
KopanoMattermost

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Kopano BV

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This document, the Kopano Mattermost manual provides administrators with information on how to install the Kopano Mattermost packages.

Introduction

Mattermost helps you and your teams increase productivity by delivering real-time chat in team-based communication channels. It provides the ability to securely share information, files and content from dozens of your commonly used business applications instantly.

Using DeskApp, a browser or an app on your mobile: real-time communication is now available without compromising privacy or control of your data.

Mattermost is the number one open source Slack alternative, and the integration in Kopano marks another major step in Kopano's mission to deliver a seamless communication and sharing experience across all devices from one unified, self-hosted platform under your control.

The Kopano Mattermost packages allow for easy installation and update of Mattermost without having to handle Docker containers or Go binaries yourself. Packages are provided in two flavours to provide the Mattermost Team edition and Enterprise edition, with the ability to easily switch between these packages.

The packages can be installed regardless if Kopano is already used or installed in the environment. Additional integration packages will later be made available to integrate Mattermost into Kopano.

This documentation will focus on the most important aspects of getting Mattermost up and running. For further information please consult <https://docs.mattermost.com/>.

Installation

Due to dependencies of Mattermost on more recent versions of MySQL and Nginx, than provided by some of the supported distributions of Kopano the Mattermost packages are only available for the following distributions (some more distributions may be available through the Kopano community channel).

- Debian 8.0
- Debian 9.0
- SLES 12
- Ubuntu 16.04
- Ubuntu 18.04

Note: If you want to install Mattermost on Univention the following steps are not applicable. Instead you should install the official [Univention Mattermost app](#) which is based on the packages described below.

2.1 System requirements

- MySQL >= 5.6.2 or MariaDB >= 10.0.5
- Nginx 1.10 or Apache 2.4 (Nginx is preferred)

2.2 Installation

The packages can either be retrieved from the [Kopano package repository](#) (available only to customers with a valid Kopano subscription) or downloaded as an archive including the latest development versions from the [Kopano Community downloads](#). The following chapter will explain the installation through the Kopano package repository.

2.2.1 Configuring the Kopano package repositories

The package repository can either be accessed by using a combination of username & password (account can be registered at the [Kopano Portal](#) or by using the username `serial` and your Kopano serial (e.g. `Z...`) as the password.

The repository url to be used depends on the release type (final releases and pre-final releases, e.g. `beta` or `rc` versions) and the Linux distribution. It is recommended to visit [https://download.kopano.io/supported/mattermost:/](https://download.kopano.io/supported/mattermost/) with a webbrowser and navigate to the desired release type and distribution and copy the url. For the final release channel and Ubuntu 16.04 the url will for example be https://download.kopano.io/supported/mattermost:/final/Ubuntu_16.04/.

Adding the repository for Ubuntu 16.04:

```
URL=https://serial:your-serial@download.kopano.io/supported/mattermost:/final/
↳Ubuntu_16.04/
echo "deb $URL /" >> /etc/apt/sources.list.d/kopano-mattermost.list
curl $URL/Release.key | apt-key add -
apt update
```

See the [Kopano Core Administrator Manual](#) for more information about our package repositories.

2.2.2 Installing the Mattermost Team edition

After the repository has been added Mattermost can be installed by retrieving the `mattermost-server` package with your package manager.

Installing packages on Ubuntu 16.04:

```
apt install mattermost-server
```

2.2.3 Installing the Mattermost Enterprise edition

To benefit from the additional features of the Mattermost Enterprise (like LDAP based single-sign on, see <https://about.mattermost.com/features/#featuresCompare> for more information) this version has been packaged as well. The `mattermost-server-enterprise` packages uses the same paths for configuration and logfiles and is dedigned to be a drop-in replacement for the `mattermost-server` packages, which means that it is possible to switch between the two packages with easily.

Installing packages on Ubuntu 16.04:

```
apt install mattermost-server-enterprise
```

A license file is required to enable the features of the Mattermost Enterprise editions. An evaluation license can be requested from <https://kopano.com/request-mattermost-trial/> (please allow up to 72 hours for delivery).

2.2.4 Configuring Mattermost and its dependencies

This chapter explains the minimum required configuration to get started with Mattermost.

MySQL configuration

To successfully start Mattermost needs to know credentials of a user on your MySQL server and a precreated database. To ease this process we included a small script called `mattermost-db-configure` in the packages that creates a local MySQL user and database for you.

```
$ mattermost-db-configure
usage: /usr/sbin/mattermost-db-configure -u <mysql-user> -p <mysql-password> -d
↳<mattermost-database> -n <mattermost-dbuser> -o <mattermost-dbpass>
```

Where `<mysql-user>/<mysql-password>` is the name and password of the MySQL root user (or a user with enough privileges to create the mattermost user and database).

The script will also automatically insert the database credentials into the Mattermost configuration. Please restart Mattermost once to apply these changes.

```
$ service mattermost restart
```

Webserver configuration

The packages include webserver configuration files for Nginx and Apache to make Mattermost accessible from a dedicated domain, e.g. *mattermost.example.org*. These example configuration files still need to be extended in regards to actual hostnames and ssl configuration.

Enabling Nginx vHost

```
ln -s /etc/nginx/sites-available/mattermost /etc/nginx/sites-enabled/
```

Enabling Apache vHost

```
a2enmod rewrite proxy proxy_http proxy_wstunnel  
a2ensite mattermost
```

Further configuration

For additional configuration options please check <https://docs.mattermost.com/guides/administrator.html>

First steps with Mattermost

This section is aimed to be a minimal guide for getting familiar with Mattermost.

The packages provided only set a few common settings by default (more in below chapter)

- **Regardless of using Mattermost Team or Enterprise, there is no preconfigured integration with Kopano.**
 - for the Mattermost Enterprise Edition LDAP could be configured as user source.
- **The first user to create an account and login is automatically admin.**
 - When installing Mattermost the admin should directly create an account for himself.
- **Communication in Mattermost happens in “Teams” and no default team is created.**
 - Create a team for your users. Something simple such as “home” could provide a good start.
 - Be aware that you can change the name of a team, but not the url. So whatever is chosen here will be along as long as the team exists.
- **Configure SMTP integration**
 - without SMTP settings Mattermost will not be able to send email invitations and notifications.
- **invite kopano users to Mattermost**
 - since there is no direct user integration the platform command could be used to invite your users.
e.g. with `mattermost-platform user invite user@example.com home`.

3.1 Interacting with Mattermost from the CLI

Starting with version 4.1.0-RC2+2.1 the packages include a small wrapper utility that makes it easier to work with the *platform* command of mattermost. All configuration options of the *platform* command are available via `mattermost-platform`.

```
$ mattermost-platform
You need to pass at least one parameter. Try /usr/sbin/mattermost-platform help_
↳instead.

$ mattermost-platform help
Mattermost offers workplace messaging across web, PC and phones with archiving, _
↳search and integration with your existing systems. Documentation available at _
↳https://docs.mattermost.com

Usage:
  platform [flags]
  platform [command]

Available Commands:
```



```

channel      Management of channels
config       Configuration
help         Help about any command
import       Import data.
jobserver    Start the Mattermost job server
ldap         LDAP related utilities
license      Licensing commands
reset        Reset the database to initial state
roles        Management of user roles
server       Run the Mattermost server
team         Management of teams
user         Management of users
version      Display version information

```

Flags:

```

-c, --config string      Configuration file to use. (default "config.json")
--disableconfigwatch    When set config.json will not be loaded from disk
↳when the file is changed.
-h, --help               help for platform

```

Use "platform [command] --help" for more information about a command.

3.2 Configuration for Kopano WebApp/DeskApp

The `kopano-webapp-plugin-mattermost` package, which is part of the Kopano WebApp download, can be used to integrate Mattermost within Kopano DeskApp and WebApp. The Mattermost plugin can be installed as a package from both the Kopano Webapp and Mattermost package repositories and must be configured as followed:

Please replace the url with the actual url of your Mattermost installation.

For security puproses Mattermost makes use of two response headers which prevent browsers from running the Mattermost web client cross domain or inside an iframe (which the WebApp plugin does). Fortunately those can be replaced/modified by the reverse proxy to still allow embedding for specified domains.

A valid configuration for Nginx has the following values in the Mattermost vHost (the following snippet is already part of the installed vHost and needs to be adapted in regards to the actually used hostname):

```

add_header X-Frame-Options "ALLOW-FROM 'https://your.kopano.webapp.host.local'";
add_header Content-Security-Policy "frame-ancestors 'self' https://your.kopano.
↳webapp.host.local";
proxy_hide_header X-Frame-Options;
proxy_hide_header Content-Security-Policy;

```

The example vHosts for Apache and Nginx have the needed additional configuration already included (but commented).

The enable notification when running Mattermost within Kopano WebApp or DeskApp the `Notifymatters Plugin` needs to be installed as a plugin in Mattermost. The plugin extends Mattermost with a PostMessage API, so that external applications can easily interact with it. Once the plugin has been added to Mattermost make sure to add the URL WebApp is accessed from to the “Trusted Origin” configuration setting of the plugin (accessible from the System Console in Mattermost).

3.3 Filesystem locations

The configuration files for Mattermost itself (`config.json`) is stored below `/etc/mattermost`. Logfiles for Mattermost are located below `/var/log/mattermost`.

3.4 Automatic configuration that differs from the defaults set by Mattermost

When installing Mattermost from the packages provided by Kopano some (recommended by us) configuration settings are already set for your convenience. Here you can find a list of these settings.

3.4.1 User and server tracking (partly disabled)

Mattermost by default performs client side tracking (via the service segment.io) and server side tracking (once at start and then every 24 hours). More information about this can be obtained from the “[Telemetry](#)” chapter. of the Mattermost documentation.

While we do see the value in having this data to make better development statistics, we also recognize that most of our customer do not want automated tracking of all their client sessions, therefore *EnableDiagnostics* is set to false by default. Additionally *EnableSecurityFixAlert* could be disable to stop sending server statistics every 24 hours, but since also suppresses update reminders for admins we decided to leave it at its default value.

3.4.2 Team creation by normal users

In the default configuration any Mattermost user can create new “Teams”, when installing the packages provided by Kopano only administrators can create new teams.

This can be changes by setting `EnableTeamCreation` back to `true`.

[More information](#)

3.4.3 Posting into channels by bots

In the default configuration configured webhooks will always be displayed as coming from the user who created the webhook. For convinience the packages already set the following two configuration options to allow webhooks to override this behaviour:

- `EnablePostUsernameOverride`
- `EnablePostIconOverride`

[More information](#)

3.4.4 Batching of Email notification

Once the admin enabled notifications via Email, a separate Email will be send for each event. with this setting enabled Mattermost will collect and wait (configurable per user) 15 minutes before sending an Email.

More information <https://docs.mattermost.com/administration/config-settings.html?highlight=emailbatchinginterval#enable-email-batching>

General usage tips

This section will highlight some Mattermost integrations that we think will be helpful to administrators.

4.1 Sending (automatic) messages to Mattermost

`Mattersend` is a nice small utility for sending messages from the Linux commandline into Mattermost. It can for example be used to send notifications about system upgrades or notify you about cron-jobs.

4.1.1 Installation of mattersend

Mattersend can easily be installed through the pip command:

```
pip3 install mattersend
```

4.2 Easily access existing scripts via Slash commands and Webhooks

`webhook` is a lightweight tool written in Go, that allows you to easily create HTTP endpoints (hooks) on your server, which you can use to execute configured commands.

Starting with Debian Stretch packages for `webhook` are available directly from the Debian repositories, for other Distributions prebuilt Go binaries are available.

Univention Mattermost app

This section contains instructions specific to the [Mattermost app for Univention](#).

5.1 Installing the app

The app can easily be installed from the Univention Appcenter. The app is available for UCS 4.2 (and newer).

The app automatically creates a first user and team for you, so you can already login the username `administrator`. The password for this user is the one that you specified during the installation (it defaults to `mattermost`).

Once logged in as `administrator` you can open the `System console` from within Mattermost for further configuration of Mattermost itself. In case you have a [Mattermost license key](#) you can upload it from the “Edition and License” screen to automatically enable LDAP user management functionality.

If you want to test out the advanced functionality of the Mattermost Enterprise Edition you can [request a trial license](#).

Regardless if you are using LDAP as a user source, or let users join with their email address, you either need to create a [new team](#) for your users, [invite](#) your users to your team, or make your team public to any signed in user by setting `Allow any user with an account on this server to join this team` to `yes` from within the `Team Settings`.

Further information can be found in the [Mattermost Administrator’s Guide](#).

5.2 Running the app

In its default configuration the app may require you to open up additional ports in your firewall, since Mattermost is currently exposed in Port 8123 (`http`) and 8234 (`https`). These ports are automatically configured in the UCS firewall, but may need to be added to external firewalls.

Additionally some redirects inside the app (links in mail notifications) are configured to the dns name of the UCS host the app is installed on. Please make sure that the dns name of the UCS host resolves properly.

Starting with the 4.3.1 update its also possible to define a custom hostname and ssl certificate for Mattermost. In case a custom hostname is configured Mattermost will be available through the Ports 80 and 443.

5.3 Managing users

This app installs the Enterprise Edition of Mattermost. All UCS users can log in to Mattermost with a valid license key. Without a valid license key, only the free-of-charge team edition functions are available. If you want to test out the advanced functionality of the Mattermost Enterprise Edition you can [request a trial license](#).

5.4 Command line access

In case you want to use the [Mattermost Command line tools](#) the you can easily get a shell inside of the Mattermost app container by executing `univention-app shell mattermost`. If you already know the commands you want to execute, then these commands can easily be chained to the entry of the container:

```
$ univention-app shell mattermost mattermost-platform version
{"level":"info","ts":1541083311.0965855,"caller":"utils/i18n.go:78","msg":"Loaded_
↳system translations for 'en' from '/opt/mattermost/i18n/en.json'"}
{"level":"info","ts":1541083311.0968325,"caller":"app/app.go:204","msg":"Server is_
↳initializing..."}
{"level":"info","ts":1541083311.1056023,"caller":"sqlstore/supplier.go:209","msg":
↳"Pinging SQL master database"}
{"level":"info","ts":1541083311.1078012,"caller":"sqlstore/channel_store_
↳experimental.go:47","msg":"Enabling experimental public channels materialization
↳"}
{"level":"info","ts":1541083311.1735156,"caller":"app/license.go:44","msg":
↳"License key from https://mattermost.com required to unlock enterprise features.
↳"}
Version: 5.4.0
Build Number: 5.4.0
Build Date: Tue Oct 16 16:48:31 UTC 2018
Build Hash: d5b613cb1bbdaa856fa126e7102d94783b9e80b6
Build Enterprise Ready: true
DB Version: 5.4.0
```

5.5 Backup

Starting with version 4.3.0 the app creates a daily backup job that dumps the contents of the bundled MySQL database into the folder `/var/lib/univention-appcenter/apps/mattermost/data/backup`.

In addition to the MySQL database the folders `config` and `files` should be backed up as well.

5.5.1 Restoring a MySQL dump in the Docker container

A backup of the MySQL database can be restored when the following steps are followed (all existing MySQL data will be overwritten!):

```
# 1. check the currently used image by executing docker ps
$ docker ps
CONTAINER ID          IMAGE                                     STATUS      PORTS
↳COMMAND             CREATED          STATUS      PORTS
↳ NAMES
3e0a6b5be730         docker.software-univention.de/univention-mattermost:4.4.2   "/
↳start.sh"           5 days ago      Up 6 seconds    0.0.0.0:8065->8065/tcp_
↳ tiny_cori
# in above example the current image is docker.software-univention-
↳mattermost:4.4.2
# 2. Stop the currently running container
systemctl stop docker-app-mattermost.service
# 3. start up a new container based on the current image, but override the default_
↳entrypoint
docker run -it --entrypoint=bash \
-v /var/lib/univention-appcenter/apps/mattermost/data/files:/opt/mattermost/data \
-v /var/lib/univention-appcenter/apps/mattermost/data/mysql:/var/lib/mysql \
-v /var/lib/univention-appcenter/apps/mattermost/data/config:/etc/mattermost \
--name=mattermost-repair docker.software-univention.de/univention-mattermost:4.4.2
root@a12dbfebece0:/#
```

```
# 4. you now have a prompt in your repair environment and can restore the MySQL
↳dump. Before restoring the dump you have to start MySQL first.
root@a12dbfebece0:/# service mysql start
# The password of the MySQL root user is "mysql"
# 5. once you are done type exit to stop the container. The container can
↳permanently be removed by running
root@a12dbfebece0:/# exit
$ docker rm mattermost-repair
```

5.6 Logs & Troubleshooting

Following Docker best practices the App does not write logs into files, but instead to the STDOUT of the container. These logs can be viewed the following way.

Get logs by running `docker logs -f` and giving the name of the Docker container, the name can easily be retrieved from the Univention Configuration Registry:

```
$ docker logs -f $(ucr get appcenter/apps/mattermost/container)
...
[2017/10/26 10:23:20 UTC] [INFO] Config file watcher detected a change reloading /
↳etc/mattermost/config.json
[2017/10/26 10:23:23 UTC] [INFO] Config file watcher detected a change reloading /
↳etc/mattermost/config.json
=> Start MySQL
* Starting MySQL database server mysqld
...done.
=> Start Mattermost
[2017/10/29 07:45:06 UTC] [INFO] Loaded system translations for 'en' from '/opt/
↳mattermost/i18n/en.json'
[2017/10/29 07:45:06 UTC] [INFO] Current version is 4.3.0 (4.3.1/Fri Oct 20 20:02:
↳36 UTC 2017/c8a67ac3c95b11b6a3045905cd4f875f8ffd0fe8/
↳729b149c2a5c82c230e302f0963f6161ca7c652e)
[2017/10/29 07:45:06 UTC] [INFO] Enterprise Enabled: true
[2017/10/29 07:45:06 UTC] [INFO] Current working directory is /opt/mattermost
[2017/10/29 07:45:06 UTC] [INFO] Loaded config file from /etc/mattermost/config.
↳json
[2017/10/29 07:45:06 UTC] [INFO] Able to write files to local storage.
[2017/10/29 07:45:06 UTC] [INFO] Server is initializing...
[2017/10/29 07:45:06 UTC] [INFO] Pinging SQL master database
[2017/10/29 07:45:07 UTC] [INFO] License key from https://mattermost.com required
↳to unlock enterprise features.
[2017/10/29 07:45:07 UTC] [INFO] Initializing plugin: ldapextras
[2017/10/29 07:45:07 UTC] [INFO] Initializing plugin: jira
[2017/10/29 07:45:07 UTC] [INFO] Initializing job API routes
[2017/10/29 07:45:07 UTC] [INFO] API version 3 is scheduled for deprecation.
↳Please see https://api.mattermost.com for details.
[2017/10/29 07:45:07 UTC] [INFO] Starting 4 websocket hubs
[2017/10/29 07:45:07 UTC] [INFO] Starting Server...
[2017/10/29 07:45:07 UTC] [INFO] Server is listening on :8065
[2017/10/29 07:45:07 UTC] [INFO] Starting workers
[2017/10/29 07:45:07 UTC] [INFO] Starting schedulers.
...
```

In case case the app does not start up anymore and the admin wants to remove it, this action will fail since Univention requires a running container to perform a last backup before removal. The following command can be used from the commandline of the UCS system to force the removal: `univention-app remove mattermost --do-not-backup`

Kopano Web Meetings (Meet)

Please have a look at [A first look at the new Kopano Web Meetings](#) for a high level introduction to Kopano Web Meetings.

6.1 Setting it up

Running the new Kopano Web Meetings is quite simple. After downloading the `kwmserver` packages and extracting them the server just needs to be started, e.g. with:

```
./bin/kwmserverd serve \  
  --listen 127.0.0.1:8778 \  
  --admin-tokens-key /path/to/admin-tokens.key
```

Where `--listen` specifies the address, the server is reachable from and the optional `--admin-tokens-key` points to a text file with the token used to validate user sessions. If this key is not specified a random and temporary one will be generated during startup.

To be able to use `kwmserver` from a webbrowser the websocket connection needs to be established through `https`. For this we recommend the usage of a reverse proxy, like Caddy, Nginx or Apache. Below is an example for configuring Nginx:

```
location /api/v1/websocket {  
    proxy_set_header Upgrade $http_upgrade;  
    proxy_set_header Connection "upgrade";  
    proxy_set_header Connection "";  
    proxy_set_header Host $http_host;  
    proxy_set_header X-Real-IP $remote_addr;  
    proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;  
    proxy_set_header X-Forwarded-Proto $scheme;  
    proxy_set_header X-Frame-Options SAMEORIGIN;  
    proxy_buffers 256 16k;  
    proxy_buffer_size 16k;  
    proxy_read_timeout 600s;  
    proxy_pass http://127.0.0.1:8778;  
}  
  
location = /api/v1/rtm.connect {  
    proxy_set_header Host $http_host;  
    proxy_set_header X-Real-IP $remote_addr;  
    proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;  
    proxy_set_header X-Forwarded-Proto $scheme;  
    proxy_set_header X-Frame-Options SAMEORIGIN;  
    proxy_buffers 256 16k;  
    proxy_buffer_size 16k;  
    proxy_read_timeout 600s;
```

```
proxy_pass http://127.0.0.1:8778;  
}
```

After kwmsserver is started the “[Kopano Web Meeting Plugin for Mattermost](#)” can be uploaded and configured directly from the “System Console” of Mattermost. For this the admin has to give the external URL of kwmsserver, the internal URL, as well as the URI to a STUN and TURN server. For evaluation purposes the default values can be used.

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