open Installation

```
curl -LSs --output \  
  pandorafms_console-7.0NG.tar.gz \  
"https://github.com/pandorafms/pandorafms/releases/download/v772-LTS/pandorafms_\  
console-7.0NG.772.tar.gz"  
  
curl -LSs --output \  
  pandorafms_server-7.0NG.tar.gz \  
"https://github.com/pandorafms/pandorafms/releases/download/v772-LTS/pandorafms_\  
server-7.0NG.772_x86_64.tar.gz"  
  
curl -LSs --output \  
  pandorafms_agent_linux-7.0NG.tar.gz \  
"https://github.com/pandorafms/pandorafms/releases/download/v772-LTS/pandorafms_\  
agent_linux-7.0NG.772.tar.gz"
```

### Consola web PFMS

```
tar xvzf pandorafms_console-7.0NG.tar.gz  
cp -Ra pandora_console /var/www/html/  
rm -f /var/www/html/pandora_console/*.spec
```

### PFMS Server

```
useradd pandora  
  
mv pandorafms_server-7.0NG.tar.gz /opt/pandora/deploy/  
cd /opt/pandora/deploy  
tar xvfz pandorafms_server-7.0NG.tar.gz  
cd pandora_server  
./pandora_server_installer --install
```

### PFMS Agent

```
apt install -y libyaml-tiny-perl perl coreutils wget curl unzip procps python3  
python3-pip  
  
mv pandorafms_agent_linux-7.0NG.tar.gz /opt/pandora/deploy/  
cd /opt/pandora/deploy  
tar xvzf pandorafms_agent_linux-7.0NG.tar.gz
```

```
cd unix

./pandora_agent_installer --install

cp -a tentacle_client /usr/local/bin/
```

## GoTTY installation

```
curl --output pandora_gotty.deb
https://github.com/pandorafms/pandorafms/releases/download/tools/pandora_gotty_1
.1.0.deb
apt install -y ./pandora_gotty.deb
```

## SSL configuration

```
cat > /etc/apache2/conf-available/ssl-params.conf << EOF_PARAM
SSLCipherSuite EECDH+AESGCM:EDH+AESGCM:AES256+EECDH:AES256+EDH

    SSLProtocol All -SSLv2 -SSLv3 -TLSv1 -TLSv1.1

    SSLHonorCipherOrder On

    Header always set X-Frame-Options DENY

    Header always set X-Content-Type-Options nosniff

# Requires Apache >= 2.4

    SSLCompression off

    SSLUseStapling on

    SSLStaplingCache "shmcb:logs/stapling-cache(150000)"

# Requires Apache >= 2.4.11

    SSLSessionTickets Off
EOF_PARAM
```

---

```
a2enmod ssl
a2enmod headers
a2enmod rewrite
a2enconf ssl-params
a2ensite default-ssl
```



```
a2enconf ssl-params
apache2ctl configtest

systemctl restart apache2
systemctl enable mysql --now
systemctl enable apache2 --now
systemctl enable php8.0-fpm --now
```

## Tables and data for MySQL

```
mysql -uroot -ppandora

use pandora;

source /var/www/html/pandora_console/pandoradb.sql

source /var/www/html/pandora_console/pandoradb_data.sql

exit;
```

## PHP and Apache2 configuration

```
cat > /var/www/html/pandora_console/include/config.php << EO_CONFIG_F
<?php
\$config["dbtype"] = "mysql";
\$config["dbname"]="pandora";
\$config["dbuser"]="pandora";
\$config["dbpass"]="pandora";
\$config["dbhost"]="127.0.0.1";
\$config["homedir"]="/var/www/html/pandora_console";
\$config["homeurl"]="/pandora_console";
error_reporting(0);
\$ownDir = dirname(__FILE__) . '/';
include ( \$ownDir . "config_process.php");
EO_CONFIG_F
```

```
cat > /etc/apache2/conf-enabled/pandora_security.conf << EO_CONFIG_F
ServerTokens Prod
<Directory "/var/www/html">
    Options FollowSymLinks
    AllowOverride All
    Require all granted
</Directory>
EO_CONFIG_F
```

```
chmod 600 /var/www/html/pandora_console/include/config.php

chown -R www-data:www-data /var/www/html/pandora_console

mv /var/www/html/pandora_console/install.php
/var/www/html/pandora_console/install.done
```

---

```
ln -s /etc/php/8.0/fpm/php.ini /etc/

sed --follow-symlinks -i -e "s/^max_input_time.*/max_input_time = -1/g"
/etc/php.ini

sed --follow-symlinks -i -e "s/^max_execution_time.*/max_execution_time = 0/g"
/etc/php.ini

sed --follow-symlinks -i -e "s/^upload_max_filesize.*/upload_max_filesize =
800M/g" /etc/php.ini

sed --follow-symlinks -i -e "s/^memory_limit.*/memory_limit = 800M/g"
/etc/php.ini

sed --follow-symlinks -i -e "s/. *post_max_size =.*/post_max_size = 800M/"
/etc/php.ini

sed --follow-symlinks -i -e "s/^disable_functions;/;disable_functions/"
/etc/php.ini

echo 'Timeout 900' > /etc/apache2/conf-enabled/timeout.conf
echo 'ProxyTimeout 300' >> /etc/apache2/conf-enabled/timeout.conf
```

---

```
cat > /var/www/html/index.html << EOF_INDEX
<meta HTTP-EQUIV="REFRESH" content="0; url=/pandora_console/">
EOF_INDEX

systemctl restart apache2

systemctl restart php8.0-fpm
```

## PFMS server and agent configuration

```
cat> /etc/snmp/snmptrapd.conf <<EOF
authCommunity log public
disableAuthorization yes
EOF
```

```
sed -i -e "s/^dbhost.*/dbhost 127.0.0.1/g" /etc/pandora/pandora_server.conf
sed -i -e "s/^dbname.*/dbname pandora/g" /etc/pandora/pandora_server.conf
sed -i -e "s/^dbuser.*/dbuser pandora/g" /etc/pandora/pandora_server.conf
sed -i -e "s|^dbpass.*|dbpass pandora|g" /etc/pandora/pandora_server.conf
sed -i -e "s/^dbport.*/dbport 3306/g" /etc/pandora/pandora_server.conf

sed -i -e "s/^#.mssql_driver.*/mssql_driver 17/g"
/etc/pandora/pandora_server.conf
```

```
grep -q "group www-data" /etc/pandora/pandora_server.conf || \
cat>> /etc/pandora/pandora_server.conf<<EOF_G
#Adding group www-data to assing remote-config permission correctly for ubuntu
22.04
group www-data
EOF_G
```

```
sed -i "s/^remote_config.*$/remote_config 1/g" /etc/pandora/pandora_agent.conf
```

```
cat>> /etc/sysctl.conf <<E0_K0
# Pandora FMS Optimization
# default=5
net.ipv4.tcp_syn_retries = 3
# default=5
net.ipv4.tcp_synack_retries = 3
# default=1024
net.ipv4.tcp_max_syn_backlog = 65536
# default=124928
net.core.wmem_max = 8388608
# default=131071
net.core.rmem_max = 8388608
# default = 128
net.core.somaxconn = 1024

# default = 20480
net.core.optmem_max = 81920

E0_K0

sysctl --system
```

```
chown pandora:www-data /var/log/pandora

chmod g+s /var/log/pandora

cat> /etc/logrotate.d/pandora_server <<EO_LR
/var/log/pandora/pandora_server.log
/var/log/pandora/web_socket.log
/var/log/pandora/pandora_server.error {
    su root apache
    weekly
    missingok
    size 300000
    rotate 3
    maxage 90
    compress
    notifempty
    copytruncate
    create 660 pandora apache
}

/var/log/pandora/pandora_snmptrap.log {
    su root apache
    weekly
    missingok
    size 500000
    rotate 1
    maxage 30
    notifempty
    copytruncate
    create 660 pandora apache
}

EO_LR
```

```
cat> /etc/logrotate.d/pandora_agent <<EO_LRA
/var/log/pandora/pandora_agent.log {
    su root apache
    weekly
    missingok
    size 300000
    rotate 3
    maxage 90
    compress
    notifempty
    copytruncate
}

EO_LRA
```

```
chmod 0644 /etc/logrotate.d/pandora_server
```

```
chmod 0644 /etc/logrotate.d/pandora_agent
```

## Tentacle and cron

```
systemctl start pandora_server
```

```
systemctl enable pandora_server
```

```
service tentacle_serverd start
```

```
systemctl enable tentacle_serverd
```

```
echo "* * * * * root wget -q -O - --no-check-certificate --load-cookies  
/tmp/cron-session-cookies --save-cookies /tmp/cron-session-cookies --keep-  
session-cookies http://127.0.0.1/pandora_console/enterprise/cron.php >>  
$PANDORA_CONSOLE/log/cron.log" >> /etc/crontab
```

```
echo "@hourly          root    bash -c /etc/cron.hourly/pandora_db" >>  
/etc/crontab
```

Remote agent configuration:

```
sed -i "s/^remote_config.*$/remote_config 1/g" /etc/pandora/pandora_agent.conf
```

```
systemctl start pandora_agent_daemon
```

```
systemctl enable pandora_agent_daemon
```

PhantomJS

```
sed --follow-symlinks -i -e "s/^openssl_conf = openssl_init/#openssl_conf =  
openssl_init/g" /etc/ssl/openssl.cnf
```

Postfix

```
systemctl enable postfix --now
```

OpenSSL

```
sed -i '/default = default_sect/a legacy = legacy_sect' /etc/ssl/openssl.cnf  
sed -i 's/# activate = 1/activate = 1/' /etc/ssl/openssl.cnf
```

```
sed -i '/activate = 1/a [legacy_sect]\nactivate = 1' /etc/ssl/openssl.cnf
```

SSH banner

```
[ "$(curl -s ifconfig.me)" ] && ipplublic=$(curl -s ifconfig.me)

cat > /etc/issue.net << EOF_banner

Welcome to Pandora FMS appliance on Ubuntu
-----
Go to Public http://$ipplublic/pandora_console to login web console
$(ip addr | grep -w "inet" | grep -v "127.0.0.1" | grep -v "172.17.0.1" | awk
'{print $2}' | awk -F '/' '{print "Go to Local http://"$1"/pandora_console to
login web console"}')

You can find more information at http://pandorafms.com

EOF_banner

rm -f /etc/issue
ln -s /etc/issue.net /etc/issue

echo 'Banner /etc/issue.net' >> /etc/ssh/sshd_config
```

## PFMS login

To access the Web Console, type the IP address (or URL) of the device followed by /pandora\_console/.

The default login credentials are:

- user: admin
- password: pandora

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