Proxmox Offline Mirror Documentation

Release 0.7.4

Proxmox Support Team

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CHAPTER

ONE

INTRODUCTION

1.1 What is Proxmox Offline Mirror?

With the Proxmox Offline Mirror tool, you can manage a local apt mirror for all package updates for Proxmox and Debian projects. From this local apt mirror you can create an external medium, for example a USB flash drive or a local network share, to update systems which cannot access the package repositories directly via the internet. Such systems might be restricted by policies to access the public internet or are completely air-gapped. Finally, you can also manage subscriptions for such restricted hosts.

This tool consists of two binaries:

`proxmox-offline-mirror`
: The mirror tool to create and manage mirrors and media containing repositories

`proxmox-offline-mirror-helper`
: The helper to use the external medium on offline Proxmox VE, Proxmox Mail Gateway or Proxmox Backup Server systems as well as managing subscriptions on these systems.

1.2 Terminology

There are three basic entity types available for configuration:

keys
: Subscription keys are either for the mirroring system itself, or for the offline systems.

  They are configured with `proxmox-offline-mirror key ...`

mirrors
: A mirror consists of the metadata of an upstream repository and a local path where **snapshots** of the upstream repository are stored.

  - configured with `proxmox-offline-mirror config mirror ...`
  - used with `proxmox-offline-mirror mirror ...`

snapshots
: Point-in-time view of a mirror. Snapshots consist of hardlinks into the underlying storage pool to reduce the disk space requirements.

media
: A medium consisting of local mirrors and a path where the mirrors are synced to

  - configured with `proxmox-offline-mirror config medium ...`
  - used with `proxmox-offline-mirror medium ...`

1.3 Technical Overview

Behind the scenes, one or more *pools* consisting of

- a pool directory containing checksum files (e.g., *sha256/3dc7bc5f82cdcc4ea0f69dd30d5f6bb19e0ccc36f4a79c86*
- a link directory containing directories and hardlinks to the checksum files inside the pool directory

are used to store the repository contents ("snapshots") of repository mirrors in a space-efficient way.

When adding a file, the following steps are done: first the ckecksum file(s) are added, then they are linked under one or more paths. A garbage collect operation will iterate over all files in the link directory and remove those, which are not (or no longer) a hardlink to any checksum files. It will also remove any checksum files which have no hardlinks outside of the pool's checksum file directories.

A pool directory can be shared by multiple mirrors in order to deduplicate stored files across the mirror boundary. For example, it is recommended to have a single pool directory (mirror base directory) for all mirrors of Proxmox repositories.

The default config path is `/etc/proxmox-offline-mirror.cfg`, but it can be overriden on a per command basis (for example, to allow operation as a non-root user). Use the `--config` CLI option or the `PROXMOX_OFFLINE_MIRROR_CONFIG` environment variable.

1.4 Getting Help

1.4.1 Enterprise Support

Users with a *Proxmox Offline Mirror* subscription have access to the Proxmox Customer Portal for offline mirroring/key handling related issues, provided the corresponding offline system has a valid subscription level higher than *Community*. The customer portal provides support with guaranteed response times from the Proxmox developers.

For more information or for volume discounts, please contact sales@proxmox.com.

1.4.2 Community Support Forum

We always encourage our users to discuss and share their knowledge using the Proxmox Community Forum. The forum is moderated by the Proxmox support team. The large user base is spread out all over the world. Needless to say that such a large forum is a great place to get information.

1.4.3 Mailing Lists

Proxmox Offline Mirror is fully open-source and contributions are welcome! The Proxmox VE development mailing list acts as the primary communication channel for offline mirror developers:

Mailing list for developers
PVE Development List

1.4.4 Bug Tracker

Proxmox runs a public bug tracker at https://bugzilla.proxmox.com. If an issue appears, file your report there. An issue can be a bug, as well as a request for a new feature or enhancement. The bug tracker helps to keep track of the issue and will send a notification once it has been solved.

1.5 License

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CHAPTER

TWO

INSTALLATION

Proxmox Offline Mirror is released as standard Debian package and is available in the Proxmox VE, Proxmox Backup Server and Proxmox Mail Gateway package repositories.

2.1 System Requirements

- CPU: 64bit (*x86-64* or *AMD64*), ideally 2+ Cores
- Debian based system (physical host, VM or container)
- Sufficient storage space for the local mirrors. For a basic Debian and Proxmox VE we recommend at least 150 GiB
- A file system supporting hard links for both, the local host and the external medium. Note that most Linux derived file systems support hard links, but Windows derived ones (for example, *FAT) do *not* support hard links.

2.2 Installation via APT

If the host you want to install the `proxmox-offline-mirror` tools on, already has a package repository from a Proxmox solution configured, you can simply install the offline mirror tool with `apt`:

```
# apt update
# apt install proxmox-offline-mirror
```

If you do not have any Proxmox VE, Proxmox Backup Server or Proxmox Mail Gateway repositories set up, see *SecureApt* and *Set up the Repository on non Proxmox based systems* for how to do so before using the commands above.

2.2.1 Debian Package Repositories

All Debian based systems use APT as a package management tool. The lists of repositories are defined in `/etc/apt/sources.list` and the `.list` files found in the `/etc/apt/sources.d/` directory. Newer systems will also use `.sources` file in the new deb822 format found at the same location. Updates can be installed directly with the `apt` command line tool, or via the GUI.

APT `sources.list` files list one package repository per line, with the most preferred source listed first. Empty lines are ignored, and a # character anywhere on a line marks the remainder of that line as a comment. The information available from the configured sources is acquired by `apt update`.

2.2.2 SecureApt

The *Release* files in the repositories are signed with GnuPG. APT is using these signatures to verify that all packages are from a trusted source.

Tip

If you install Proxmox Offline Mirror on an existing Proxmox VE, Proxmox Backup Server or Proxmox Mail Gateway, the verification key will already be present.

If you install Proxmox Offline Mirror on top of Debian Bookworm, download and install the key with the following commands:

```
# wget https://enterprise.proxmox.com/debian/proxmox-archive-keyring-trixie.gpg -O /usr/share/
↪keyrings/proxmox-archive-keyring.gpg
```

Note

The *wget* command above adds the keyring for Proxmox releases based on Debian Trixie. Once the *proxmox-archive-keyring* package is installed, it will manage this file. At that point, the hashes below may no longer match the hashes of this file, as keys for new Proxmox releases get added or removed. This is intended, *apt* will ensure that only trusted keys are being used. **Modifying this file is discouraged once 'proxmox-archive-keyring' is installed.**

Verify the SHA256 checksum afterwards with the expected output below:

```
# sha256sum /usr/share/keyrings/proxmox-archive-keyring.gpg
136673be77aba35dcce385b28737689ad64fd785a797e57897589aed08db6e45 /usr/share/keyrings/proxmox-
↪archive-keyring.gpg
```

and the md5sum, with the expected output below:

```
# md5sum /usr/share/keyrings/proxmox-archive-keyring.gpg
77c8b1166d15ce8350102ab1bca2fcbf /usr/share/keyrings/proxmox-archive-keyring.gpg
```

Note

Make sure that the path that you download the key to, matches the path specified in the `Signed-By:` lines in your repository stanzas below.

2.2.3 Set up the Repository on non Proxmox based systems

If you do not have an internet facing installation of a Proxmox solution, or want to set up a dedicated system for Proxmox Offline Mirror, you need to configure the repository first.

This should work on any Linux distribution using *apt* as package manager, such as Debian, Ubuntu or derivatives thereof.

To configure the repository, you first need to *set up the Proxmox release key*. After that, add the repository URL to the APT sources lists.

We recommend re-using the `pbs-client` repository for installing the Proxmox Offline Mirror on non Proxmox systems.

Hint

While you could also use a Proxmox VE, Proxmox Backup Server or Proxmox Mail Gateway repository, those ship some updated packages from Debian native packages, which would get pulled in, even if not required for the offline mirroring.

Repository for Debian 13 (Trixie) based releases

Here are the actual steps for a generic Debian 13 (Bookworm) based system.

First edit the file `/etc/apt/sources.list.d/pbs-client.sources` and add the following snippet:

Listing 1: File: `/etc/apt/sources.list.d/pbs-client.sources`

```
Types: deb
URIs: http://download.proxmox.com/debian/pbs-client
Suites: trixie
Components: main
Signed-by: /usr/share/keyrings/proxmox-archive-keyring.gpg
```

Now you should be able to install the `proxmox-offline-mirror` package, see *Installation via APT*.

Repository for Debian 12 (Bookworm) based releases

Here are the actual steps for a generic Debian 12 (Bookworm) based system.

First edit the file `/etc/apt/sources.list.d/pbs-client.list` and add the following snippet:

Listing 2: File: `/etc/apt/sources.list.d/pbs-client.list`

```
deb http://download.proxmox.com/debian/pbs-client bookworm main
```

Now you should be able to install the `proxmox-offline-mirror` package, see *Installation via APT*.

CHAPTER

THREE

OFFLINE SUBSCRIPTION KEYS

The `proxmox-offline-mirror` tool can be used to manage subscription keys for air-gapped systems or systems that cannot access the public internet. To use this functionality, you need a subscription key for Proxmox Offline Mirror itself.

The offline mirror tool will take care of registering the subscription keys in the Proxmox shop. If the key is valid, it will get a signed data blob in response. The signed response can then be exported to an offline medium to transfer and set the subscription key in a Proxmox solution, without any need for an internet connection on the host itself.

3.1 Minimum Versions for Offline Activation

Offline activation of subscription keys requires support from the respective Proxmox solution. The following table shows in which version this support has been added.

Solution	Package	Minimum Version
Proxmox VE	pve-manager	7.2-11
Proxmox Backup Server	proxmox-backup-server	2.2.6-1
Proxmox Mail Gateway	pmg-api	7.1-7

3.2 Setup Offline Mirror Key

First, add the *pom-<keyid>* mirror key using `proxmox-offline-mirror key add-mirror-key <key>`. This command will activate the subscription of the mirroring system.

Note

To purchase a subscription key for Proxmox Offline Mirror, please contact <sales@proxmox.com>. If you already have a Standard or Premium subscription for the majority of your Proxmox VE, Proxmox Backup Server or Proxmox Mail Gateway hosts, you may be eligible for a free Offline Mirror subscription. In that case, please email <sales@proxmox.com> to get more details.

3.3 Gather Server IDs

Next, gather the server IDs of the systems that will be set up for offline keys. You can see the server ID in the subscription panel of each host, or by using the CLI with the following commands:

- `pvesubscription get` for Proxmox VE
- `proxmox-backup-manager subscription get` for Proxmox Backup server

- `pmgsubscription get` for Proxmox Mail Gateway

3.4 Register & Refresh Keys

> **Note**
>
> To be able to access and mirror a product's enterprise repository, `proxmox-offline-mirror` requires that both, an active product subscription key and a Proxmox Offline Mirror subscription is configured.

Register the hosts with their subscription keys and server IDs using `proxmox-offline-mirror setup` or `proxmox-offline-mirror key add`, for example:

```
proxmox-offline-mirror key add pve2p-12345... ABCDEF0123...
```

By default, this command will fetch the updated subscription information from the Proxmox subscription servers.

You can refresh the subscription information for a single (`--key XX`) or all configured keys using `proxmox-offline-mirror key refresh`.

3.5 Deploy Keys

The subscription information is transferred to a medium (see *Syncing a Medium*) and can then be activated on the offline system with either `proxmox-offline-mirror-helper offline-key` or `proxmox-offline-mirror-helper setup`. This process must be repeated at least once a year or before the next due date of the subscription key is reached, whichever comes first.

CHAPTER

FOUR

OFFLINE REPOSITORY MIRRORS

Offline repository mirrors are pointing to APT repositories, for example from Proxmox VE, Proxmox Backup Server or Debian. After the initial setup, you can mirror all the available packages locally. They are organized by creating point-in-time snapshots of the repositories. Those snapshots can then be exported to a configured medium.

4.1 Setting Up a Mirror

First, either run the `setup` wizard (`proxmox-offline-mirror setup`), or the `config mirror add` command.

Tip

The quickest way to set up all relevant repositories for a Proxmox solution is to use the `setup` wizard. Choose the product when adding a mirror and confirm the question regarding auto-adding the Debian base repos.

Note

To be able to access and mirror a product's enterprise repository, `proxmox-offline-mirror` requires that both, an active product subscription key and a Proxmox Offline Mirror subscription is configured (see *Setup Offline Mirror Key*)

For example, to manually add a mirror entry for the Debian Bookworm security repository, the following command can be used:

```
proxmox-offline-mirror config mirror add \
 --id debian-bookworm-security \
 --architectures amd64 \
 --architectures all \
 --repository 'deb http://deb.debian.org/debian-security bookworm-security main contrib non-
↪free' \
 --key-path /etc/apt/trusted.gpg.d/debian-archive-bookworm-security-automatic.gpg \
 --sync true \
 --verify true \
 --base-dir /path/to/mirror/base-dir
```

Note

The *base-dir* directory can be shared by mirrors for repositories that have common contents to avoid storing files more than once. For example, having a single base directory for all mirrors referencing Proxmox repositories is recommended.

Note

The *all* architecture is meant for architecture independent packages, not for all possible architectures. It is usually always sensible to add it in addition to the host-specific architecture.

4.2 Syncing a Mirror

To create the first (and subsequent) snapshots, the following command can be used:

```
proxmox-offline-mirror mirror snapshot create debian-bookworm-security
```

Note

Depending on the parameters used and the size of the original repository, creating a snapshot can take both time and require significant disk space. This is especially true for the initial snapshot, as subsequent ones will re-use unchanged package files and indices.

4.3 Reducing Mirror Scope

There are different mechanisms for reducing a mirror's scope (and correspondingly, the amount of traffic and disk space required to keep it synced):

- architecture filters
- components (as part of the *repository* specification)
- package name and section filters

By default, only packages for the architectures *all* (see note above) and *amd64* are mirrored.

Optionally, it's possible to setup filters for downloaded binary or source packages via the *--skip-packages* and *--skip-sections* options. The package filters support globbing, for example *linux-image-** will skip all packages with a name starting with *linux-image-*. The section filters match the full value, or the value prefixed with the package's component (for example, *games* will match both the section *games*, as well as *non-free/games* in a packages index of the *non-free* component).

Some examples for packages and section filters:

- *--skip-packages 'linux-image-*'* - filter Debian linux kernel image packages
- *--skip-sections 'games'* - filter sections containing game packages
- *--skip-sections 'debug'* - filter sections containing debug information

If you want to skip all debugging related packages (which might not always be in the *debug* section mentioned in the example above), the following set of filters should work:

```
--skip-packages *-dbgsym \
--skip-packages *-dbg \
--skip-packages *-debug \
--skip-sections debug
```

Please refer to https://packages.debian.org/bookworm/ for a list of Debian archive sections and their contents.

4.4 Space Management

After removing a snapshot with `proxmox-offline-mirror mirror snapshot remove`, a `proxmox-offline-mirror mirror gc` invocation is needed to trigger the garbage collection to actually remove any contents from the underlying hard link pool that are no longer needed.

4.5 Environment Variables

`ALL_PROXY`
: When set, proxmox-offline-mirror uses the specified HTTP proxy for all HTTP(s) connections. Currently only HTTP proxies are supported. Valid proxy configurations have the following format: *[http://][user:password@]<host>[:port]*. Default *port* is 1080, if not otherwise specified.

> **Note**
>
> The proxy server must allow `HTTP CONNECT` for all ports that are used to connect to mirrors (e.g. port 80 for HTTP mirrors). For Squid, the appropriate configuration parameter is `http_access allow CONNECT <acl>` (http://www.squid-cache.org/Doc/config/http_access/). By default, Squid only allows `HTTP CONNECT` for port 443.

CHAPTER

FIVE

OFFLINE MEDIA

A medium is a file system location on which mirrored repositories and subscription information can be saved at to make it available to the offline Proxmox systems. This can be an external portable disk (for example a USB pen drive) or a local network share.

5.1 Setting Up a Medium

Either run the `setup` wizard again, or use the `config media add` command. For example, to define a new medium containing the *proxmox-ve-bookworm-no-subscription* and *debian-bookworm* mirrors, run the following command:

```
proxmox-offline-mirror config media add \
 --id pve-bookworm \
 --mirrors proxmox-ve-bookworm-no-subscription \
 --mirrors debian-bookworm \
 --sync true \
 --verify true \
 --mountpoint /path/where/medium/is/mounted
```

5.2 Syncing a Medium

To sync the local mirrors to a medium, the following command can be used:

```
proxmox-offline-mirror medium sync pve-bookworm
```

This command will sync all mirrors linked with this medium to the medium's mount point. Additionally, it will sync all offline keys for further processing by `proxmox-offline-mirror-helper` on the target system.

5.3 Using a Medium

After syncing a medium you can make it accessible on the (offline) target system by either:

- unmounting it from the mirror host, plugging it into the target and mounting it there
- exposing it either directly (from the mirror host) or indirectly (from another host) via the local network (NFS, CIFS/SMB or HTTP)

After that you can upgrade the host as normally, either using the console or the web interface, as described in the respective project's documentation.

Once an upgrade is done you should disable, or remove, the snippet to avoid apt errors from automatic refresh. Note that you can disable and re-enable repositories simply via the web interface of Proxmox VE, Proxmox Backup Server or Proxmox Mail Gateway.

5.3.1 Example: Local Mount Point

Either option below assumes that you already mounted the medium on the target host.

Guided Setup

For a guided setup run `proxmox-offline-mirror-helper setup`. It will let you select the mirrors and snapshots and can then generate a *sources.list.d* snippet. This snippet can be saved to the `/etc/apt/sources.list.d` directory. The default file name is `offline-mirror.list`.

Manual Setup

You can also just point *apt* directly at the synced snapshot folder(s) on the medium and then create an new repository entry in a `/etc/apt/sources.list.d` file, for example:

```
deb [check-valid-until=false] file:///mnt/mirror-path/<mirror-name>/<snapshot-timestamp>
 ↪<codename> <suite>
```

Where `<codename>` is normally the Debian one, for example `bullseye` or `bookworm` and `suite` is one or more of either the one of a Debian or Proxmox project, for example `pve-enterprise`. *pbstest* or *main*.

Now you should be able to upgrade like normally, and don't forget to disable the repository entry again until next time, once your done.

5.3.2 Example: Local HTTP Server

You can also configure an HTTP server to provide the snapshots in your internal network. A minimal sample configuration for *nginx*:

```
# with the correct dns setup and path this corresponds to a sources.lists entry
# deb [ check-valid-until=false ] http://proxmox-offline-mirror.domain.example/
 ↪<mirror-name>/<snapshot-timestamp> <codename> <suite>
server {
listen 80 default_server;
listen [::]:80 default_server;
server_name proxmox-offline-mirror.domain.example;
root /path/to/medium;
disable_symlinks off;
autoindex on;
error_log /var/log/nginx/proxmox-offline-mirror.error.log;
access_log /var/log/nginx/proxmox-offline-mirror.access.log;
location / {
        try_files $uri $uri/ =404;
}
}
```

The corresponding `/etc/apt/sources.list.d` file should contain

```
deb [ check-valid-until=false ] http://proxmox-offline-mirror.domain.example/<mirror-name>/
 ↪<snapshot-timestamp> <codename> <suite>
```

See *Manual Setup* above for examples abut what `<codename>` or `<suite>` can be.

Now you should be able to upgrade like normally, and don't forget to disable the repository entry again until next time, once your done.

5.4 Activating a Subscription Key

To activate or update a subscription key offline, either use `proxmox-offline-mirror-helper offline-key` directly or follow the respective step when doing the guided setup via the `proxmox-offline-mirror-helper setup` command.

The `offline-key` command supports both local mountpoints and HTTP URLs. When using an HTTP server (as described in the *Example: Local HTTP Server* section), you can activate subscription keys directly from the HTTP URL without needing to mount the medium locally:

```
proxmox-offline-mirror-helper offline-key --source http://proxmox-offline-mirror.domain.
↪example/
```

This is particularly useful when the mirror is served over HTTP and you only need to activate subscription keys. Other operations like the `status` command and repository configuration still require a local mountpoint.

APPENDIX

A

COMMAND SYNTAX

A.1 proxmox-offline-mirror

For supported environment variables please refer to *Environment Variables* .

`proxmox-offline-mirror config media add --id <string> --mirrors <string> --mountpoint <string> --sync <boolean> --verify <boolean> [OPTIONS]`

Create new medium config entry.

--id <string>
Medium name.

--mirrors <string>
List of [MirrorConfig] IDs which should be synced to medium. Can be specified more than once.

--mountpoint <string>
Mountpoint where medium is available on mirroring system.

--sync <boolean>
Whether to write new files using FSYNC.

--verify <boolean>
Whether to verify existing files or assume they are valid (IO-intensive).

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror config media list [OPTIONS]`

List configured media.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror config media remove --id <string> --remove-data <boolean> [OPTIONS]`

Remove medium config entry.

--id <string>
Medium name.

--remove-data <boolean>
Remove ALL DATA on medium as well.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

```
proxmox-offline-mirror config media show --id <string> [OPTIONS]
```

Show full medium config entry.

--id <string>
Medium name.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

```
proxmox-offline-mirror config media update --id <string> [OPTIONS]
```

Update medium config entry.

--id <string>
Medium name.

Optional parameters:

--config <string>
Path to mirroring config file.

--mirrors <string>
List of [MirrorConfig] IDs which should be synced to medium. Can be specified more than once.

--mountpoint <string>
Mountpoint where medium is available on mirroring system.

--sync <boolean>
Whether to write new files using FSYNC.

--verify <boolean>
Whether to verify existing files or assume they are valid (IO-intensive).

```
proxmox-offline-mirror config mirror add --architectures <string>
--base-dir <string> --id <string> --key-path <string> --repository <string>
--sync <boolean> --verify <boolean> [OPTIONS]
```

Create new mirror config entry.

--architectures <string>
List of architectures that should be mirrored. Can be specified more than once.

--base-dir <string>
Path to directory containg mirrored repository pool. Can be shared by multiple mirrors.

--id <string>
Mirror name.

--key-path <string>
Path to public key file for verifying repository integrity.

--repository <string>
Single repository definition in sources.list format.

--sync <boolean>
Whether to write new files using FSYNC.

--verify <boolean>
Whether to verify existing files or assume they are valid (IO-intensive).

Optional parameters:

--config <string>
Path to mirroring config file.

--ignore-errors <boolean> (default=false)
Whether to downgrade download errors to warnings

--output-format text|json|json-pretty
Output format.

--skip-packages <string>
Packages which should be skipped, supports globbing Can be specified more than once.

--skip-sections <string>
Sections which should be skipped Can be specified more than once.

--use-subscription pve|pbs|pmg|pom
Product type

--weak-crypto [[allow-sha1=<1|0>] [,min-dsa-key-size=<integer>] [,min-rsa-key-size=<integer>]]
Whether to allow using weak cryptography algorithms or parameters, deviating from the default policy.

`proxmox-offline-mirror config mirror list [OPTIONS]`

List configured mirrors

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror config mirror remove --id <string> --remove-data <boolean> [OPTIONS]`

Remove mirror config entry.

--id <string>
Mirror name.

--remove-data <boolean>
Remove mirror data as well.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror config mirror show --id <string> [OPTIONS]`

Show full mirror config

--id <string>
Mirror name.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror config mirror update --id <string> [OPTIONS]`

Update mirror config entry.

--id <string>
Mirror name.

Optional parameters:

--architectures <string>
List of architectures that should be mirrored. Can be specified more than once.

--base-dir <string>
Path to directory containg mirrored repository pool. Can be shared by multiple mirrors.

--config <string>
Path to mirroring config file.

--ignore-errors <boolean> (default=false)
Whether to downgrade download errors to warnings

--key-path <string>
Path to public key file for verifying repository integrity.

--repository <string>
Single repository definition in sources.list format.

--skip-packages <string>
Packages which should be skipped, supports globbing Can be specified more than once.

--skip-sections <string>
Sections which should be skipped Can be specified more than once.

--sync <boolean>
Whether to write new files using FSYNC.

--use-subscription pve|pbs|pmg|pom
Product type

--verify <boolean>
Whether to verify existing files or assume they are valid (IO-intensive).

--weak-crypto [[allow-sha1=<1|0>] [,min-dsa-key-size=<integer>] [,min-rsa-key-size=<integer>]]
Whether to allow using weak cryptography algorithms or parameters, deviating from the default policy.

`proxmox-offline-mirror help [{<command>}] [OPTIONS]`

Get help about specified command (or sub-command).

<command>
: [<string>] Command. This may be a list in order to specify nested sub-commands. Can be specified more than once.

Optional parameters:

--verbose <boolean>
: Verbose help.

`proxmox-offline-mirror key add <key> <server-id> [OPTIONS]`

List subscription keys and their status

<key>
: [<string>] Subscription key.

<server-id>
: [<string>] Server ID.

Optional parameters:

--config <string>
: Path to mirroring config file.

--description <string>
: Description, e.g. which system this key is deployed on

--info <string>
: base64 encoded subscription info - update with 'refresh' command.

--refresh <boolean> (default=true)
: Whether to refresh the subscription info upon adding.

`proxmox-offline-mirror key add-mirror-key <key> [OPTIONS]`

Add offline mirror key

<key>
: [<string>] Subscription key.

Optional parameters:

--config <string>
: Path to mirroring config file.

`proxmox-offline-mirror key list [OPTIONS]`

List subscription keys and their status

Optional parameters:

--config <string>
: Path to mirroring config file.

--output-format text|json|json-pretty
: Output format.

`proxmox-offline-mirror key refresh [OPTIONS]`

Refresh subscription key status.

Optional parameters:

--config <string>
Path to mirroring config file.

--key <string>
Subscription key.

`proxmox-offline-mirror key remove <key> [OPTIONS]`

Remove subscription key config entry.

<key>
[<string>] Subscription key.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror key show <key> [OPTIONS]`

Show (decoded) subscription config entry.

<key>
[<string>] Subscription key.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror key update <key> [OPTIONS]`

Update subscription config entry.

<key>
[<string>] Subscription key.

Optional parameters:

--config <string>
Path to mirroring config file.

--description <string>
Description, e.g. which system this key is deployed on

--server-id <string>
Server ID.

`proxmox-offline-mirror medium diff <id> [OPTIONS]`

Diff a medium

<id>
[<string>] Medium name.

Optional parameters:

--config <string>
Path to mirroring config file.

--verbose <boolean> (default=false)
Verbose output (print paths in addition to summary).

`proxmox-offline-mirror medium gc <id> [OPTIONS]`

Garbage collect all mirrors on a medium.

<id>
[<string>] Medium name.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror medium status <id> [OPTIONS]`

Print status of a medium

<id>
[<string>] Medium name.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror medium sync <id> [OPTIONS]`

Sync a medium

<id>
[<string>] Medium name.

Optional parameters:

--config <string>
Path to mirroring config file.

--keys-only <boolean> (default=false)
Only sync offline subscription keys, skip repository contents

---

`proxmox-offline-mirror mirror gc [<id>] [OPTIONS]`

Run Garbage Collection on pool(s). If no *id* is specified, the pools of all configured mirrors will be GCed.

<id>
[<string>] Mirror name.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror mirror snapshot create <id> [OPTIONS]`

Create a new repository snapshot, fetching required/missing files from original repository.

<id>
[<string>] Mirror name.

Optional parameters:

--config <string>
Path to mirroring config file.

--dry-run <boolean> (default=false)
Only fetch indices and print summary of missing package files, don't store anything.

`proxmox-offline-mirror mirror snapshot create-all [OPTIONS]`

Create a new repository snapshot for each configured mirror, fetching required/missing files from original repository.

Optional parameters:

--config <string>
Path to mirroring config file.

--dry-run <boolean> (default=false)
Only fetch indices and print summary of missing package files, don't store anything.

`proxmox-offline-mirror mirror snapshot diff <id> <snapshot> <other_snapshot> [OPTIONS]`

Print differences between two snapshots.

<id>
[<string>] Mirror name.

<snapshot>
[<string>] Mirror snapshot

<other_snapshot>
[<string>] Mirror snapshot

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror mirror snapshot list [<id>] [OPTIONS]`

List existing repository snapshots.

<id>
[<string>] Mirror name.

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror mirror snapshot remove <id> <snapshot> [OPTIONS]`

Remove a single snapshot dir from a mirror. To actually removed the referenced data a garbage collection is required.

<id>
[<string>] Mirror name.

<snapshot>
[<string>] Mirror snapshot

Optional parameters:

--config <string>
Path to mirroring config file.

--output-format text|json|json-pretty
Output format.

`proxmox-offline-mirror setup [OPTIONS]`

Interactive setup wizard.

Optional parameters:

--config <string>
Path to mirroring config file.

A.2 proxmox-offline-mirror-helper

`proxmox-offline-mirror-helper help [{<command>}] [OPTIONS]`

Get help about specified command (or sub-command).

<command>
[<string>] Command. This may be a list in order to specify nested sub-commands. Can be specified more than once.

Optional parameters:

--verbose <boolean>
Verbose help.

`proxmox-offline-mirror-helper offline-key --source <string> [OPTIONS]`

Configures and offline subscription key

--source <string>
Path to medium mountpoint or URL for key activation

Optional parameters:

--product **pve|pbs|pmg|pom**
Product type

`proxmox-offline-mirror-helper setup`

Interactive setup wizard.

`proxmox-offline-mirror-helper status --mountpoint <string> [OPTIONS]`

Prints status of medium

--mountpoint **<string>**
Path to medium mountpoint

Optional parameters:

--output-format **text|json|json-pretty**
Output format.

APPENDIX

B

CONFIGURATION FILES

The Proxmox Offline Mirror configuration file is stored at `/etc/proxmox-offline-mirror.cfg` by default. Its location can be overriden for any given command using the *--config* parameter.

Note that you can use the `--config <file>` switch on most commands or the `PROXMOX_OFFLINE_MIRROR_CONFIG` environment variable to override the default config location.

B.1 `proxmox-offline-mirror.cfg`

B.1.1 Options

Section type '`medium`': Configuration entry for an external medium.

Required properties:

`mirrors`
: [<`string`>] List of [MirrorConfig] IDs which should be synced to medium. Can be specified more than once.

`mountpoint`
: [<`string`>] Mountpoint where medium is available on mirroring system.

`sync`
: [<`boolean`>] Whether to write new files using FSYNC.

`verify`
: [<`boolean`>] Whether to verify existing files or assume they are valid (IO-intensive).

Section type '`mirror`': Configuration entry for a mirrored repository.

Required properties:

`architectures`
: [<`string`>] List of architectures that should be mirrored. Can be specified more than once.

`base-dir`
: [<`string`>] Path to directory containg mirrored repository pool. Can be shared by multiple mirrors.

`key-path`
: [<`string`>] Path to public key file for verifying repository integrity.

`repository`
: [<`string`>] Single repository definition in sources.list format.

`sync`
: [<`boolean`>] Whether to write new files using FSYNC.

`verify`
: [<`boolean`>] Whether to verify existing files or assume they are valid (IO-intensive).

Optional properties:

ignore-errors
: [<boolean> (default=false)] Whether to downgrade download errors to warnings

use-subscription
: [pve|pbs|pmg|pom] Product type

weak-crypto
: [[[allow-sha1=<1|0>] [,min-dsa-key-size=<integer>] [,min-rsa-key-size=<integer>]]] Whether to allow using weak cryptography algorithms or parameters, deviating from the default policy.

  allow-sha1 = <boolean> (default=false)
  : Whether to allow SHA-1 based signatures

  min-dsa-key-size = <integer>
  : Whether to lower the key size cutoff for DSA-based signatures

  min-rsa-key-size = <integer>
  : Whether to lower the key size cutoff for RSA-based signatures

skip-packages
: [<string>] Packages which should be skipped, supports globbing Can be specified more than once.

skip-sections
: [<string>] Sections which should be skipped Can be specified more than once.

Section type 'subscription': Subscription key used for accessing enterprise repositories and for offline subscription activation/renewal.

Required properties:

server-id
: [<string>] Server ID.

Optional properties:

description
: [<string>] Description, e.g. which system this key is deployed on

info
: [<string>] base64 encoded subscription info - update with 'refresh' command.

APPENDIX

C

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