

# Migrate From EMS to Self-Hosted

For support on Synapse or matrix-media-repo, ask in the Matrix rooms [#synapse:matrix.org](#) and [#mediarepo:t2bot.io](#). For support on bridges, see the [bridge documentation](#) for each bridge's support channel.

See also [this](#) excellent blog post by Robin Riley at The Matrix.org Foundation.

## Important

- It is impossible to change the domain of any Matrix server. Therefore if your EMS server is not using Custom DNS (i.e. your Matrix IDs are `@someone:hostname.ems.host`), unfortunately it is not possible to import your export to your own or another environment.
  - You can run an export with this domain in a local environment if you set up your own DNS and self-signed certificates. But you will not be able to federate with the public Matrix federation.
- Do not cancel your EMS server until you have downloaded your export and verified its content. Canceling your server will erase your data.
- You will experience some downtime as your server will be stopped while the export is running. The EMS export tool will estimate the actual downtime when initiated.
- Ensure all your users have key backup configured and working before starting the export and migration. All clients need to log out and in again after the migration. See the [Cross Signing](#) section for more information about key backup.
- It is impossible to read encrypted messages or media from the export. Encrypted data in Matrix can only be decrypted by the user in their client when they have the required decryption keys.

## Export data

1. Go to <https://ems.element.io/user/hosting#/exports>
2. Select the server you want to export from in the drop-down box, then click [Create export](#)
3. Wait for the export of your config, database, and media to complete
4. Once all exports have completed, download all files provided

## Import process

For all components, you must install the same version as your EMS server is running. Version information is provided in the `hostname-config.md` file. If a newer version is available, once the import is completed and verified, follow the official upgrade documentation for each component to upgrade.

All required configuration values are provided in the `hostname-config.md` file.

1. Following official documentation, install and configure
  1. PostgreSQL. Refer to the Synapse PostgreSQL documentation for database setup
  2. Synapse
  3. Optional (see media step below): matrix-media-repo
2. When generating your Synapse configuration file, you MUST use the same domain as your EMS server
3. Do not start Synapse yet
4. In the Synapse config file (usually `homeserver.yaml`), set:
  1. pepper. If you do not do this, you have to reset all passwords
  2. Signing key. This is stored in a file. See this config file option for path. Alternatively, add the public key for your EMS hosted server to `old_signing_keys`. If your EMS server is still running, you can find your public signing key at [https://yourHostname.ems.host/\\_matrix/key/v2/server](https://yourHostname.ems.host/_matrix/key/v2/server)
  3. macaroon\_secret\_key
5. Import the Synapse database
  1. Create a new database per the Synapse PostgreSQL documentation
  2. Or, if your Synapse database is not empty, empty it  
**WARNING - THIS WILL IMMEDIATELY AND IRRECOVERABLY DELETE DATA, PLEASE TAKE CARE. WE ACCEPT NO RESPONSIBILITY IF YOU DELETE THE WRONG DATABASE OR DATA**  
Connect to the database with `psql`, then run the following queries:

```
DO $$ DECLARE
r RECORD;
BEGIN
    FOR r IN (SELECT tablename FROM pg_tables WHERE schemaname = current_schema())
    LOOP
        EXECUTE 'DROP TABLE ' || quote_ident(r.tablename) || ' CASCADE';
    END LOOP;
END $$;

DROP sequence cache_invalidation_stream_seq;
DROP sequence state_group_id_seq;
DROP sequence user_id_seq;
DROP sequence account_data_sequence;
DROP sequence application_services_txn_id_seq;
DROP sequence device_inbox_sequence;
DROP sequence device_lists_sequence;
DROP sequence e2e_cross_signing_keys_sequence;
DROP sequence event_auth_chain_id;
DROP sequence events_backfill_stream_seq;
```

```
DROP sequence events_stream_seq;
DROP sequence presence_stream_sequence;
DROP sequence push_rules_stream_sequence;
DROP sequence pushers_sequence;
DROP sequence receipts_sequence;
DROP sequence un_partial_stated_event_stream_sequence;
DROP sequence un_partial_stated_room_stream_sequence;
```

Enter the command `\d` and make sure no tables or sequences remain.  
Disconnect from the database

### 3. Extract the database dump

```
unzip emsHostname-synapse-database.zip
```

### 4. Import the database dump

```
pg_restore \  
  --username USERNAME \  
  --host HOSTNAME \  
  --dbname DATABASE_NAME \  
  --no-owner \  
  /path/to/id-emsHostname-synapse-database.dir/
```

### 5. Verify that sequence was set correctly. Connect to the database and run the query

```
SELECT * FROM state_group_id_seq;
```

`last_value` should be greater than 1

- Import media into matrix-media-repo according to documentation [here](#) or import media into Synapses built-in media repository using the `import_to_synapse` executable available from the latest [matrix-media-repo release](#)
- Start Synapse and ensure everything is working as expected
- Optionally, install [Element Web](#) or use another [Matrix client](#)
- If you have any bridges, please see the documentation for each bridge  
[Discord](#) | [Hookshot](#) | [IRC](#) | [Signal](#) | [Slack](#) | [Telegram](#) | [Whatsapp](#)
  - The process for importing the bridge databases is the same as with Synapse
- Cancel your EMS server. See [this](#) FAQ document for instructions. **Note, this cannot be undone and all your data will be lost. Ensure your imported server is working as expected before doing this**

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Revision #43

Created 5 December 2023 11:01:01 by twilight

Updated 13 June 2025 11:47:53 by twilight