Immich LXC Setup with External Storage and Backup Strategy

Overview

Immich was installed using the **Proxmox Community Scripts**, which resulted in a fully functional LXC container without issues.
After the initial setup, the container configuration was adjusted to provide **sufficient storage capacity for photos and videos**, as the default container disk size is not suitable for long-term media storage.

The solution is based on mapping Immich's upload directory to a **dedicated large storage volume** and handling backups **outside of Proxmox's standard container backups**.

Storage Layout and Mount Point

Immich Upload Directory

Immich stores all uploaded media in the following directory inside the container:

```
/opt/immich/upload/
```

To avoid filling up the container's root filesystem, this directory is mapped to a **separate mount point** backed by a larger disk (e.g. ZFS storage on the Proxmox host).

Mount Point Migration Procedure

1. Backup Existing Upload Directory

Before changing anything, log into the Immich LXC and create a backup of the existing upload directory:

```
cp -a /opt/immich/upload /opt/immich/upload.backup
```

This ensures the original folder structure and any existing files are preserved.

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2. Create and Map the Mount Point

On the Proxmox host:

- Create a new storage volume (e.g. ZFS dataset or subvolume) with sufficient capacity.
- Map this volume into the LXC at:

```
/opt/immich/upload/
```

This replaces the original directory with the external storage.

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3. Restore Directory Contents

After the mount point is active inside the container:

```
cp -a /opt/immich/upload.backup/* /opt/immich/upload/
```

This guarantees that Immich finds the directory structure it expects.

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4. Fix Ownership and Permissions

Immich requires the upload directory to be owned by the `immich` user:

```
chown -R immich:immich /opt/immich/upload
```

Failing to do this may lead to upload errors or missing media in the UI.

Backup Considerations (Important)

? Proxmox Datacenter Backups

The mapped mount point **is not included** in regular Proxmox container backups.

This is expected behavior and **must be handled explicitly**.

Backup Strategy

Restic + rclone (WebDAV)

Backups are handled independently of Proxmox using the following stack:

- **restic** for versioned, encrypted backups
- **rclone** as the transport layer
- **WebDAV** as the remote storage backend as it is the easiest to be used inside LXCs (I think)

This approach provides:

- Encrypted, deduplicated backups
- Independence from container snapshots
- Fine-grained control over retention and scheduling
- Easy restores without Proxmox involvement

Only the external upload storage needs to be backed up; the container itself can be rebuilt at any time.

Design Rationale

- **Large media data is decoupled from the container**
- **Container rebuilds are trivial**
- **Backups are reliable, explicit, and auditable**
- **Storage growth does not require LXC resizing**

This setup aligns well with long-term photo library management and avoids common pitfalls with container-based media applications.

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