

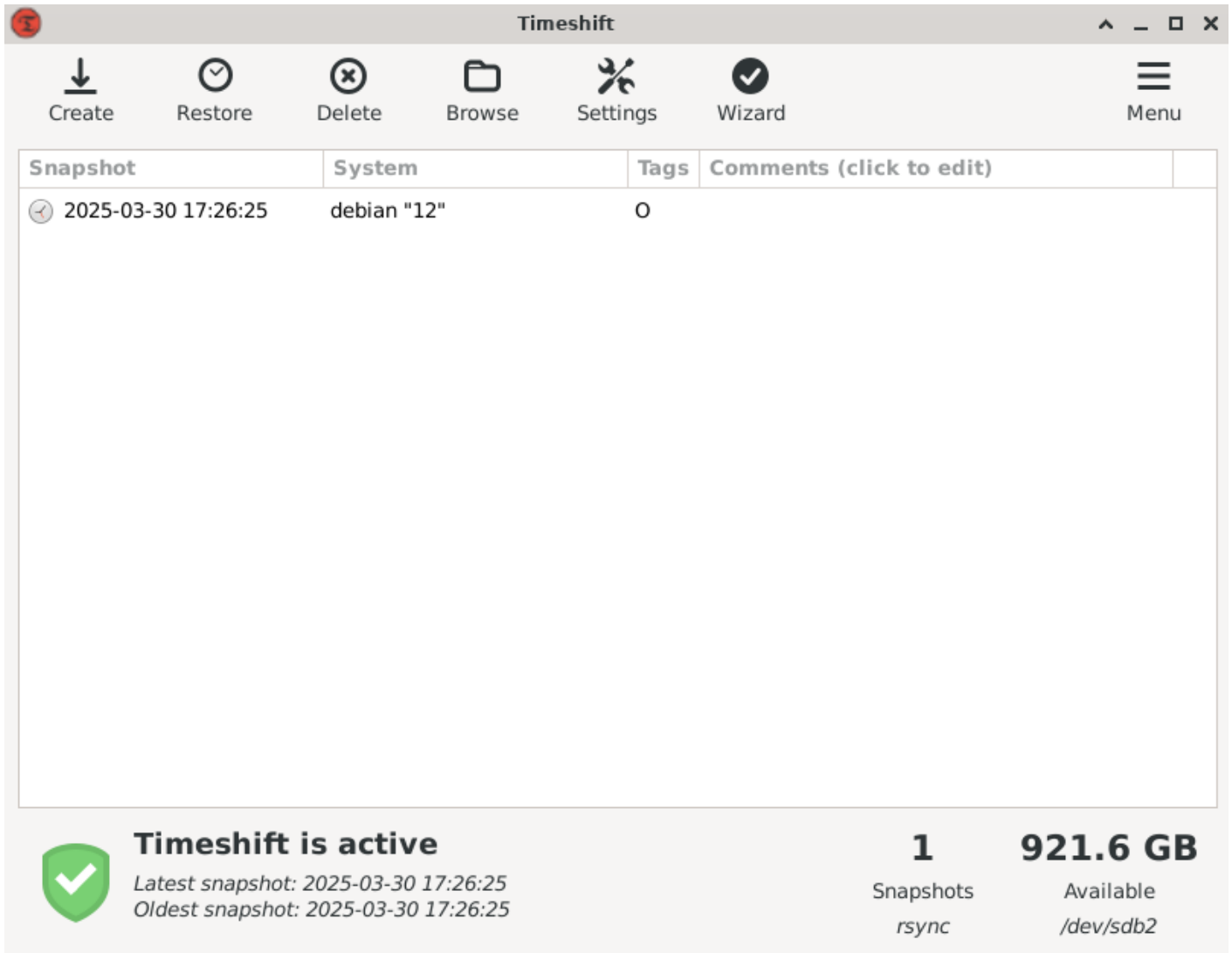
Backup Solutions

All servers need an effective and consistent backup solution in case something goes wrong.

- [Local Backup](#)
- [Remote Backup](#)

Local Backup

You can never know when a hard drive will fail or a software update will cause your operating system to fail to boot. It's always best to be prepared and build yourself a safety net. A simple yet effective backup solution is simply an external hard drive connected to your server.



The screenshot shows the Timeshift application window. The title bar reads "Timeshift". The top toolbar contains icons for "Create", "Restore", "Delete", "Browse", "Settings", "Wizard", and "Menu". Below the toolbar is a table with the following columns: "Snapshot", "System", "Tags", and "Comments (click to edit)". A single row is visible with the following data:

Snapshot	System	Tags	Comments (click to edit)
2025-03-30 17:26:25	debian "12"	0	

At the bottom of the window, there is a status bar. On the left, a green checkmark icon is next to the text "Timeshift is active". Below this, it says "Latest snapshot: 2025-03-30 17:26:25" and "Oldest snapshot: 2025-03-30 17:26:25". On the right, it shows "1" snapshots and "921.6 GB" available space. Below these numbers, it says "rsync" and "/dev/sdb2".

[Timeshift](#) is an application that runs in the background on your server and performs backups to a local storage drive. This service only copies files as they change, making it easy to perform incremental backups daily or weekly. These can be created on a schedule and old backups being automatically deleted to free up space as needed. In the event of a storage drive failure, we can use the command line version of Timeshift to restore our system from the latest backup.

We can install Timeshift using the terminal:

```
sudo apt-get install -y timeshift
```

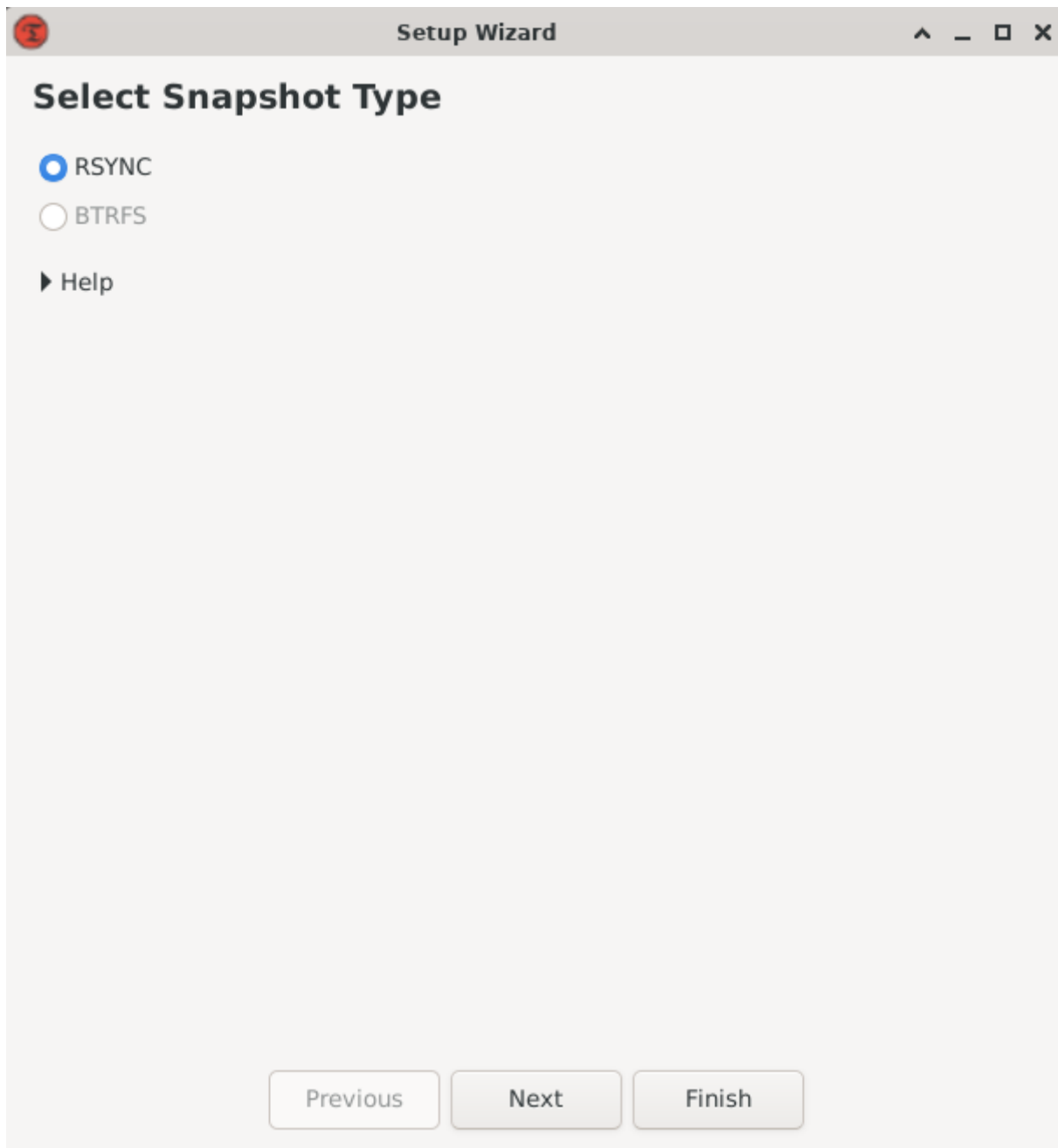
Once installed, we can open it with:

```
sudo timeshift-gtk
```

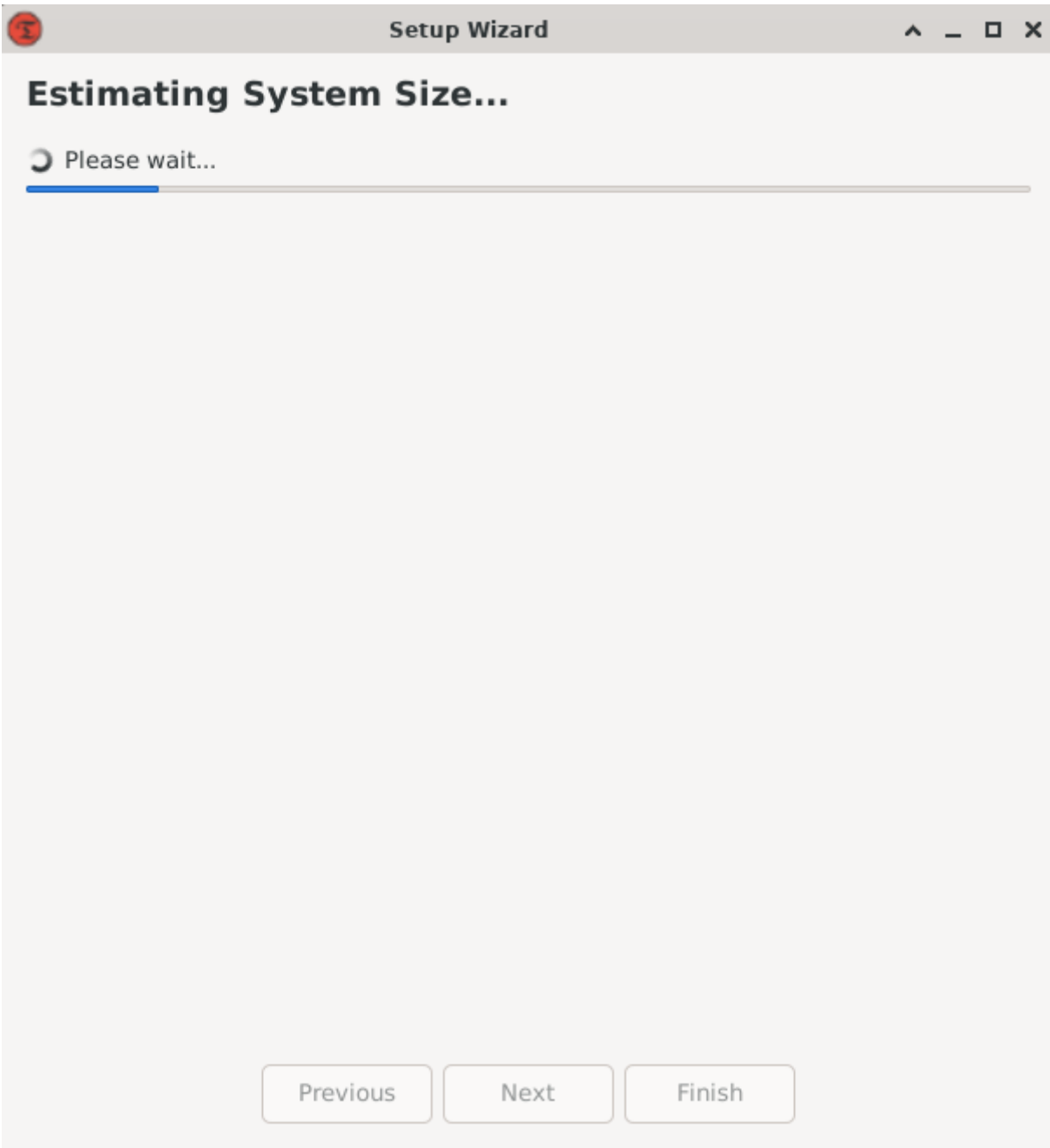
While connecting through RDP, this terminal command temporarily allows the root user's GUI applications to launch through your user account:

```
xhost si:localuser:root
```

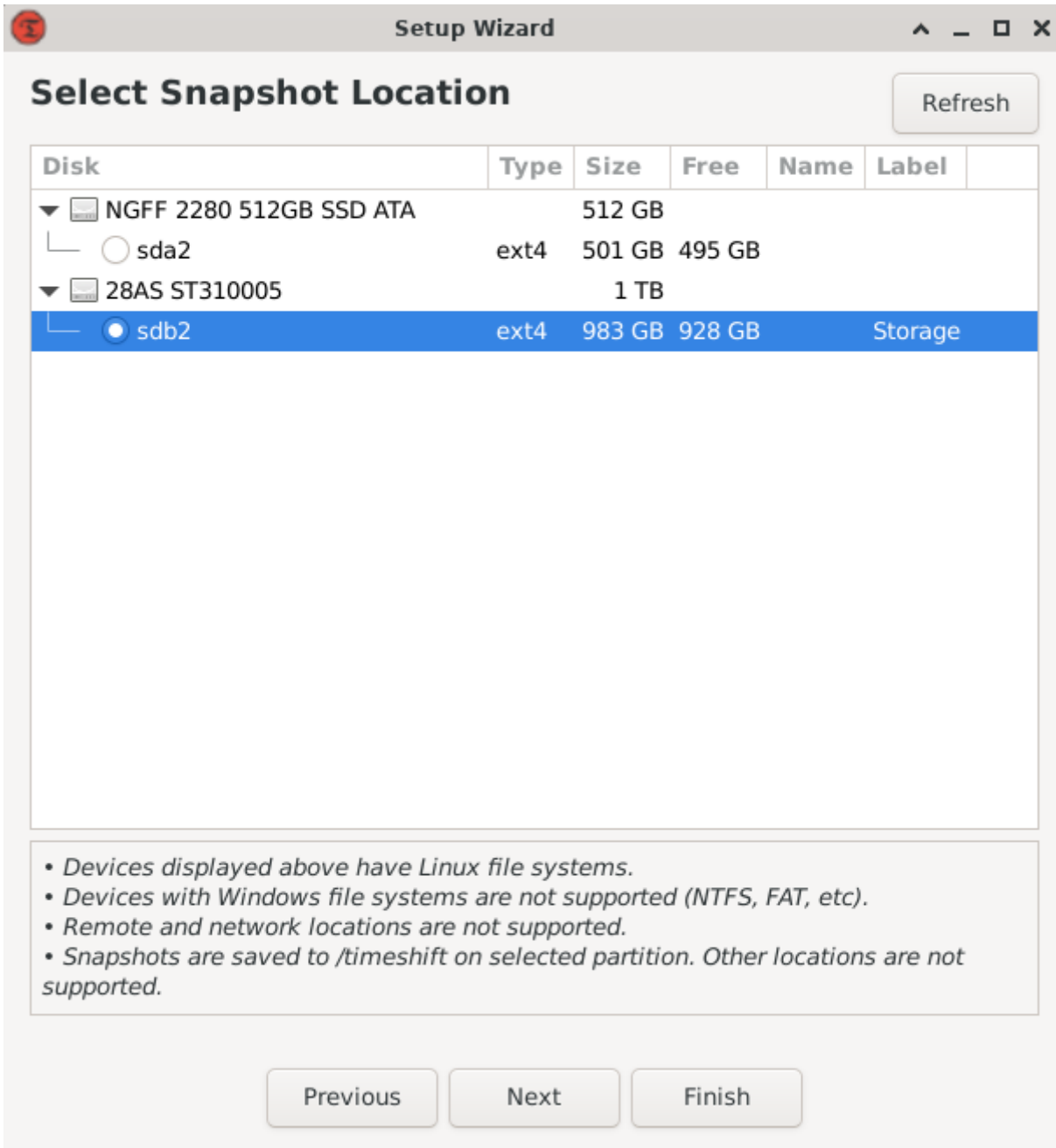
The first time we open Timeshift, it'll start a configuration wizard.



We will be asked what Snapshot style we want to use for our backups and select 'rsync'. [Rsync](#) is open-source command-line application that specializes with incremental file transfers.



Timeshift will estimate the backup size by scanning our system files. This should not take long because we are setting up a brand new operating system.




Once it's completed, we'll be asked where we will be storing our backups. We will select the Storage drive that [we mounted earlier](#). Timeshift will create a folder within the root of that drive, in our case: `/mnt/storage/Timeshift`.

Setup Wizard

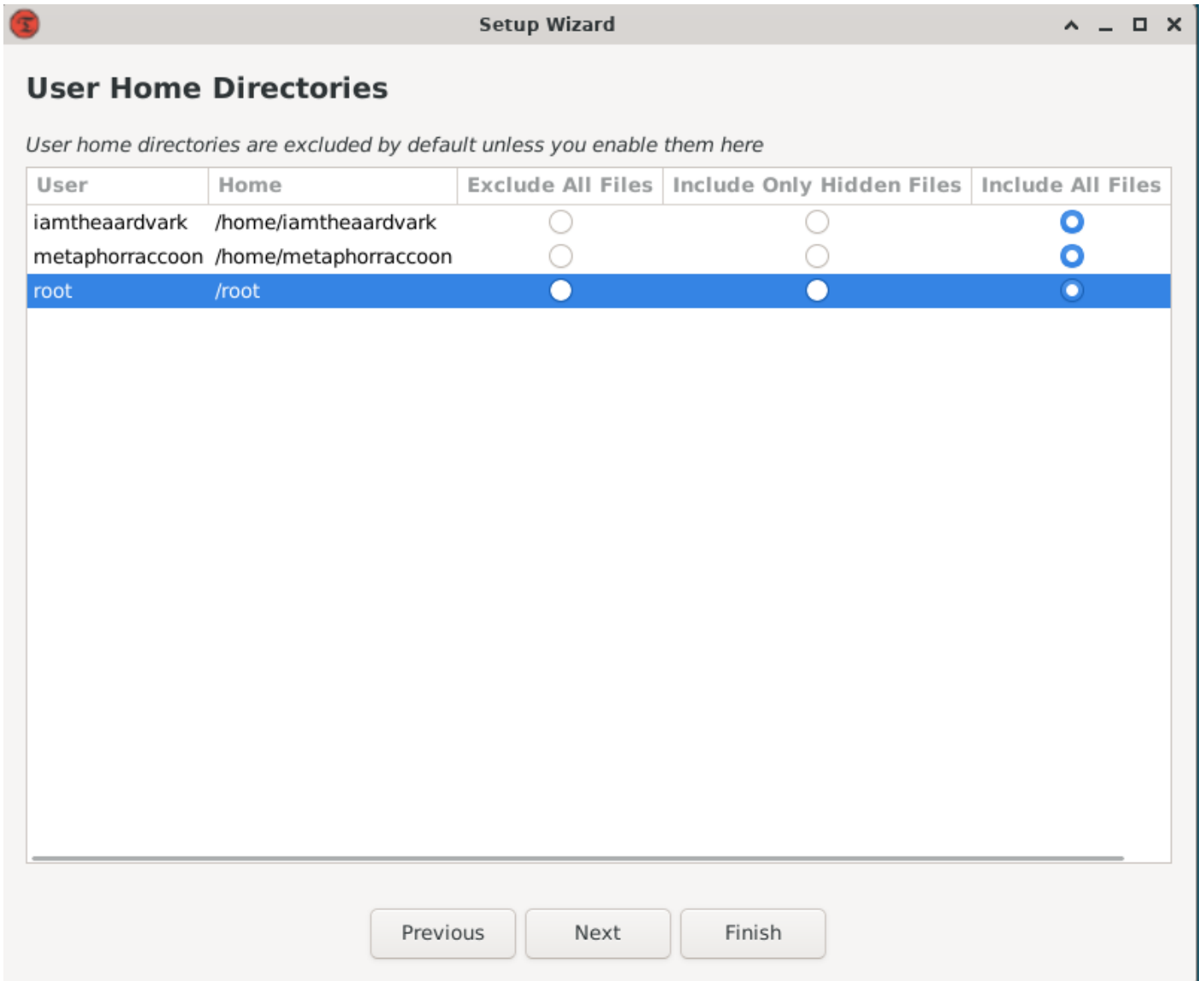
Select Snapshot Levels

Monthly Keep Weekly Keep Daily Keep Hourly Keep Boot Keep Stop cron emails for scheduled tasks

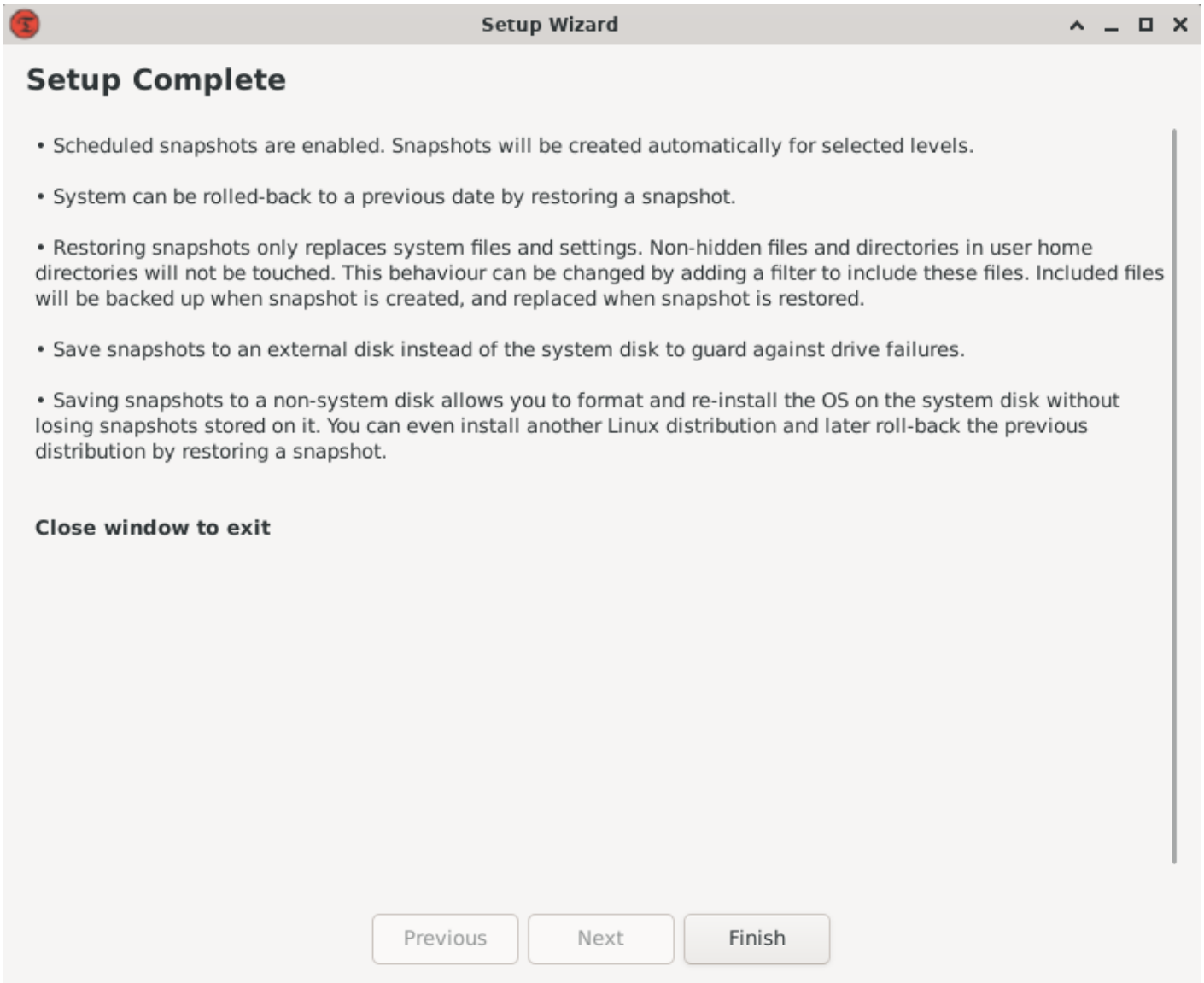
- Snapshots are not scheduled at fixed times.
- A maintenance task runs once every hour and creates snapshots as needed.
- Boot snapshots are created with a delay of 10 minutes after system startup.

 **Scheduled snapshots are enabled**
Snapshots will be created at selected intervals if snapshot disk has enough space (> 1 GB)

Next, we'll have choose our snapshot level. This allows us to customize how often we want our backups to run, as well as how many to keep. Weekly backups are a great starting point, but running them nightly can help you get back up and running faster. Enabling monthly, weekly, and daily backups will provide the most protection by ensuring you have received data going back months.





Timeshift will ask if you want to backup the home directories for root and your account system accounts. We will choose to enable both to include all files.





Now that we have finished setup, we can create our first backup by hitting the `vertical_align_bottom` 'Create' button.


Timeshift
^ _ □ ×



 Create



 Restore


 Delete



 Browse


 Settings


 Wizard


 Menu

Snapshot	System	Tags	Comments (click to edit)



Timeshift is active

Snapshots will be created at selected intervals

0

Snapshots

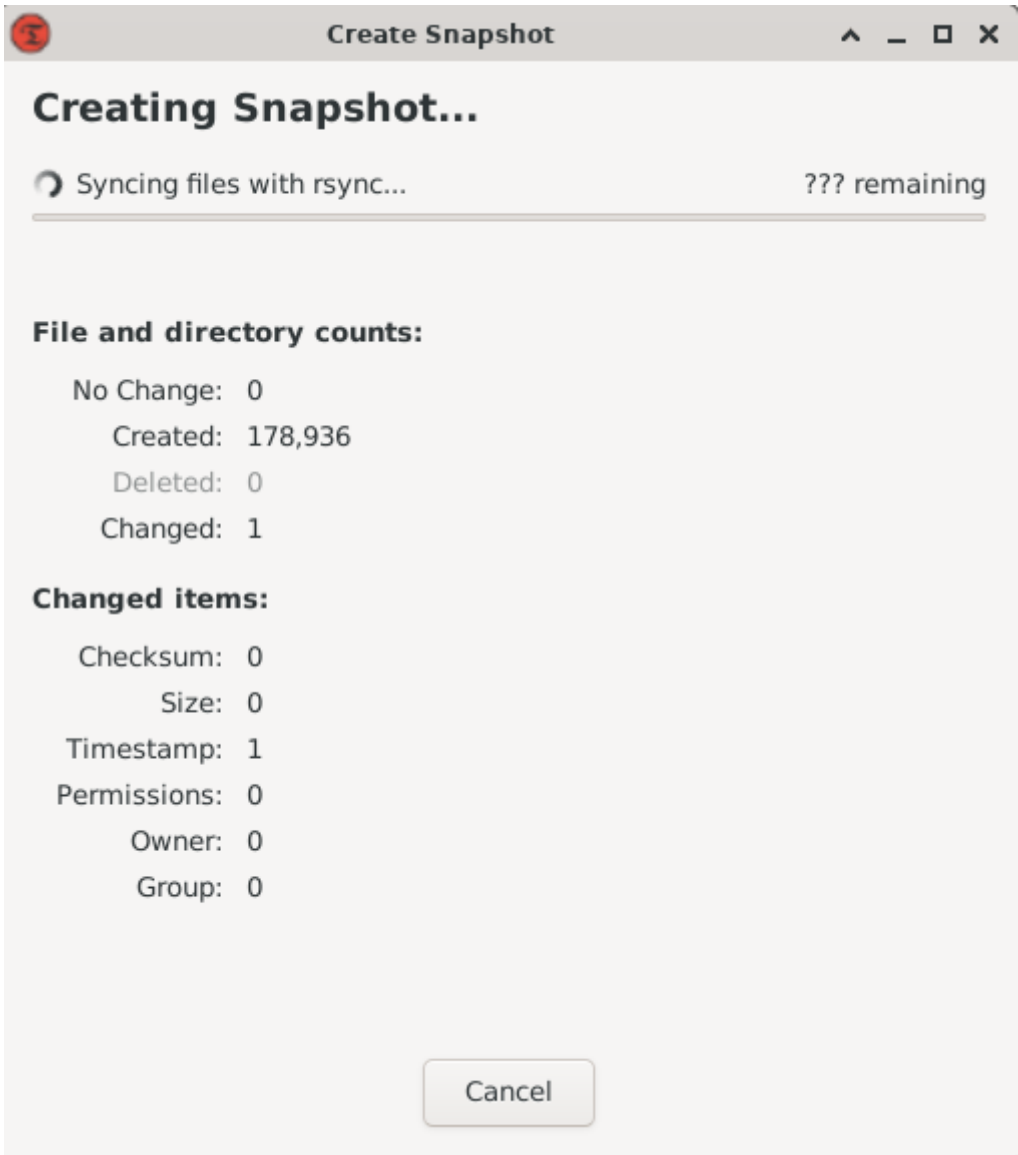
rsync

928.2 GB

Available

/dev/sdb2

A window will appear to show us the current progress. The first backup of your freshly installed operating system shouldn't take too long.



Once the backup is completed, you're safe in the event of a backup.

Timeshift
^ _ □ ×

↓
Create
⌚
Restore
⊗
Delete
📁
Browse
⚙️
Settings
✔️
Wizard
☰
Menu

Snapshot	System	Tags	Comments (click to edit)
🕒 2025-03-30 17:26:25	debian "12"	0	

Timeshift is active

Latest snapshot: 2025-03-30 17:26:25

Oldest snapshot: 2025-03-30 17:26:25

1

Snapshots

rsync

921.6 GB

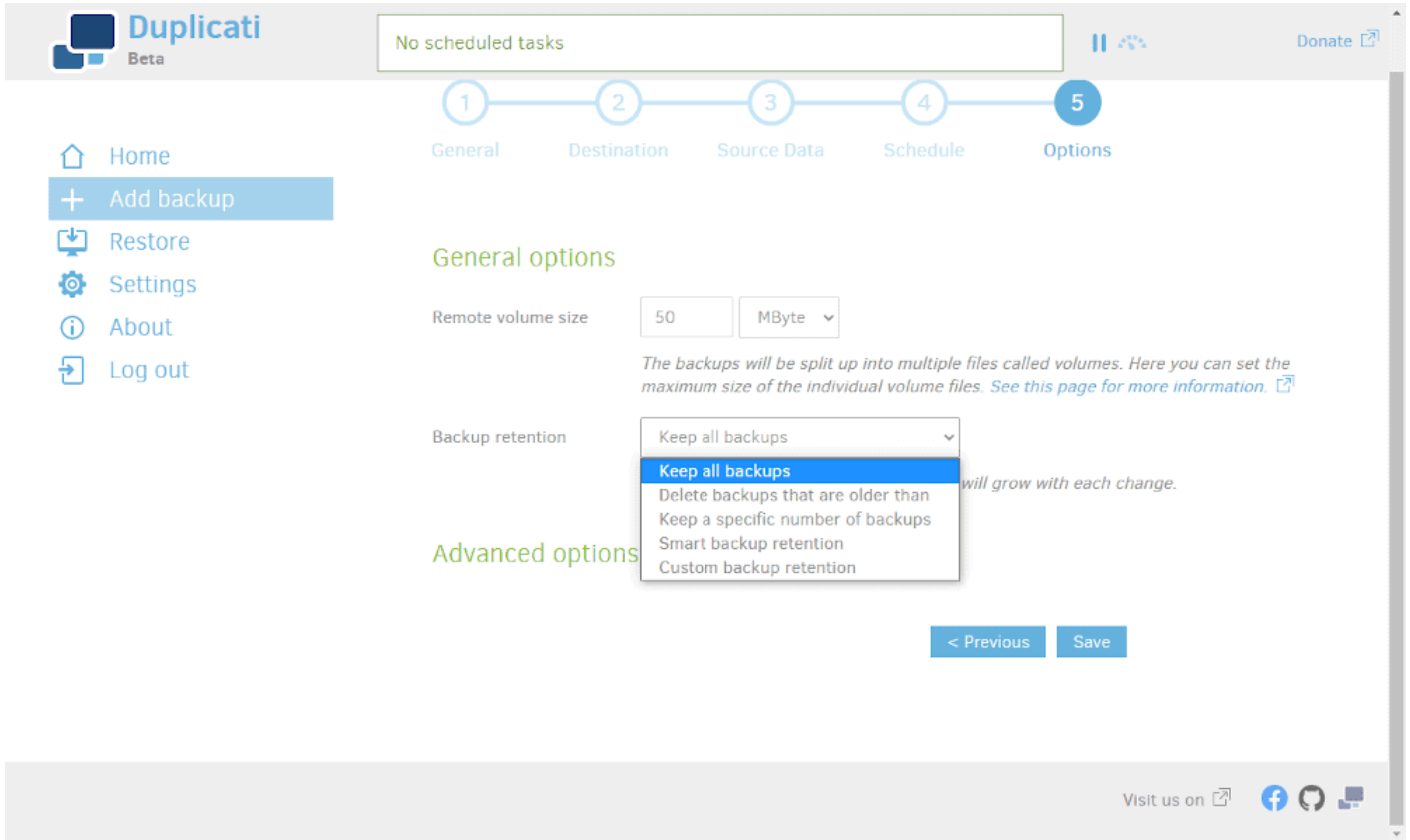
Available

/dev/sdb2

Timeshift will automatically backup your computer on the schedule we selected. [Your system and files can be restored](#) through the graphical interface, on your current system or through a [Debian Live CD](#).

Remote Backup

[Duplicati](#) is a self-hosted service we can access through our browser that let's schedule backups. It can never hurt to have an additional strategy, especially one that is stored outside of your home. Through Duplicati, we can upload encrypted backups to a cloud storage service.



Local backups are perfect to getting your server running after a systems failure while remote backups offer long-term reassurance you'll never lose important personal data. We can use remote backup storage for documents, photos and other data we cannot stand to lose.

In the event of something catastrophic, like a lightning strike disabling your entire server or a fire, storing your more important data elsewhere can be a life saver. This form of cloud storage is excellent as a decentralized strategy because the data is still fully in our control, using secure encryption and a filing system only we understand.

We will be focusing on a cloud storage service provided by Backblaze known as "B2 Buckets." These storage buckets are affordably priced, per terabyte of data, and come with unlimited bandwidth for uploading files to their service. Downloading large amounts of data, however, can accrue fees per gigabyte. Therefore, cloud storage is a great safety net to have in the event of catastrophic data loss.

We can install Duplicati through Portainer now that we have that all set up.