Disk Settings

This feature is supported from Eunhasu V0.6.6.

This page manages the disks connected to your Eunhasu device. You can initialize disks, create and delete partitions, format, mount, and configure LVM.

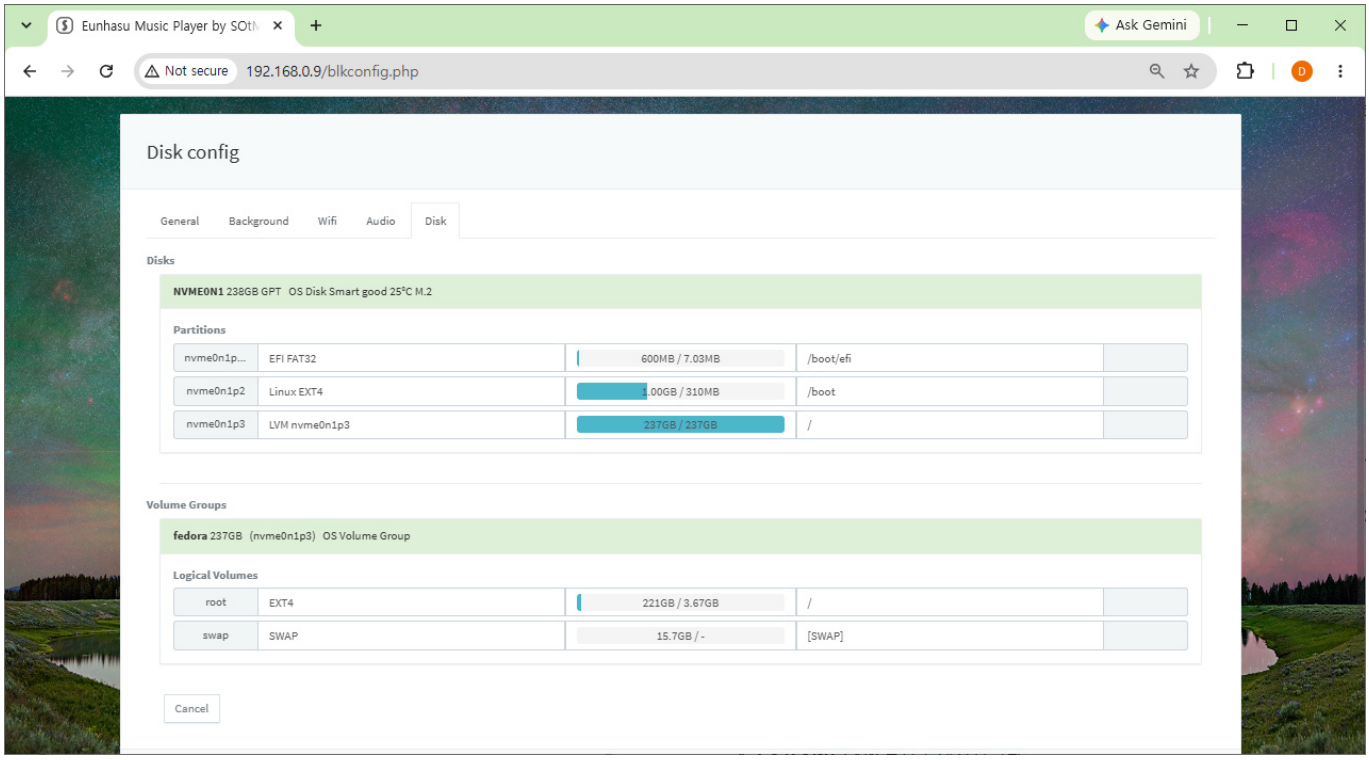
Disk information can be viewed on all models (sMS-200, sMS-200ultra, sMS-500, sMS-1000SQ, sMS-2000), but adding a disk is only possible on the sMS-1000SQ and sMS-2000.

Overview

You can add a disk to the network player to increase storage space for music files, or replace the disk you are using. A new disk cannot be used just by connecting it; you must create a partition, format it, and mount it to a folder. The Disk config page lets you do all of this on screen without entering any commands, and also supports LVM, which combines multiple disks into a single storage space.

Terms

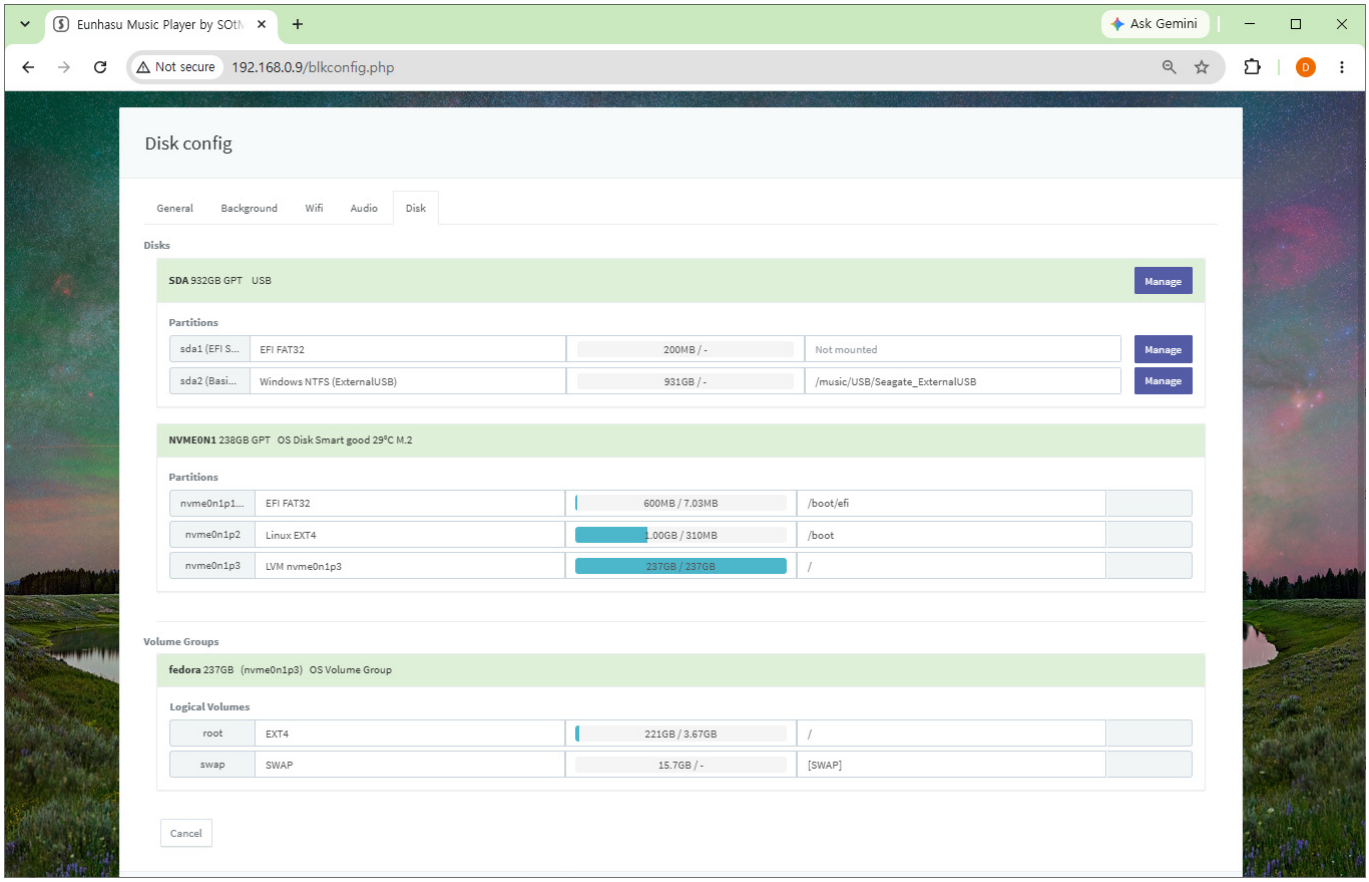
- **Disk**: A device that stores data. There are internal disks (SSD, HDD) installed inside the product and USB disks connected via USB.
- **Partition**: A section of a disk divided into separate areas. The entire disk can also be used as a single partition.
- **Partition table (GPT/MBR)**: The format that manages a disk's partition information. There are two types, MBR and GPT. MBR can only be used on disks of 2TB or less, while GPT has no capacity limit. GPT is generally used.
- **File system**: The method used to store and manage files on a partition. Disk config supports ext4, XFS, exFAT, and NTFS; ext4 is generally used.
- **Format**: Creating a new file system on a partition. All data stored on the partition is deleted.
- **Mount**: Connecting a formatted partition to a specific folder (Mount point). Once mounted, files can be saved and read through that folder. Unmount disconnects this link; stored data is not deleted.
- **LVM (Logical Volume Manager)**: A disk management method that pools space from multiple disks and divides it into the sizes you need. It consists of three layers, PV, VG, and LV, and lets you increase the capacity of a volume in use by adding disks.
- **PV (Physical Volume)**: A disk partition registered for use with LVM. A PV cannot be formatted or mounted directly; it must be added to a VG to be used.
- **VG (Volume Group)**: A single storage space made by combining one or more PVs. The capacity of a VG is the total capacity of the PVs it contains. A VG also cannot be formatted or mounted directly; you must create an LV to use it.
- **LV (Logical Volume)**: A storage area created by taking the size you need from a VG's space. It is formatted and mounted like a regular partition, and an LV created from a VG made up of multiple disks can be used like a single disk.



- **Disks**: The list of disks connected to the network player. Each disk shows its name (e.g., SDA, NVME0N1), total capacity, partition table (GPT/MBR), disk status (Smart good), temperature, and connection type (SATA, M.2). Below it, Partitions lists the partitions on the disk.
- **OS Disk**: The boot disk on which the network player's operating system is installed. To protect the system, no Manage button is shown, and its partitions cannot be changed or deleted. The OS Volume Group (fedora) also cannot be modified for the same reason.
- **No partition**: A disk with no partitions. Shown for a newly connected disk or a disk whose partitions have all been removed.
- **Partition type**: The type of each partition is shown. Linux EXT4 is a regular partition, and LVM is a PV (LVM partition).
- **Volume Groups**: The list of LVM Volume groups (VGs). Each VG shows its name, total capacity, and included partitions. Below it, Logical Volumes lists the Logical volumes (LVs) in the VG.
- **Capacity (Total / Used)**: Shows the total and used capacity as a bar graph and numbers. Regular partitions and LVs show the size of stored files. A PV shows the capacity allocated to LVs, so even if its usage is shown as 100%, the actual storage space is not necessarily full.
- **Mount point**: The folder a partition or LV is connected to (e.g., /music/data). Not mounted means it has not been mounted yet. A PV shows the name of the VG it belongs to, and a PV that does not belong to any VG is shown as No volume group.
- **Manage**: Opens the action menu for a disk, partition, VG, or LV. How to use each menu is explained below, from 'USB Disk' through 'Removing a Disk'.

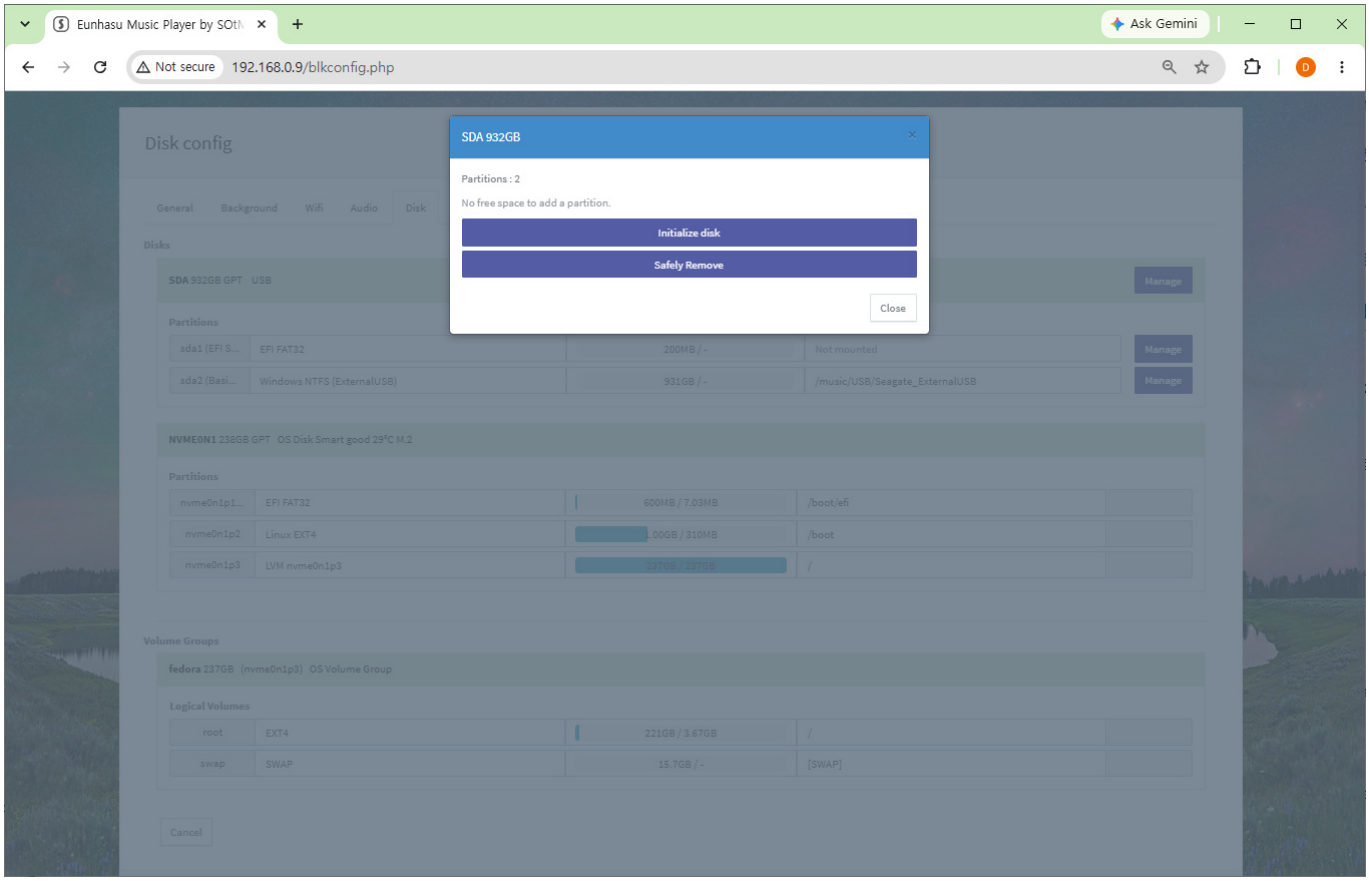
USB Disk

A USB disk is mounted automatically when connected and can be used right away. Use the functions below when initializing a USB disk, creating a new partition, or before disconnecting it.



- A USB disk is marked USB next to the disk name.
- Partitions on a USB disk are mounted automatically to the Mount point /music/USB/(disk name). Disks formatted with other file systems such as NTFS can also be used.

Clicking Manage on a USB disk shows the following menu.



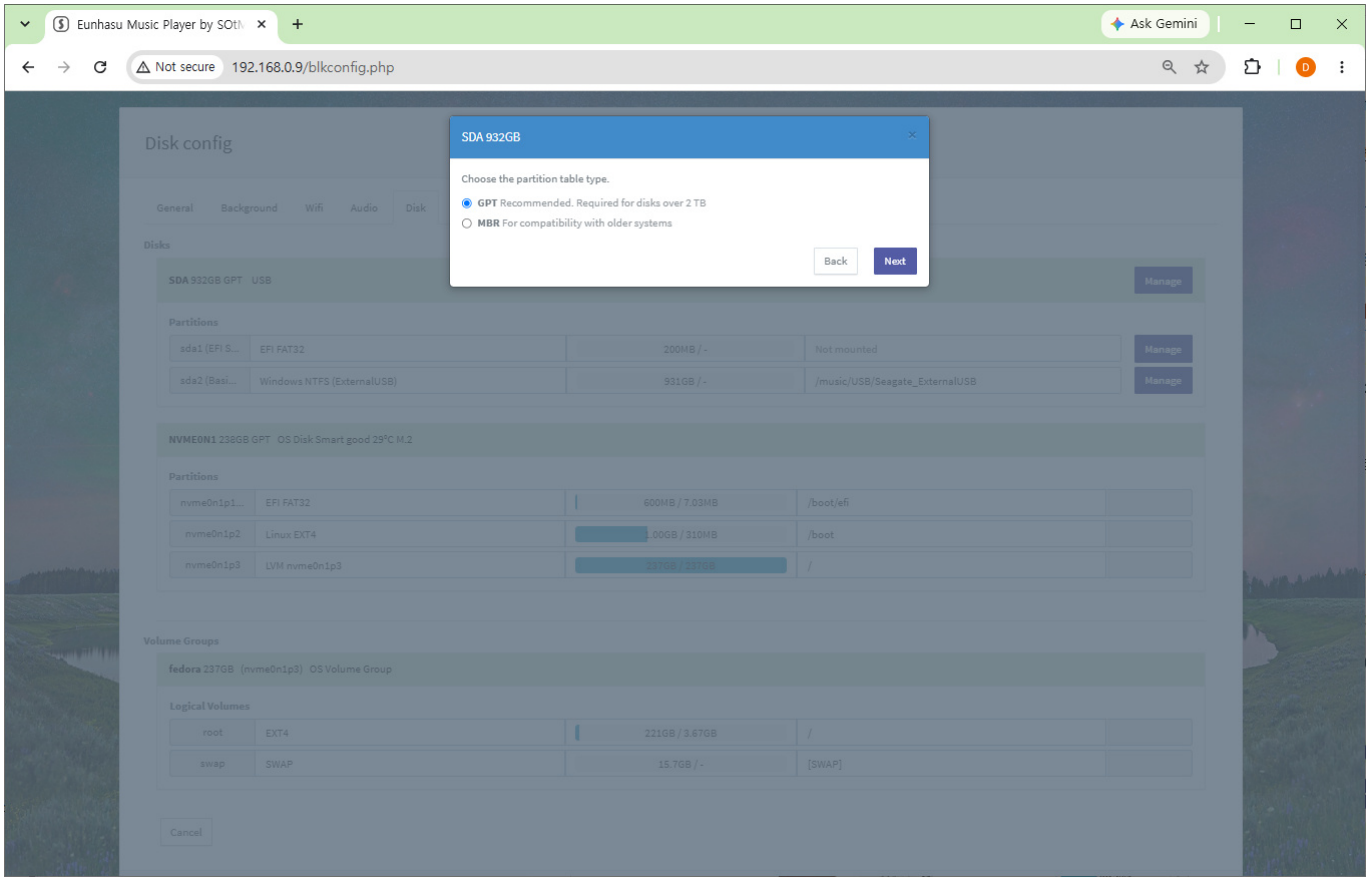
- **Initialize disk**: Initializes the disk. All partitions and data on the disk are deleted.
- **Safely Remove**: Unmounts all partitions on the disk and powers off the disk. Once complete, you can disconnect the USB cable.

The screen above shows a case where a partition uses the entire disk. Because there is no space to create a new partition, “No free space to add a partition.” is shown and the Add partition button does not appear. For an empty disk or a disk with free space, the Add partition button is shown (see 'Creating a Partition' below).

Initializing

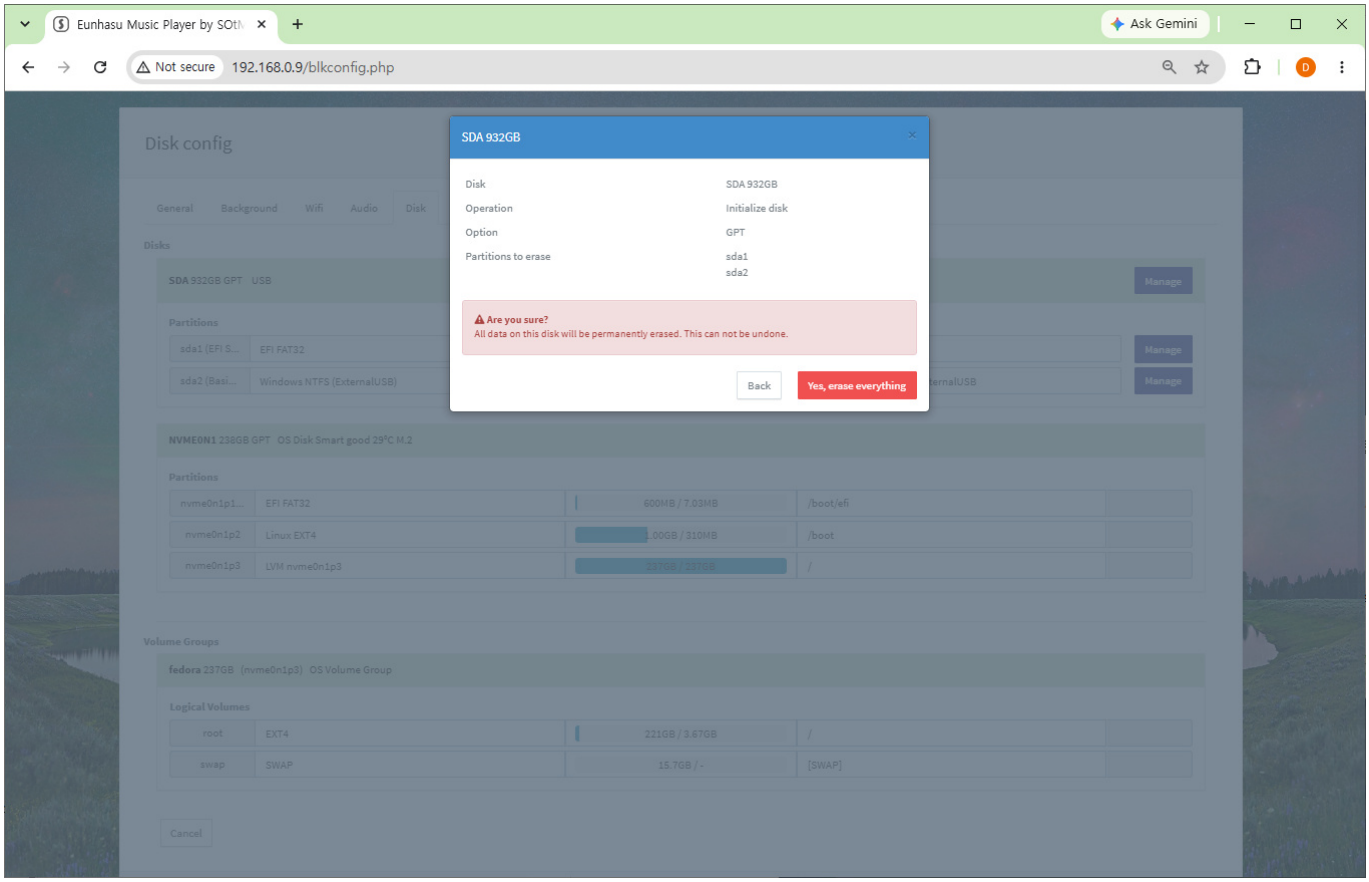
In the USB disk's Manage menu, click Initialize disk. All partitions and data on the disk are deleted.

Select the partition table format and click Next.

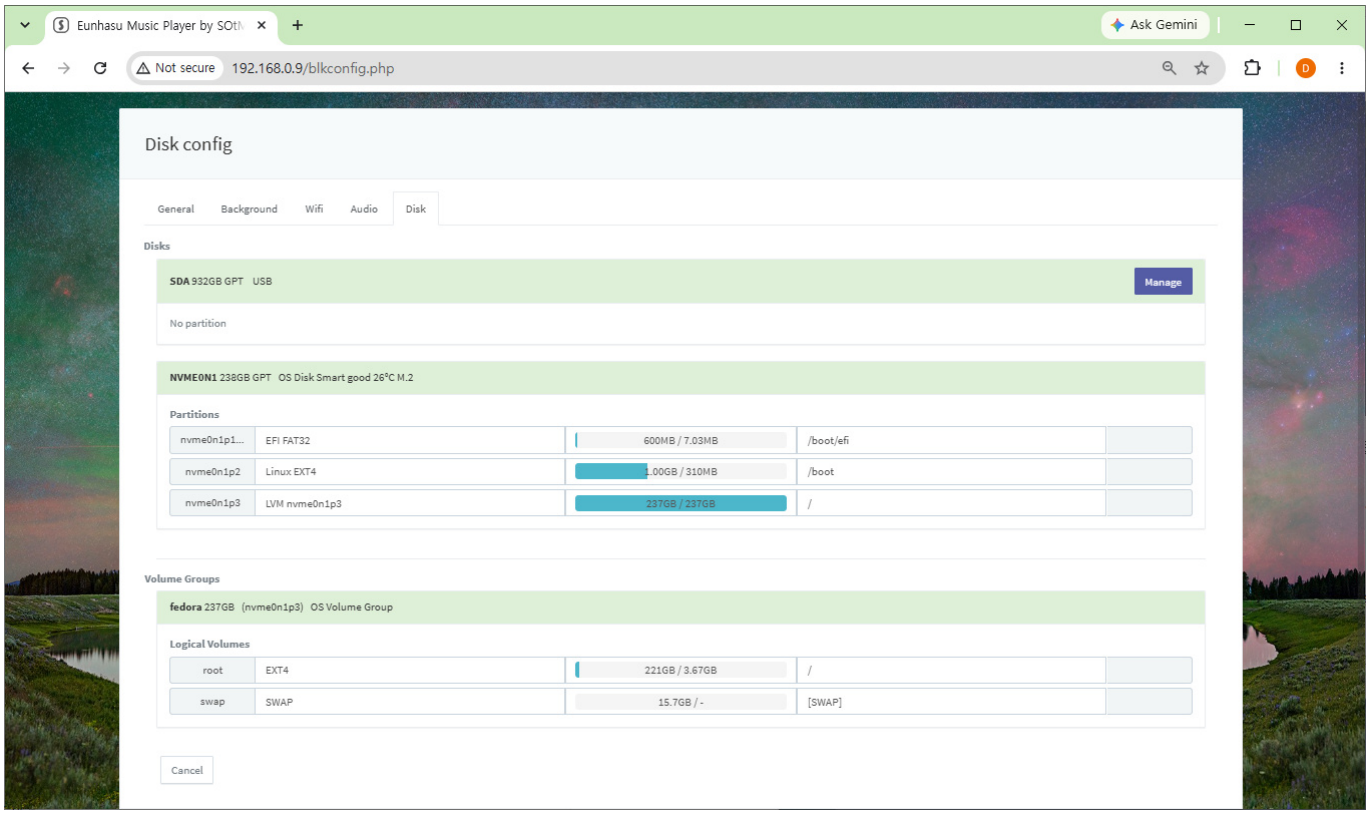


- **GPT**: A partition table format that can be used regardless of disk capacity. GPT is generally selected, and disks larger than 2TB can only use GPT.
- **MBR**: An older partition table format that only supports disks of 2TB or less. Select it only when using the disk with a device that does not support GPT.

On the confirmation screen, check the target disk and the partitions to be deleted (Partitions to erase), then click Yes, erase everything. Deleted data cannot be recovered.

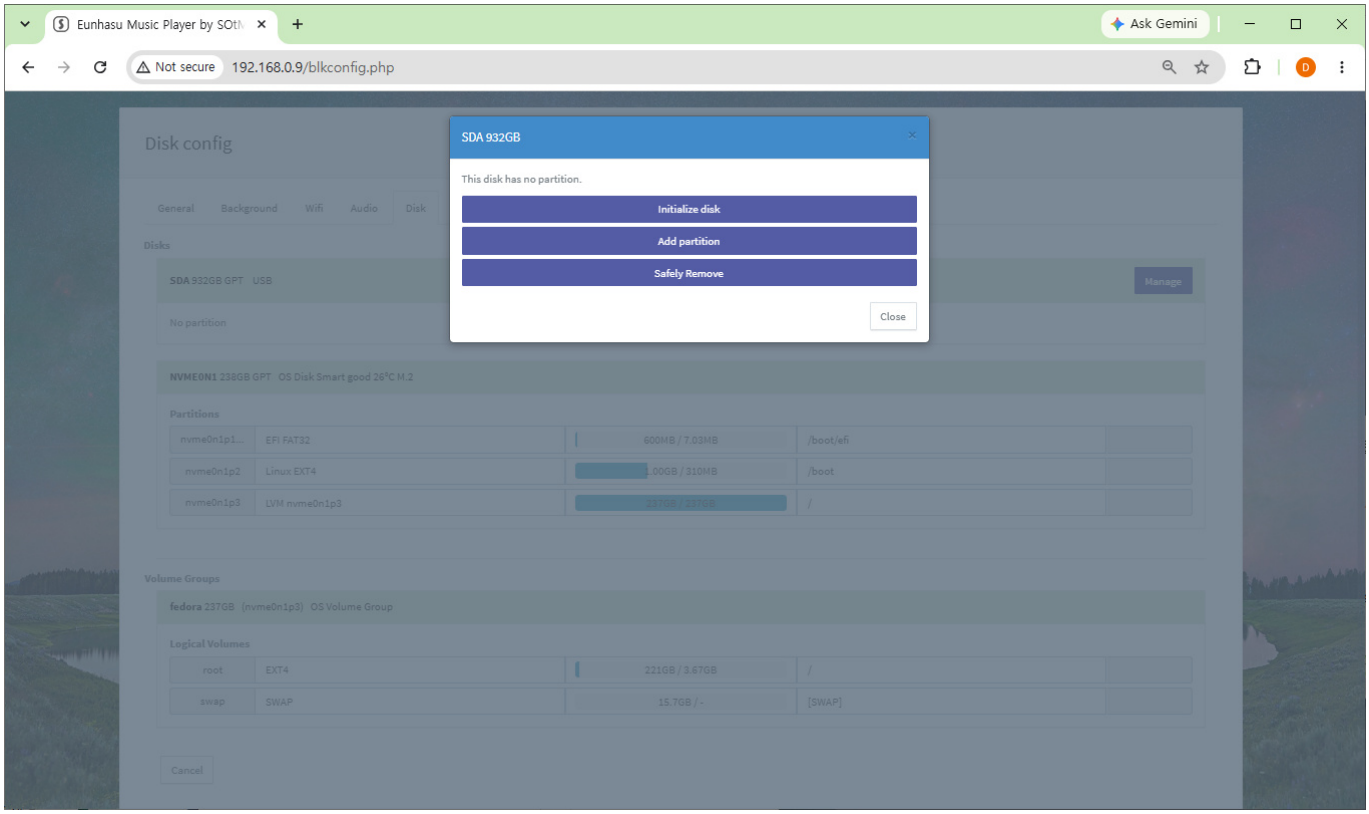


When initialization is complete, the disk shows No partition.

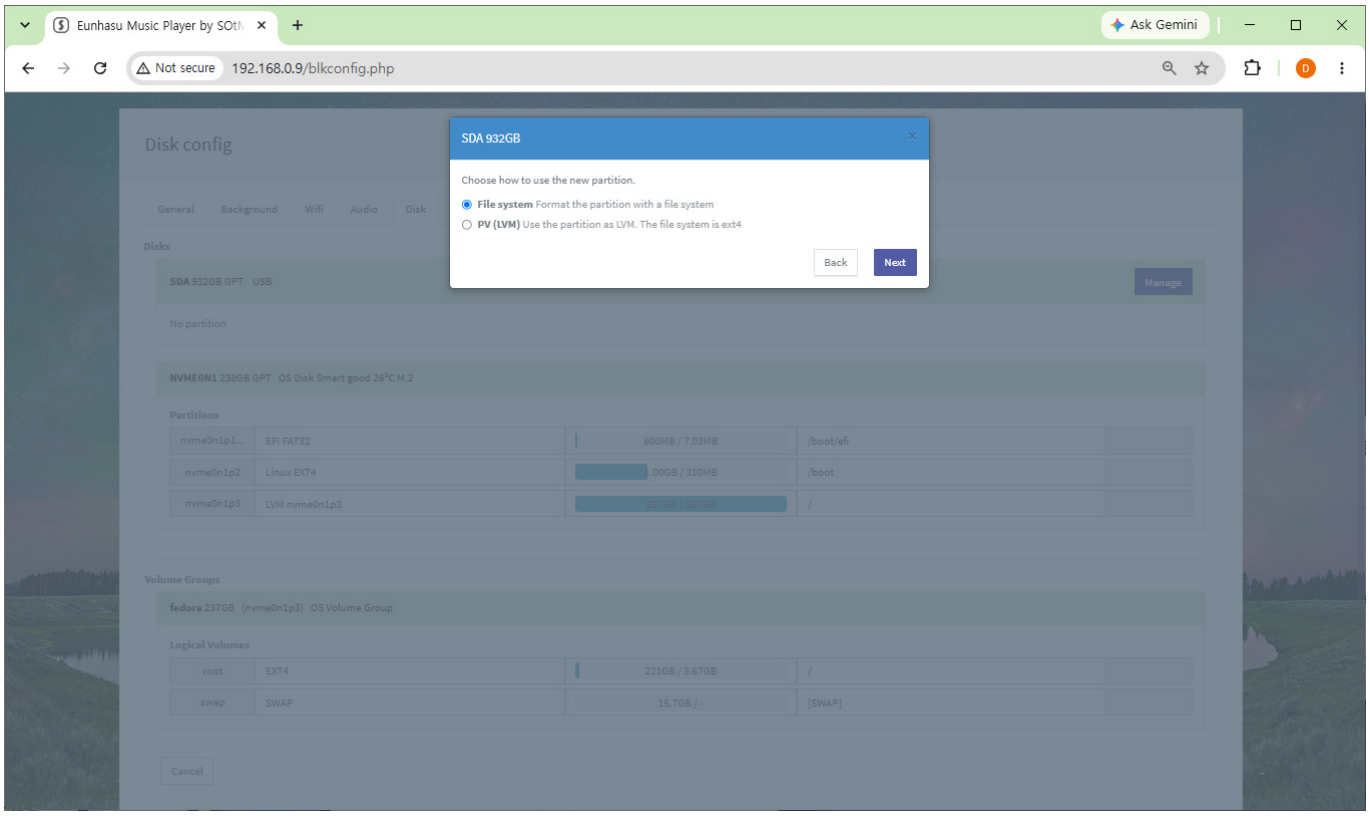


Creating a Partition

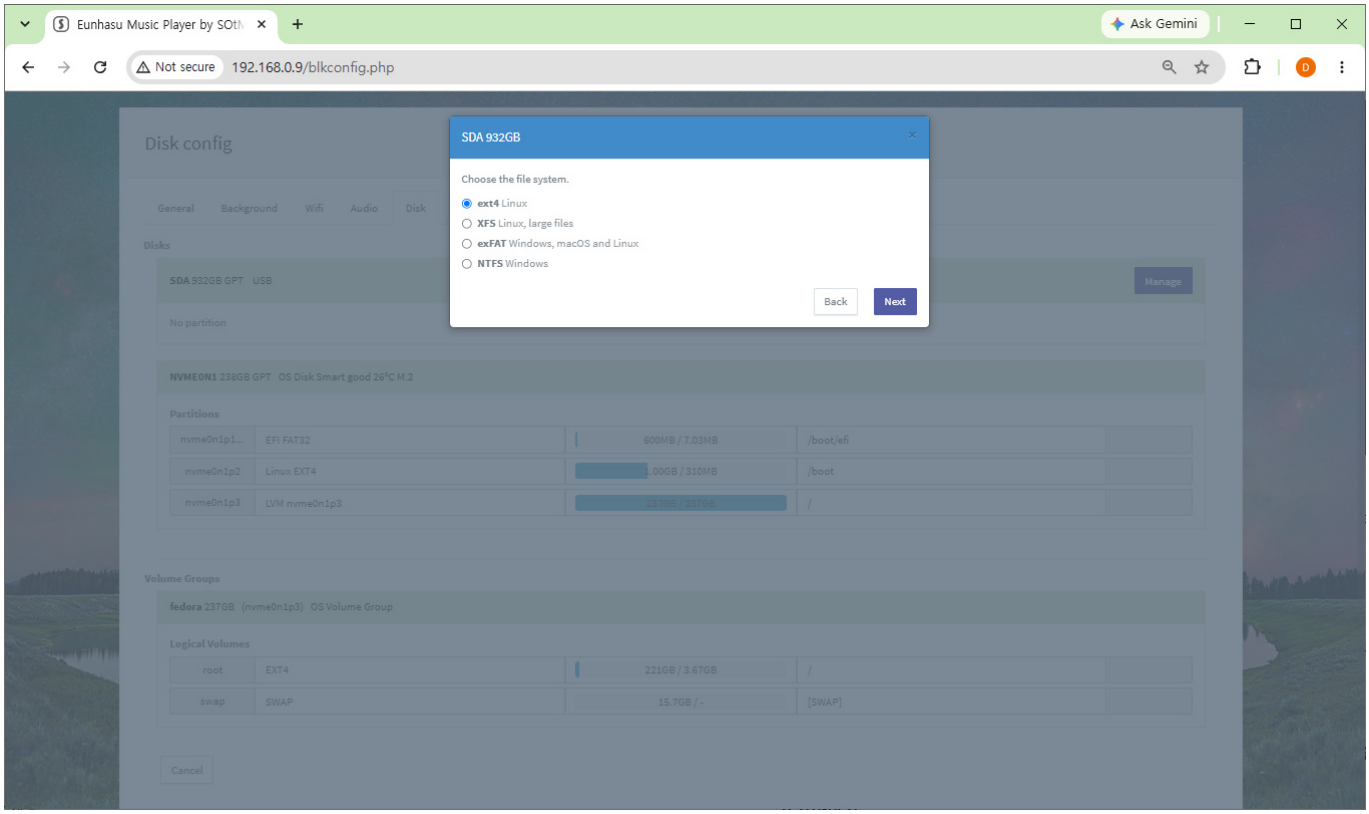
In the USB disk's Manage menu, click Add partition.



Under the usage type, select File system and click Next. A USB disk can be disconnected and reconnected at any time. If it is used as a PV (LVM), the entire Volume group becomes unusable when it is disconnected, so use it as a File system.

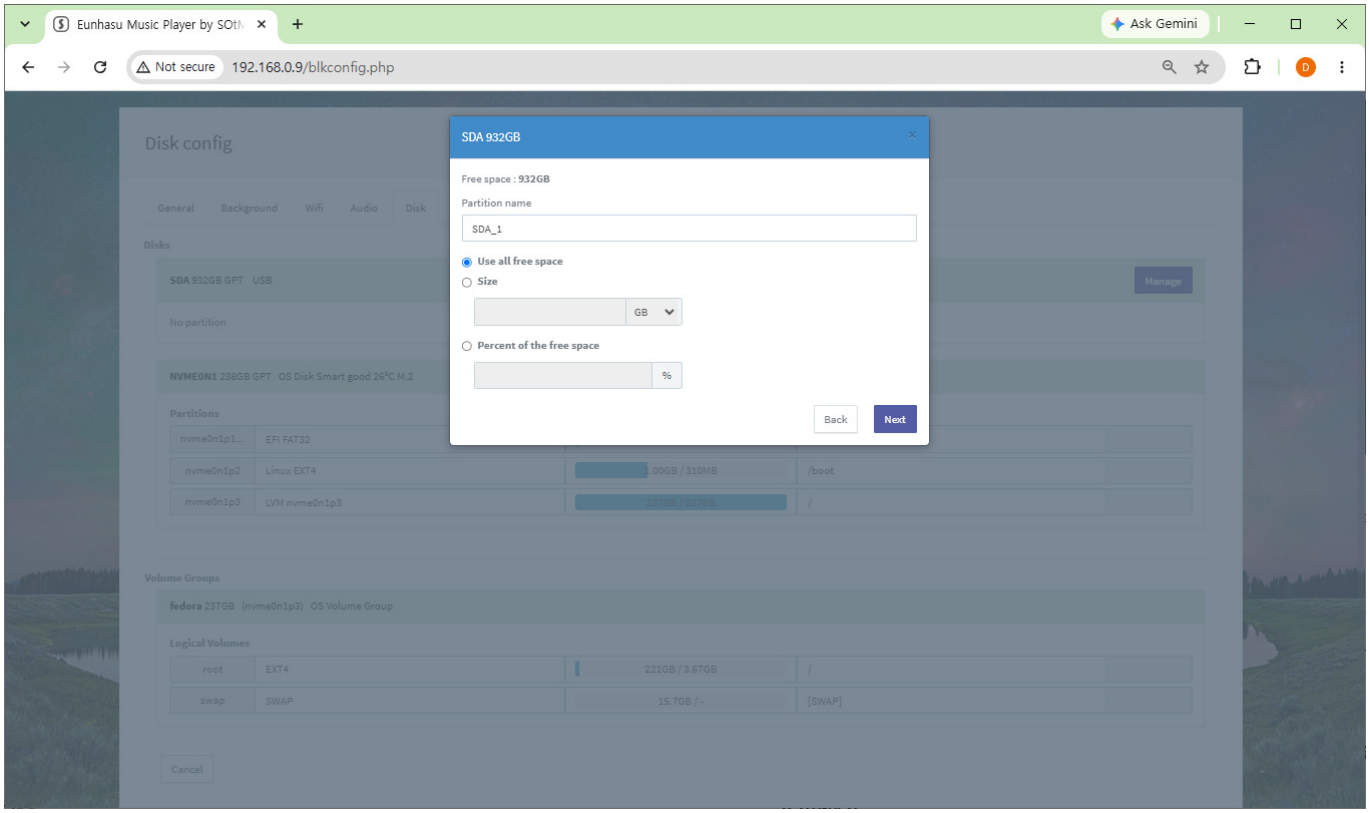


Select the file system type to format with and click Next. ext4 is generally selected.



- **ext4**: The default Linux file system. Recommended if the disk is used only with Eunhasu.
- **XFS**: A Linux file system well suited to handling large files.
- **exFAT**: A file system that can be used on Windows, macOS, and Linux.
- **NTFS**: The default Windows file system.

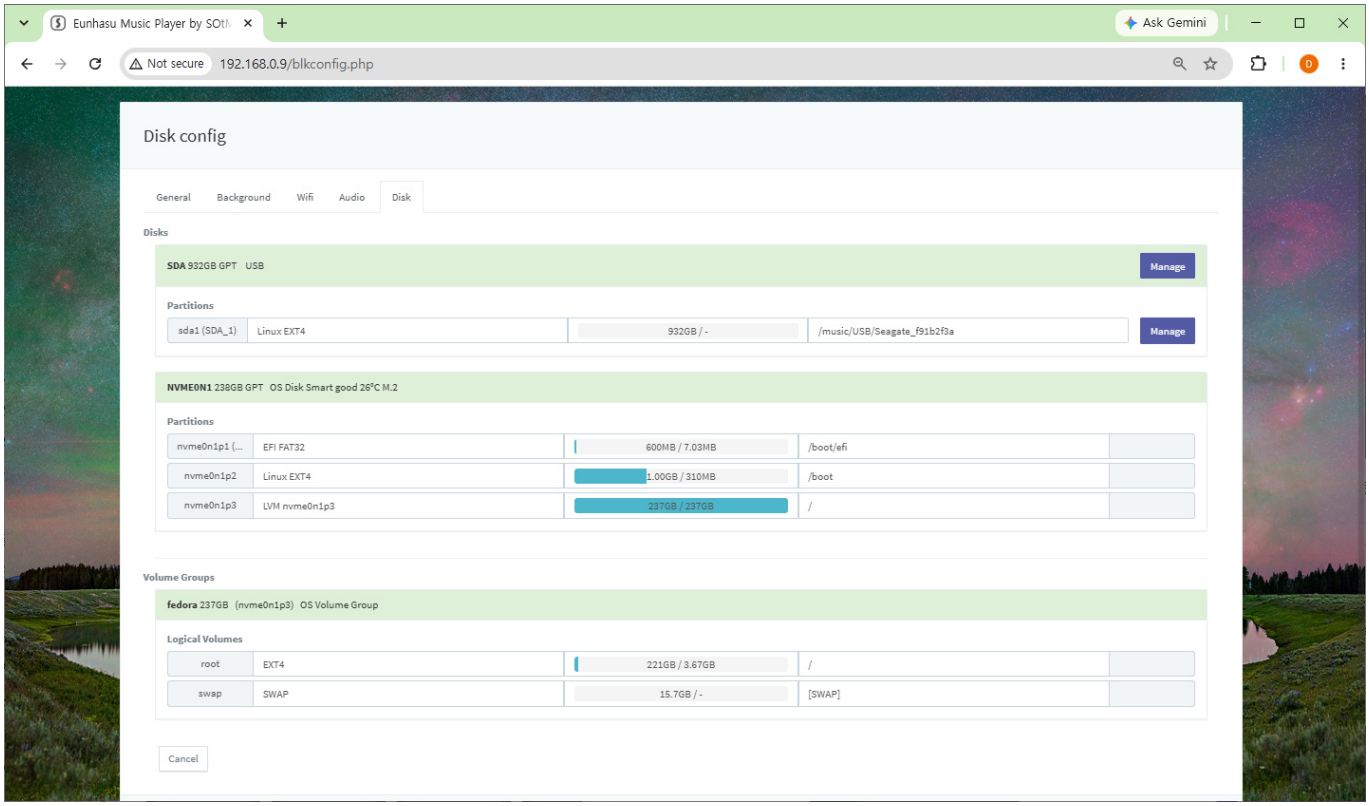
Enter the partition name and size, then click Next.



- **Partition name**: A name used to identify the partition. The default is the disk name followed by a number (e.g., SDA_1), and you can change it if needed.

- **Use all free space**: Creates a partition using all remaining space on the disk. Select this to use the entire disk as one partition.
- **Size**: Enter the partition size directly. Select a unit (GB, etc.) and enter a number. Additional partitions can be created in the remaining space.
- **Percent of the free space**: Enter the percentage (%) of the remaining space to use. For example, entering 50 creates a partition half the size of the remaining space.

On the confirmation screen, check the details and click Confirm. When complete, the partition shows the selected file system (e.g., Linux EXT4) and is mounted automatically to the /music/USB/(disk name) folder. If the screen does not change after the operation finishes, refresh the page (F5).

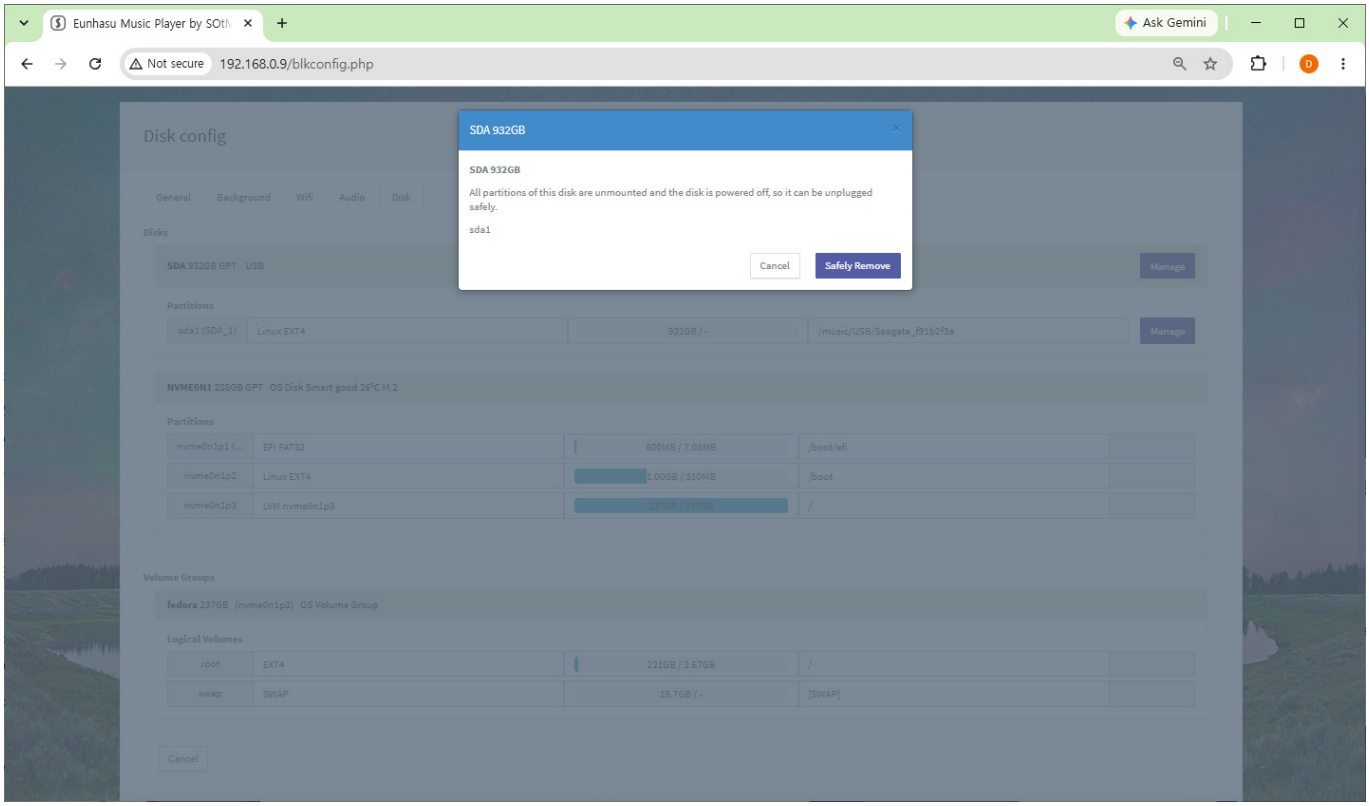


Safely Removing

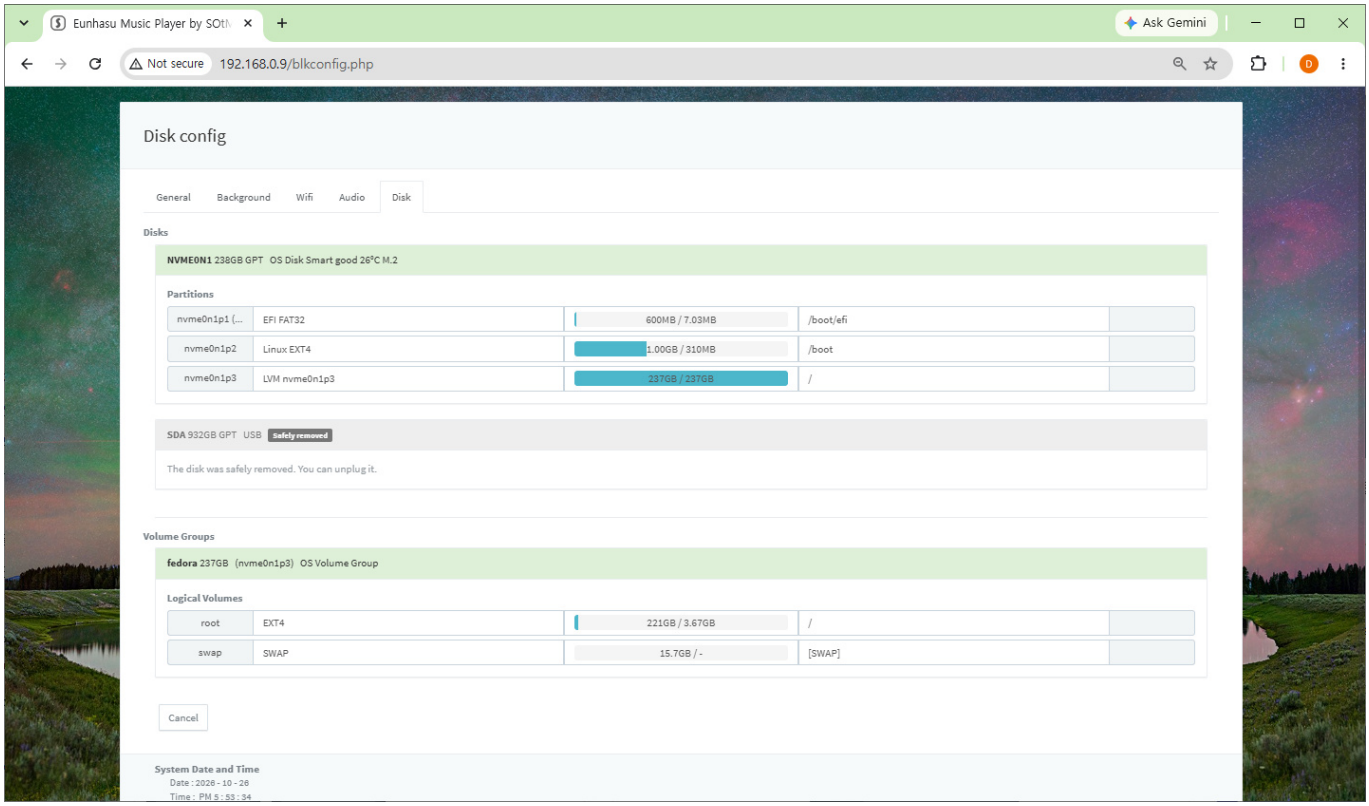
Before disconnecting a USB disk, always click Safely Remove in the disk's Manage menu. Disconnecting the USB cable while the disk is mounted can damage data.

USB disks do not have a separate Unmount button. Clicking Safely Remove unmounts all partitions on the disk and powers off the disk.

On the confirmation screen, click Safely Remove.



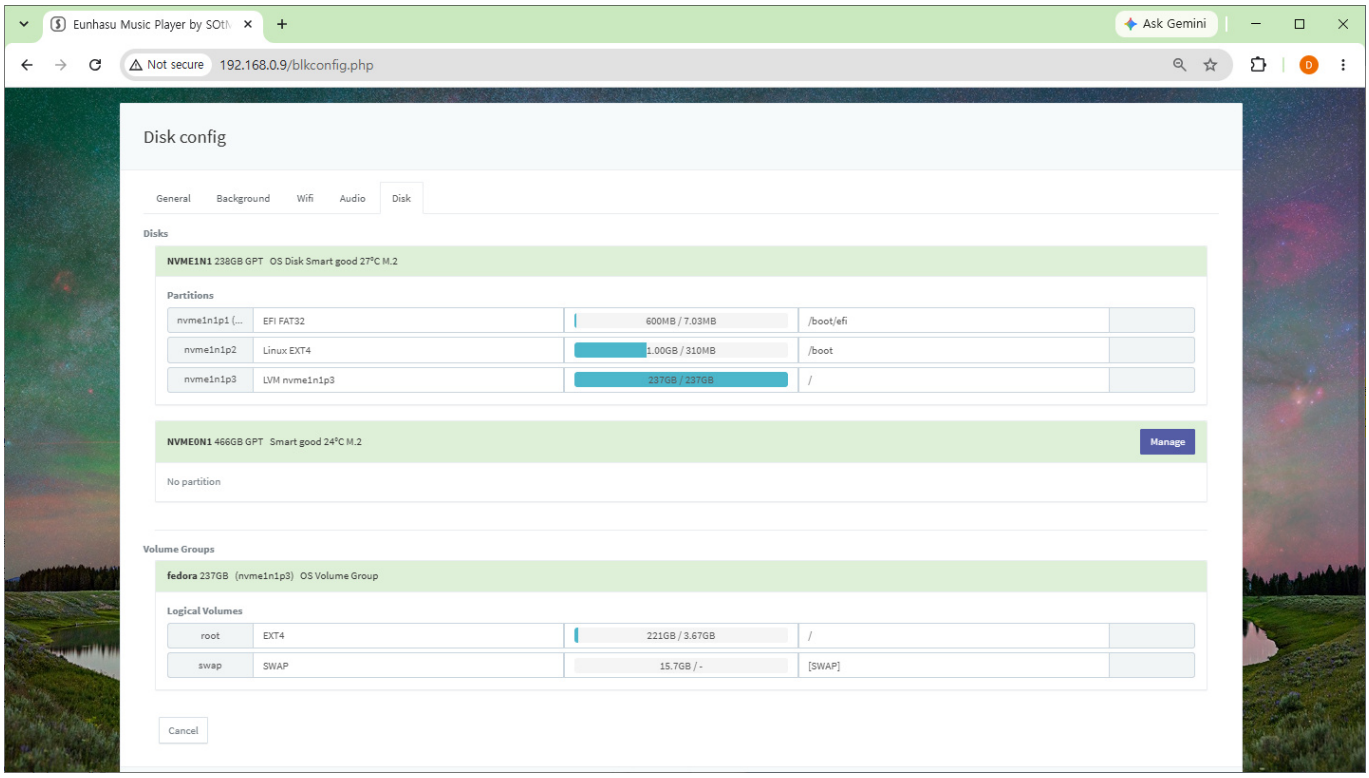
When the disk shows Safely removed, disconnect the USB cable. After refreshing the page, the disk disappears from the list.



Internal Disk – Using as a Regular Partition

This section explains how to use an internal disk as a regular partition. A regular partition is used within a single disk only. To combine multiple disks into one storage space or to increase capacity by adding disks, use LVM (see 'Internal Disk – Using with LVM' below).

When you connect a new disk with the product turned off and then boot, the new disk is shown in Disks as No partition.

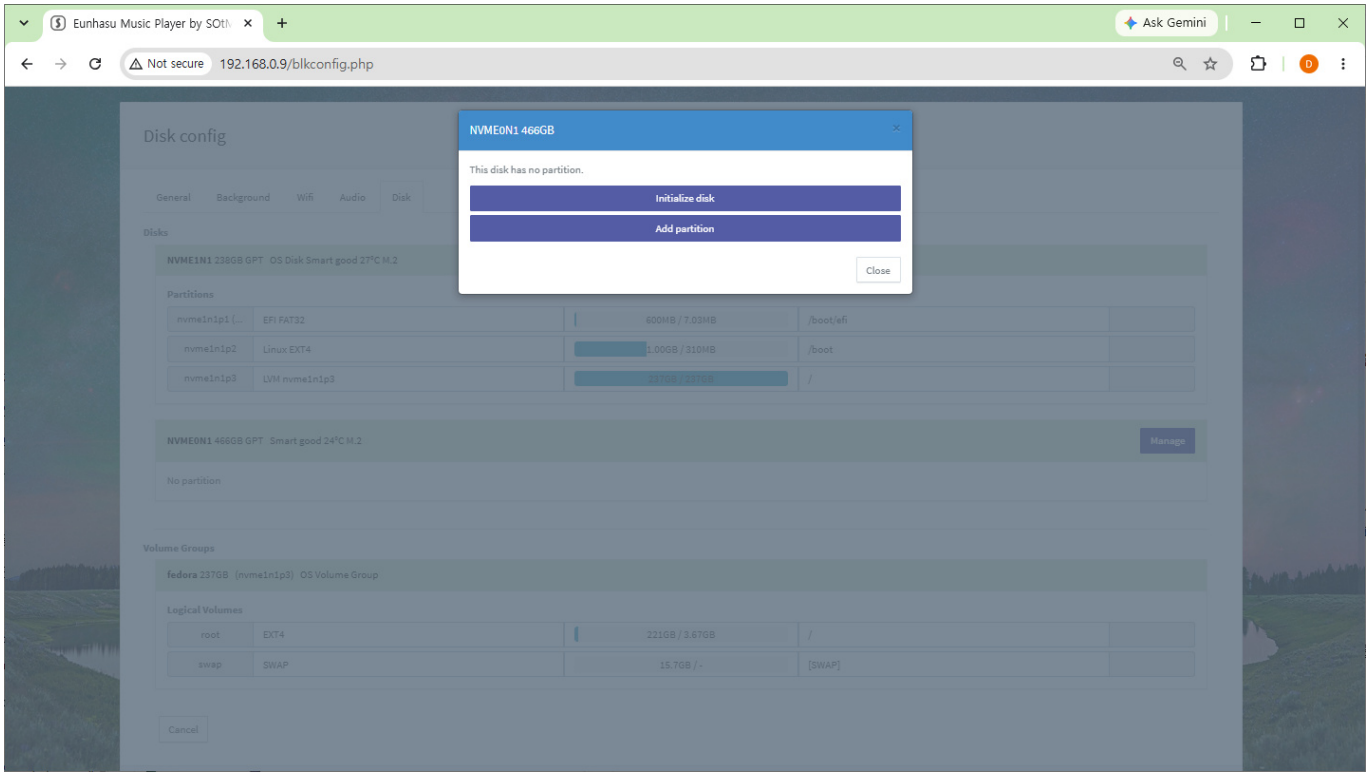


Initializing

A disk previously used in another device should first be initialized by clicking Initialize disk in the disk's Manage menu. All partitions and data on the disk are deleted. The procedure is the same as 'Initializing' under 'USB Disk'.

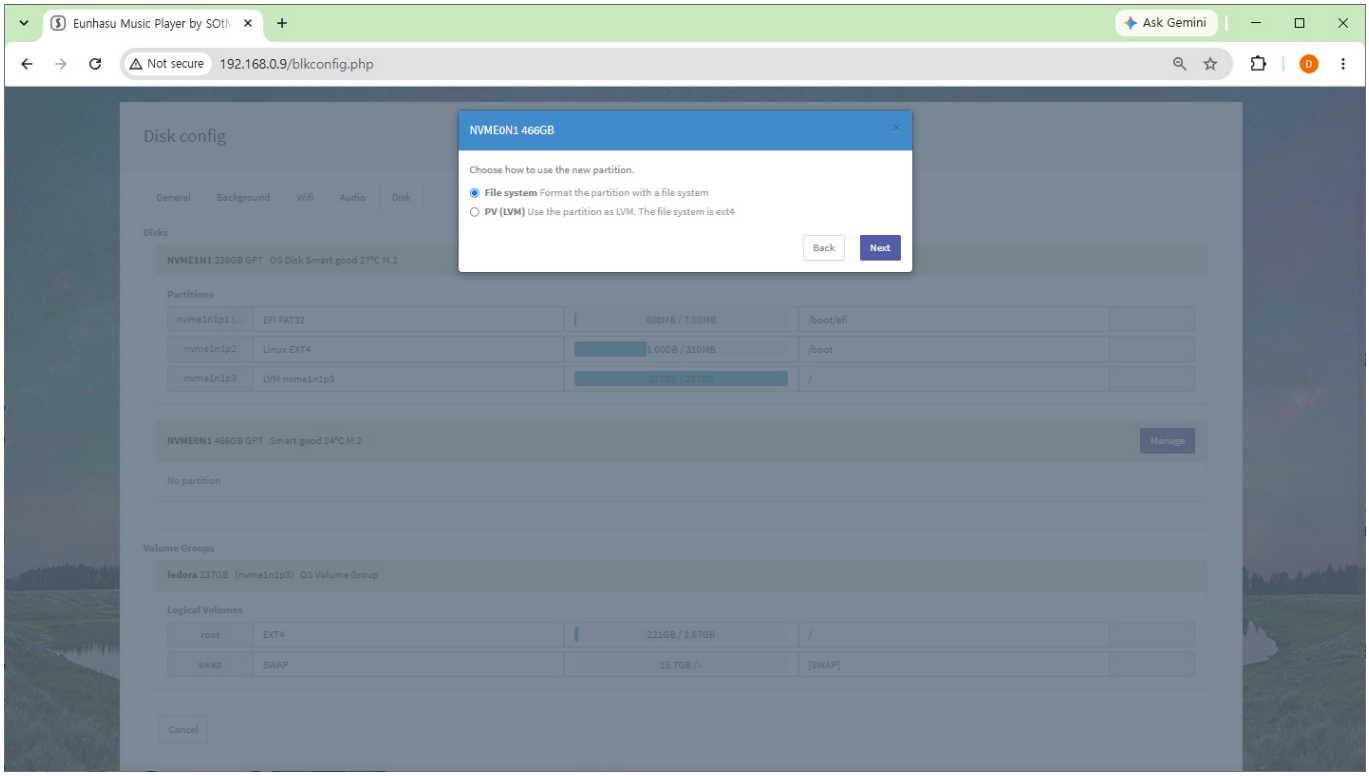
Creating a Partition

In the disk's Manage menu, click Add partition.

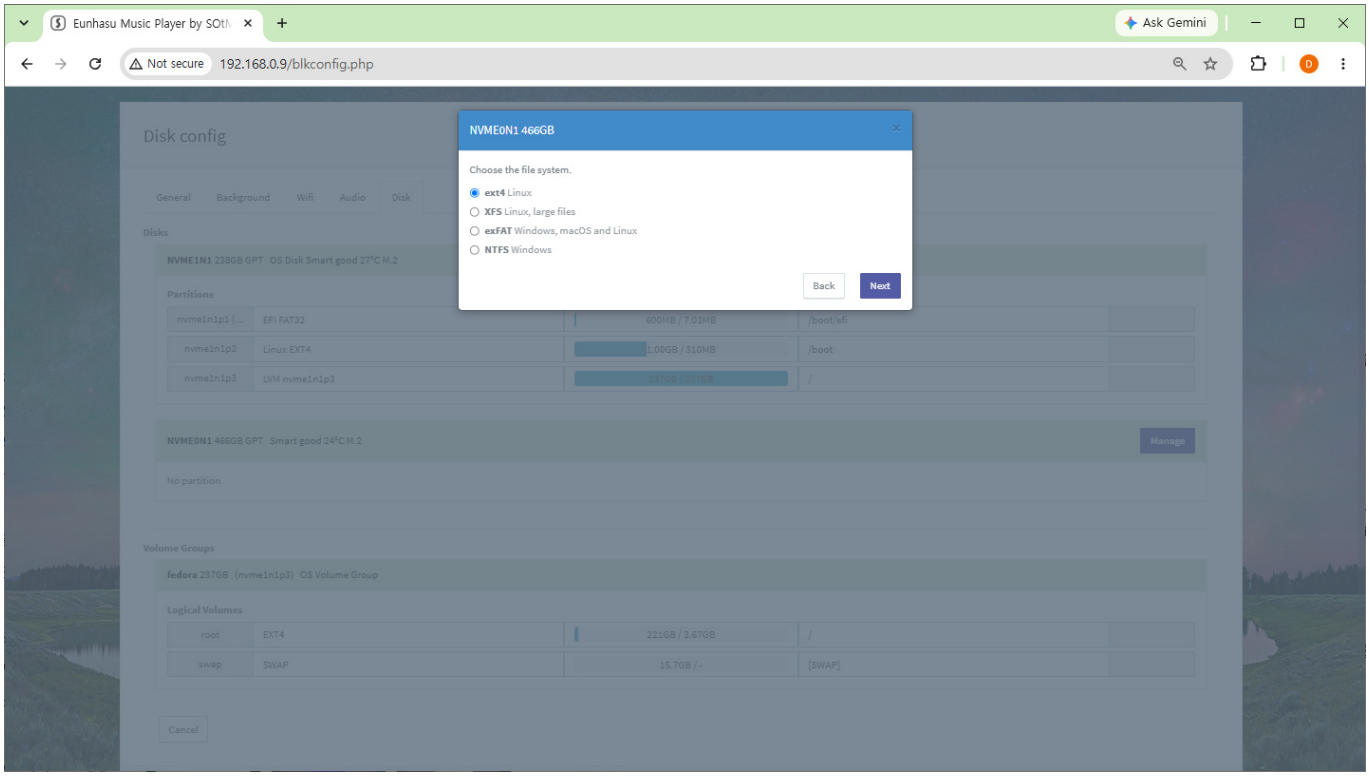


For a disk without a partition table, the partition table format (GPT/MBR) selection screen is shown first. GPT is generally selected.

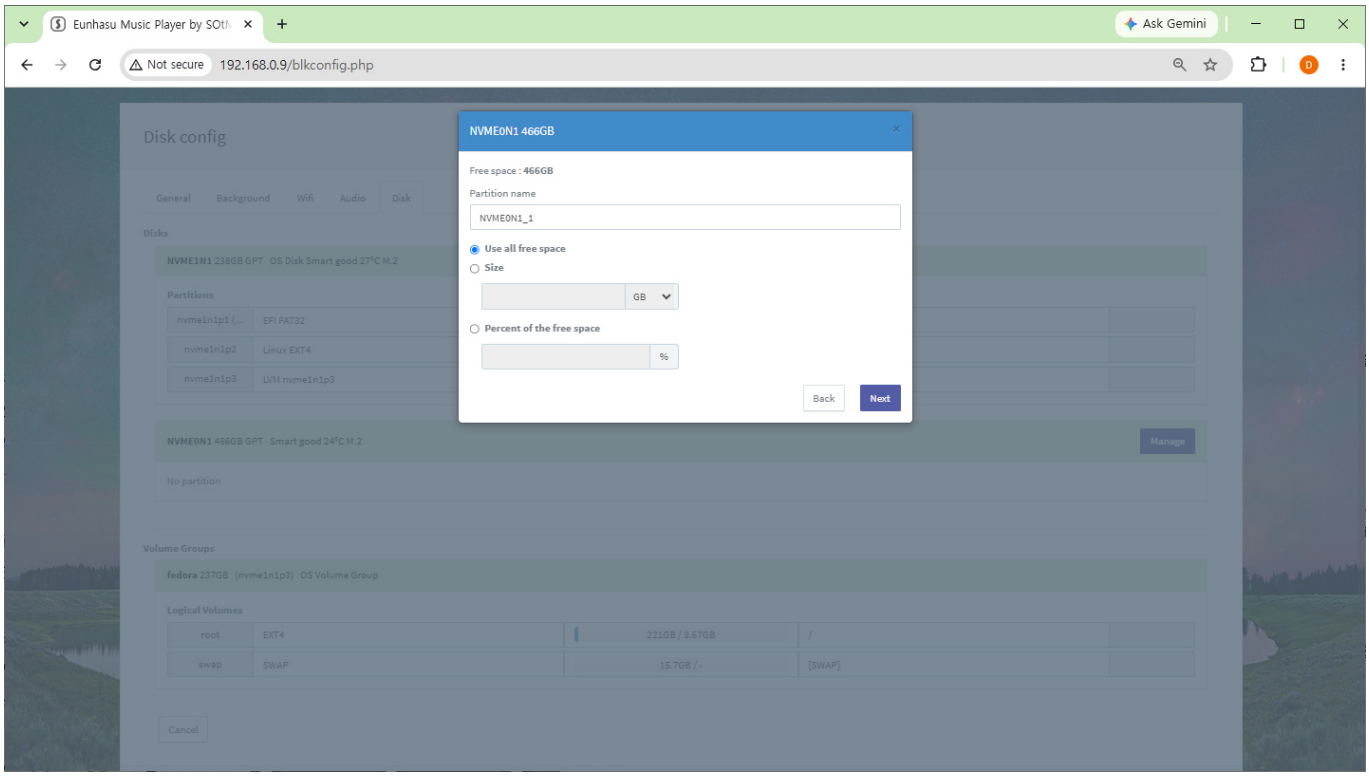
Under the usage type, select File system and click Next.



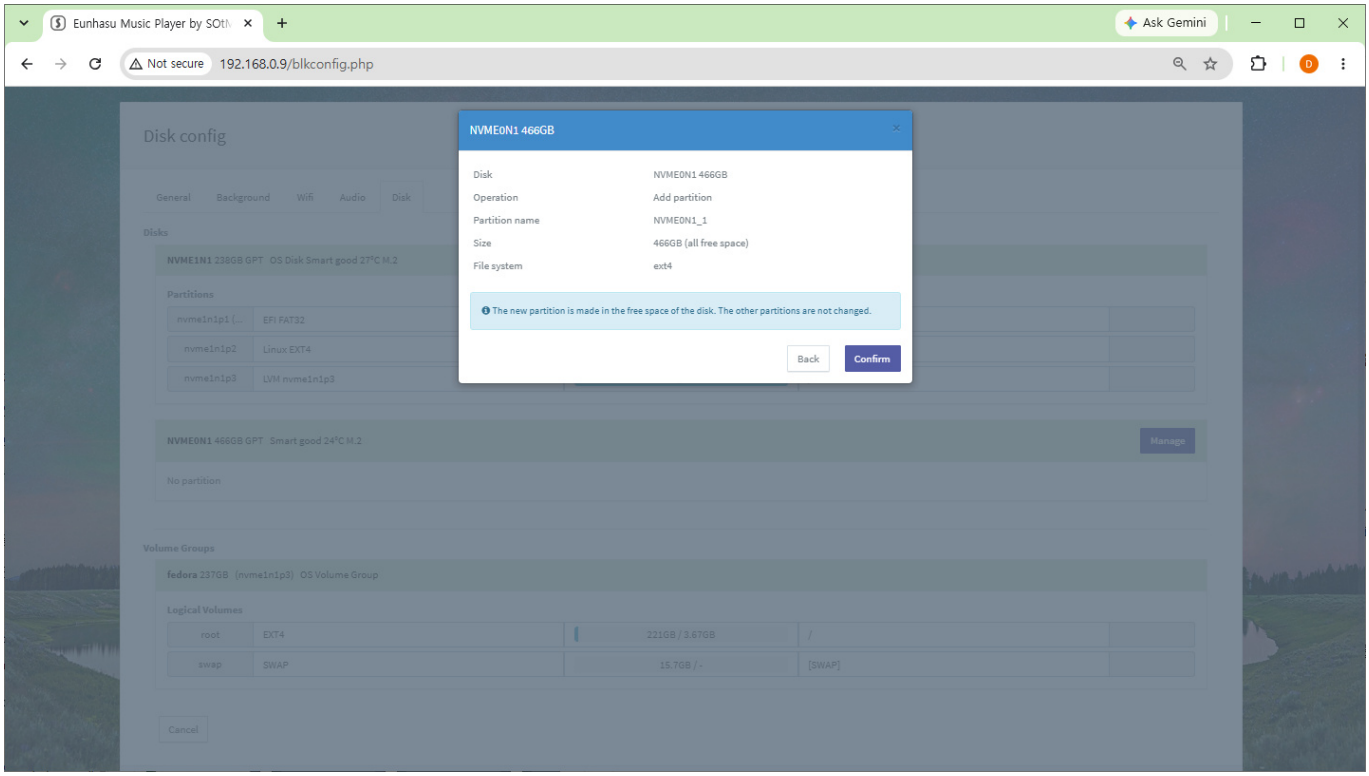
Select the file system type to format with and click Next. ext4 is generally selected. For a description of each file system, see 'Creating a Partition' under 'USB Disk'.



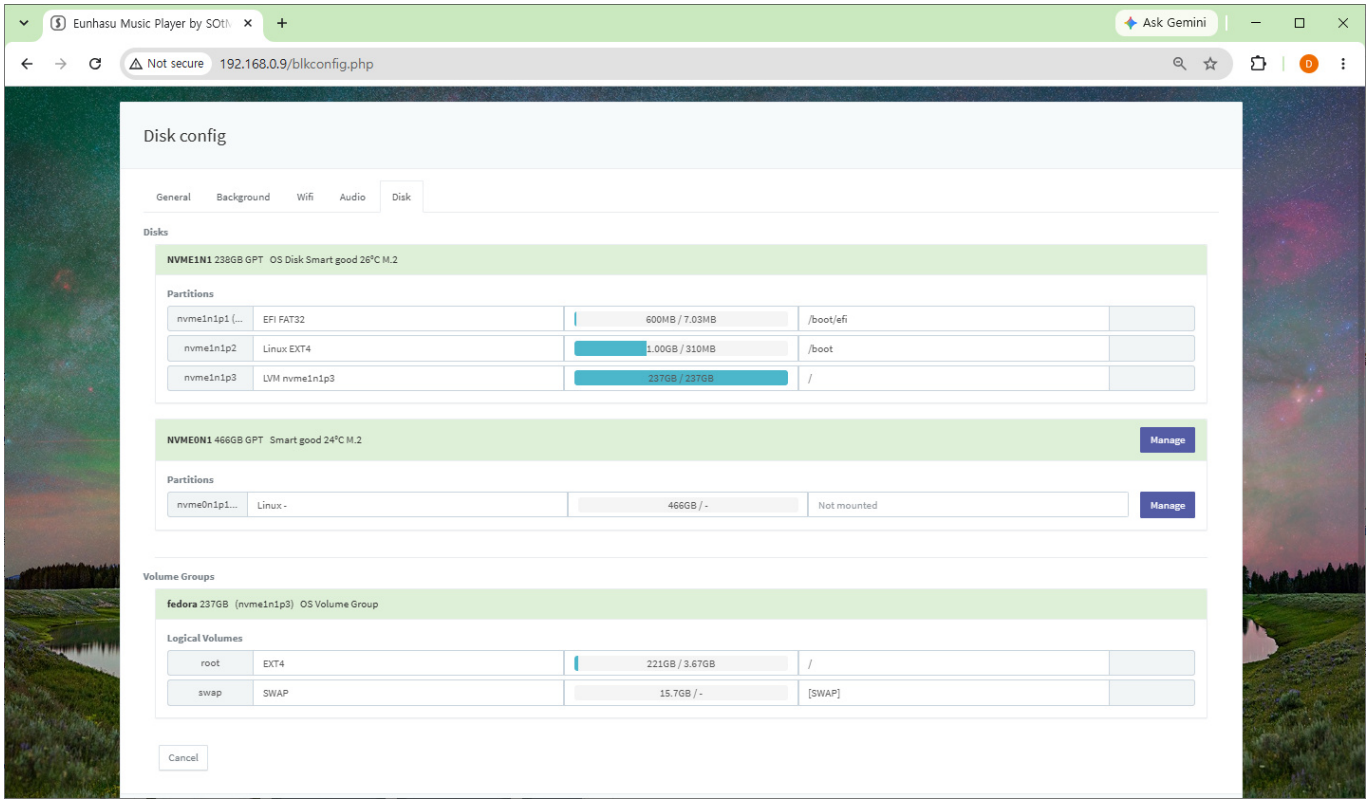
Enter the partition name and size, then click Next. For a description of each item, see 'Creating a Partition' under 'USB Disk'.



On the confirmation screen, check the disk, partition name, size, and file system, then click Confirm. The new partition is created in the disk's free space, and other partitions are not changed.

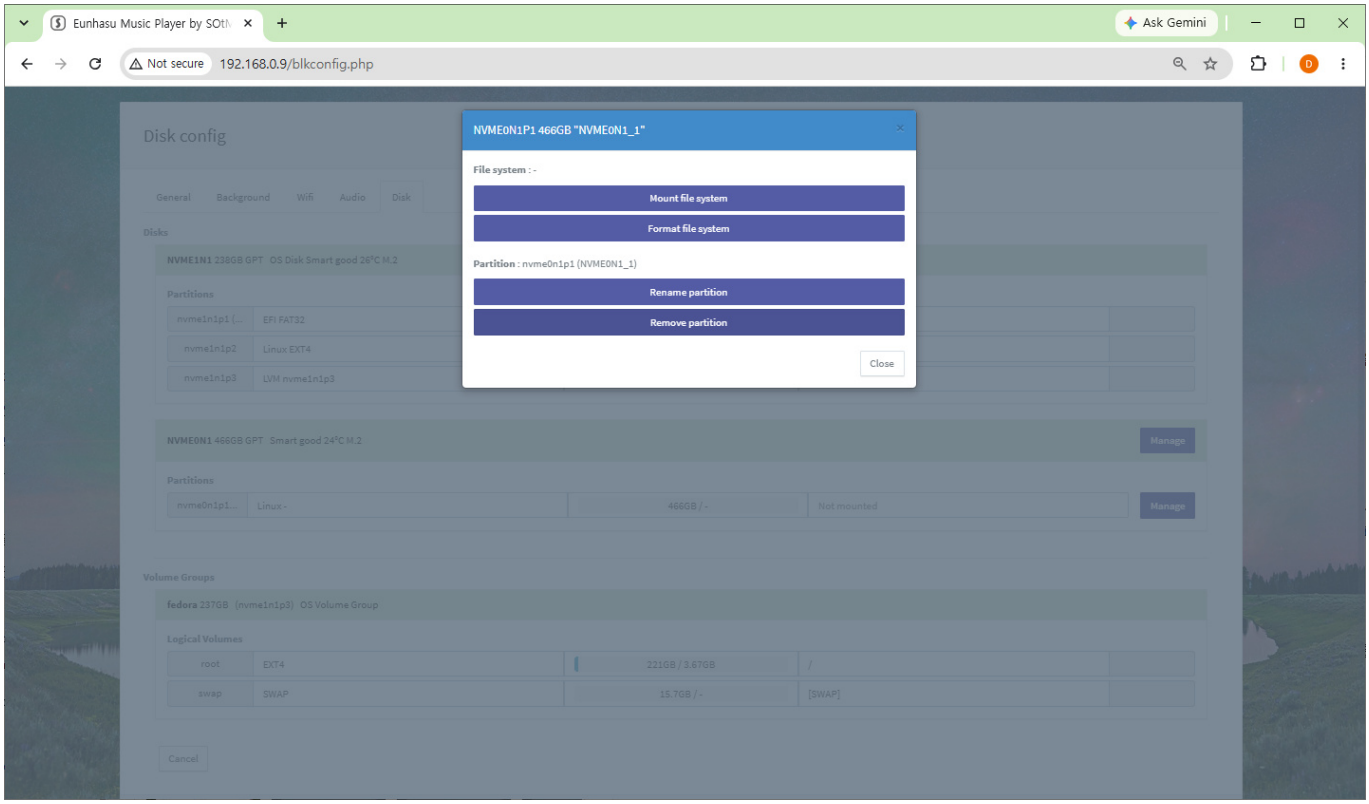


When the operation is complete, the new partition is shown in Partitions. Partitions on internal disks are not mounted automatically, and the Mount point shows Not mounted. To save files, mount the partition as described below.

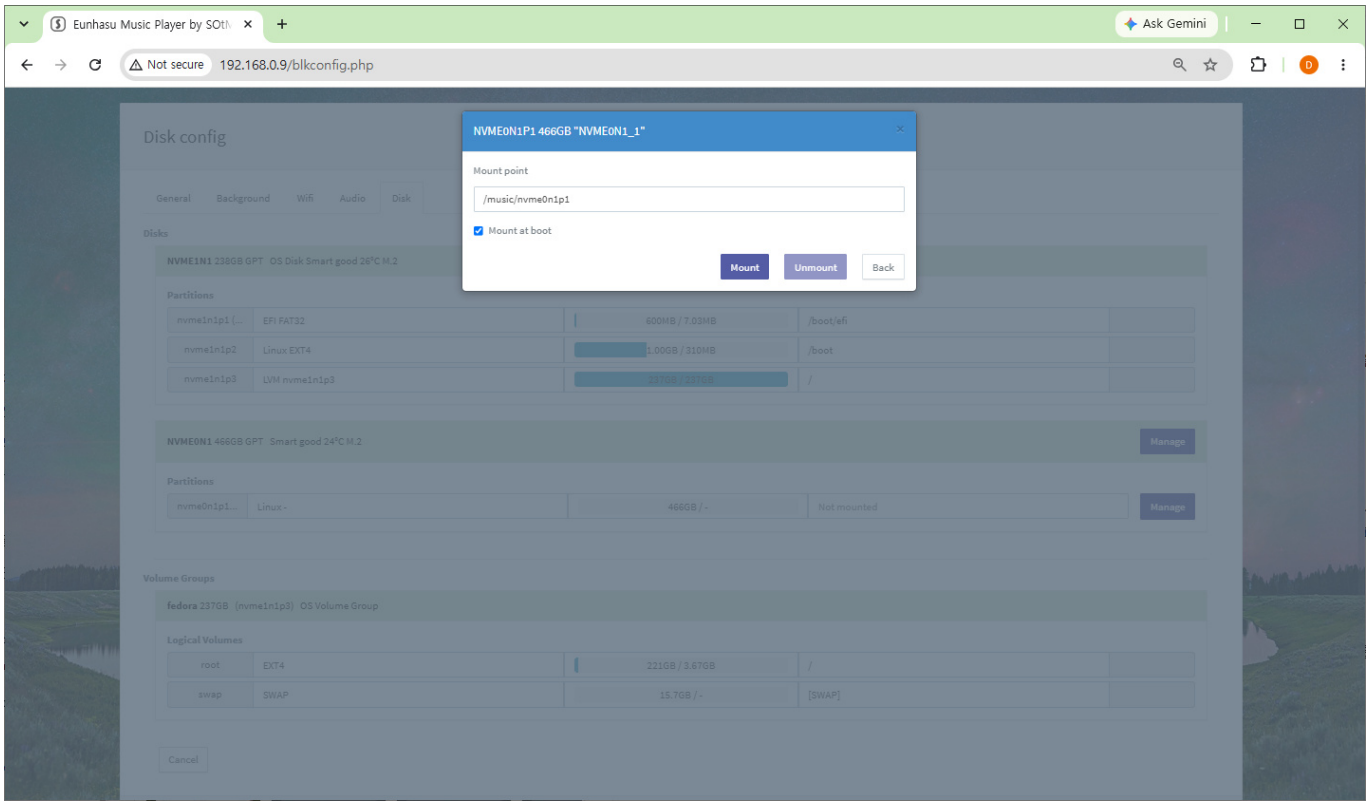


Mounting

In the partition's Manage menu, click Mount file system.

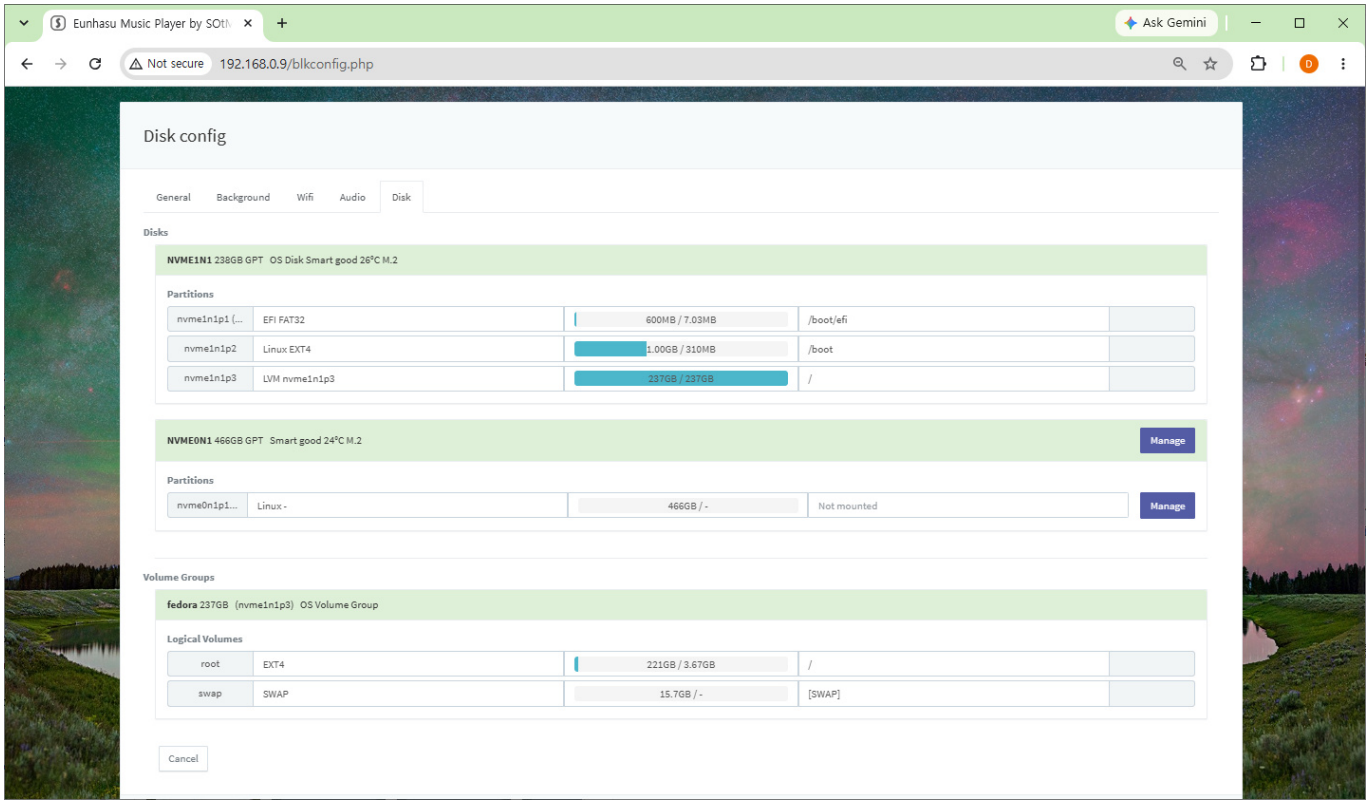


Check the Mount point and click Mount.



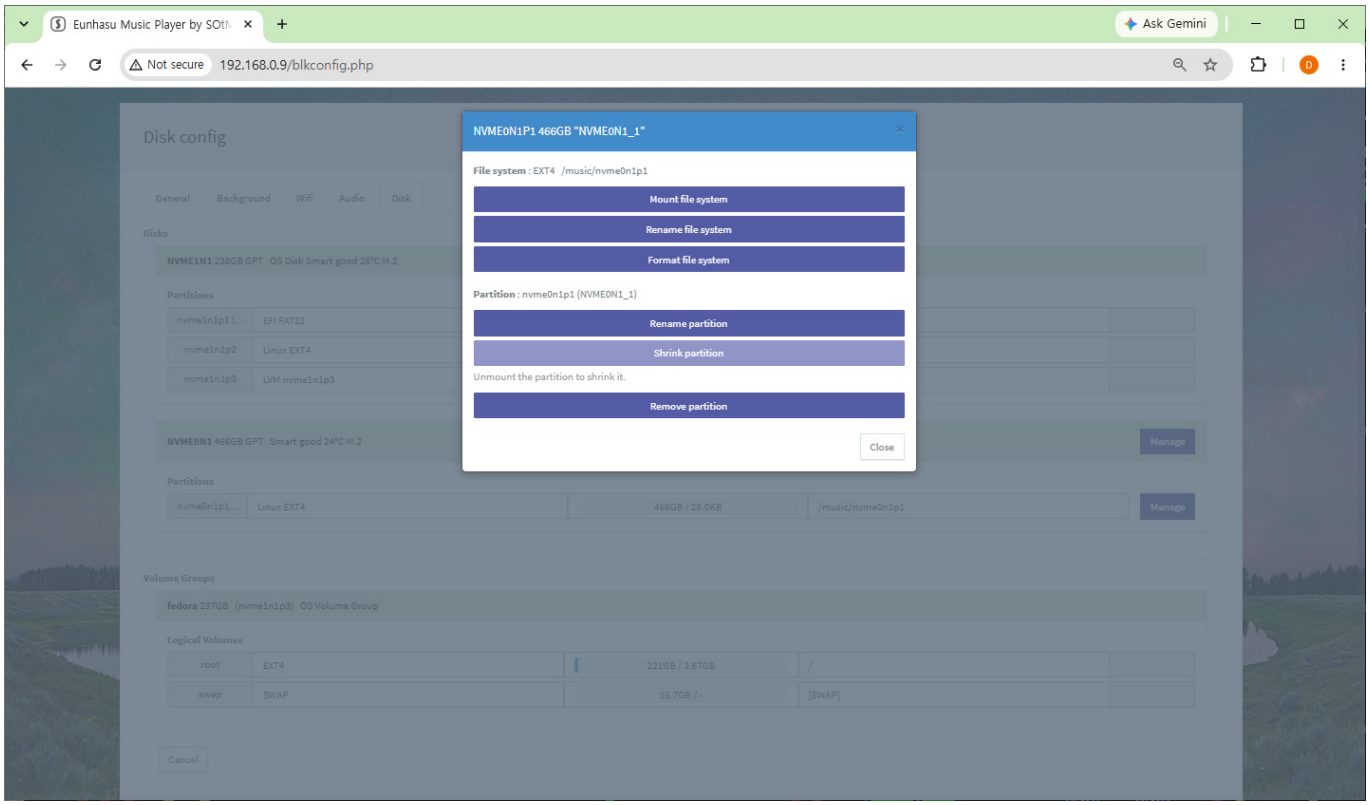
- **Mount point**: The location to mount to. The default is /music/(partition device name) (e.g., /music/nvme0n1p1).
- **Mount at boot**: When selected, the partition is mounted automatically when the product boots. If not selected, you must mount it again after every reboot.

When mounting is complete, the partition shows its file system (e.g., Linux EXT4), usage, and Mount point.

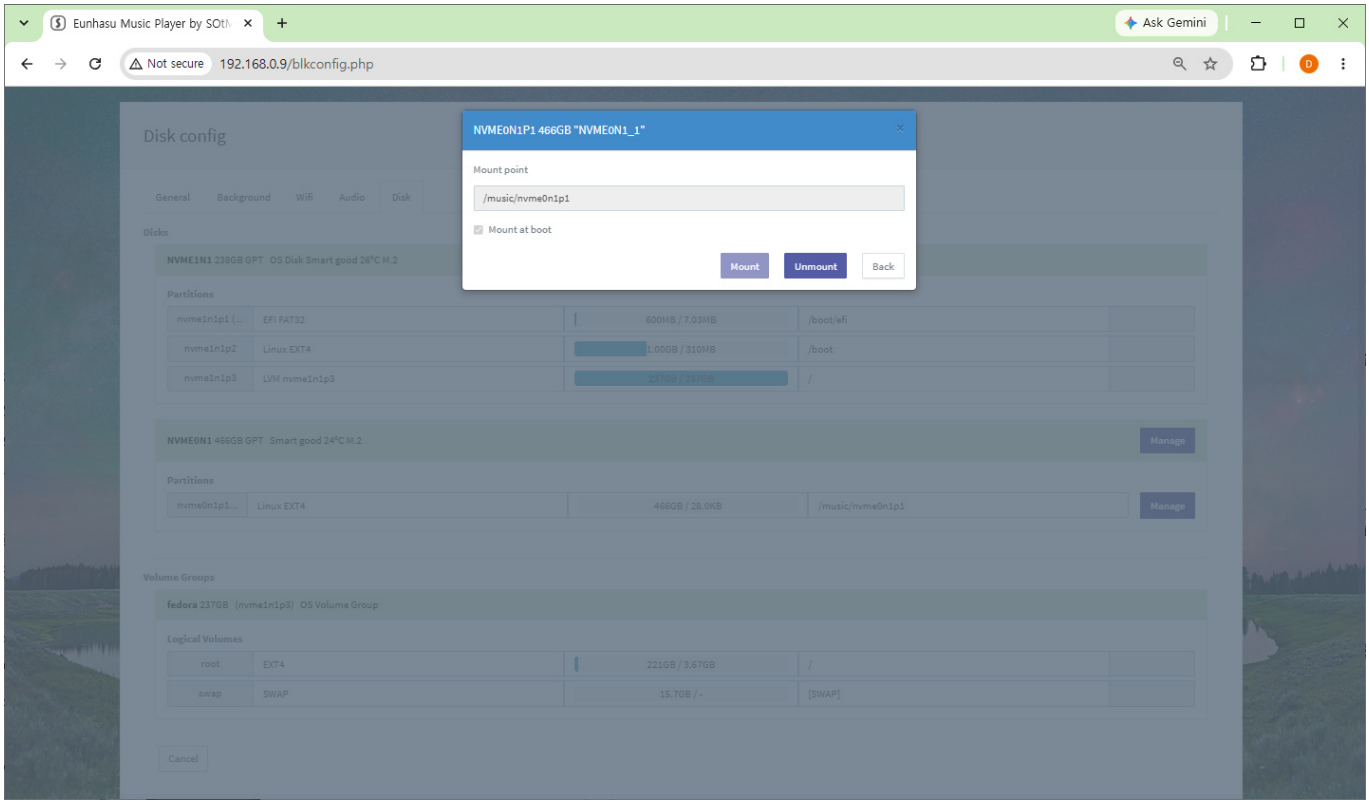


Unmounting

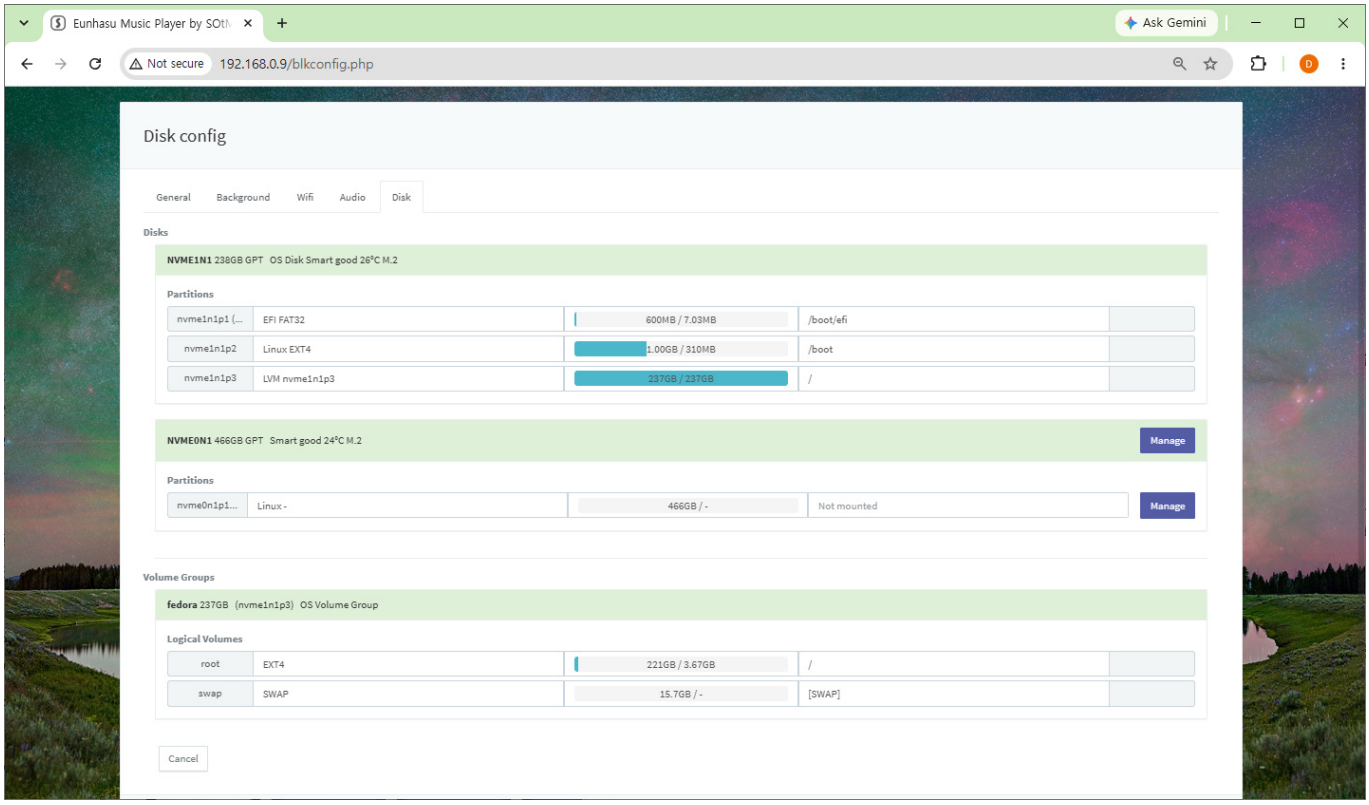
In the partition's Manage menu, click Mount file system.



Click Unmount. The Mount point and Mount at boot cannot be changed while the partition is mounted, so unmount it first to change them.



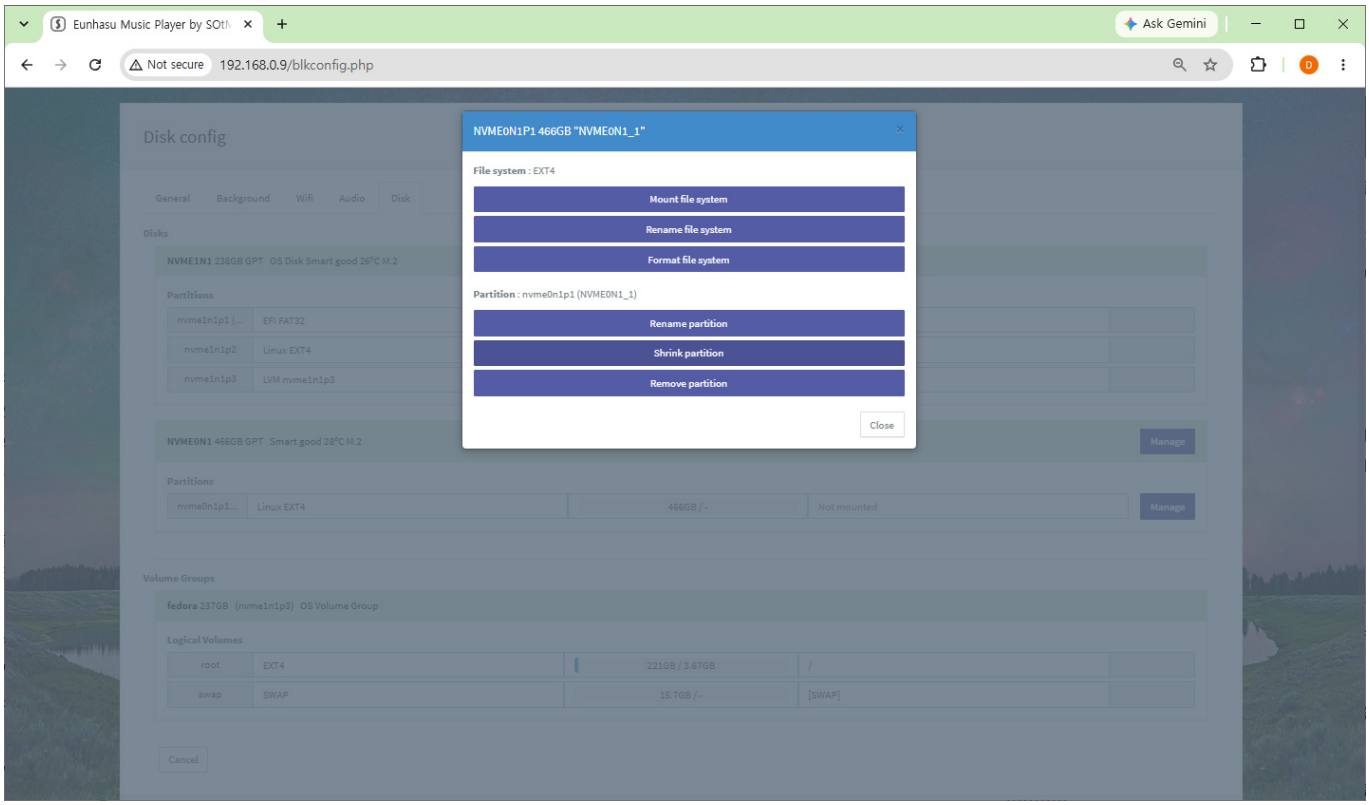
When unmounting is complete, the Mount point shows Not mounted. Files stored on the partition are not deleted.



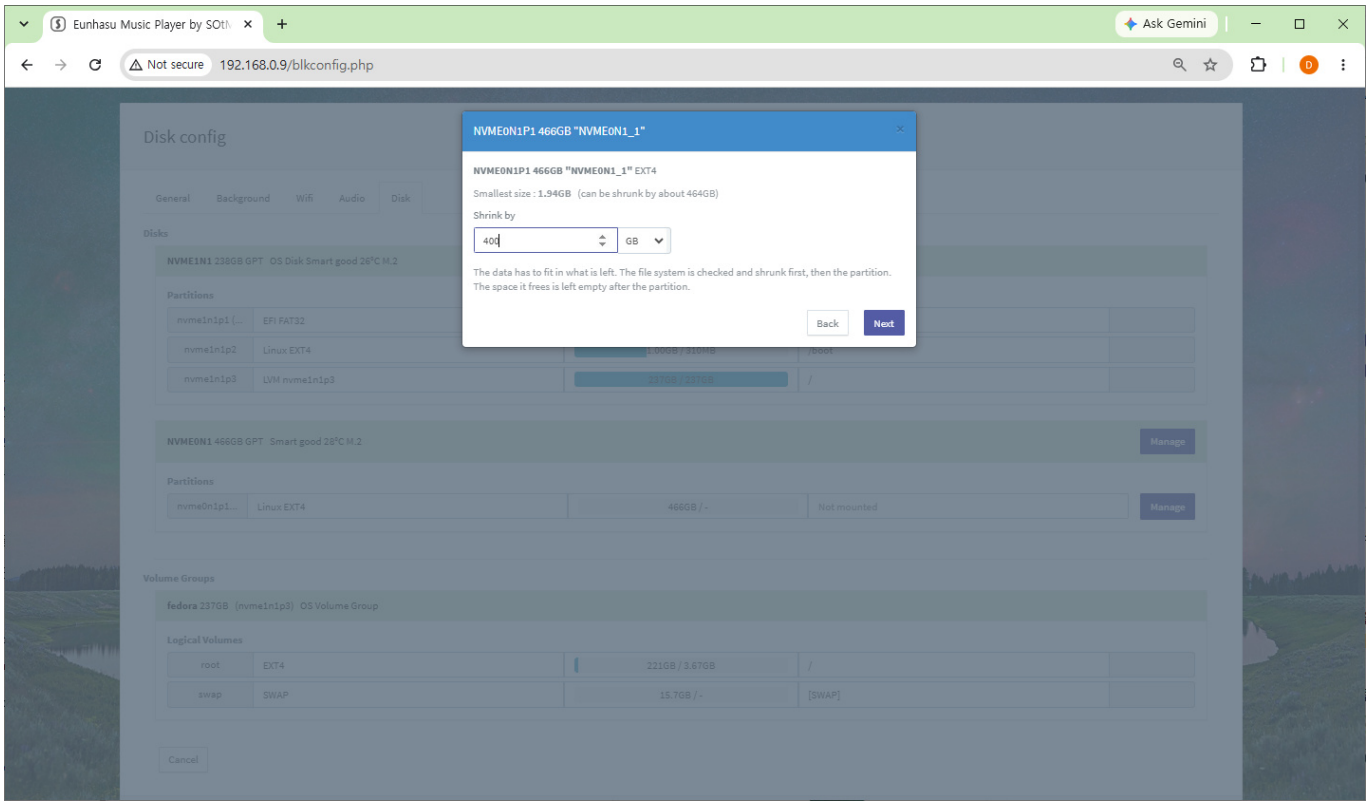
Shrinking a Partition

You can shrink a partition to free up space on the disk. A new partition can be created in the freed space with Add partition.

After unmounting the partition, click Shrink partition in the partition's Manage menu. While the partition is mounted, the Shrink partition button is disabled and “Unmount the partition to shrink it.” is shown.



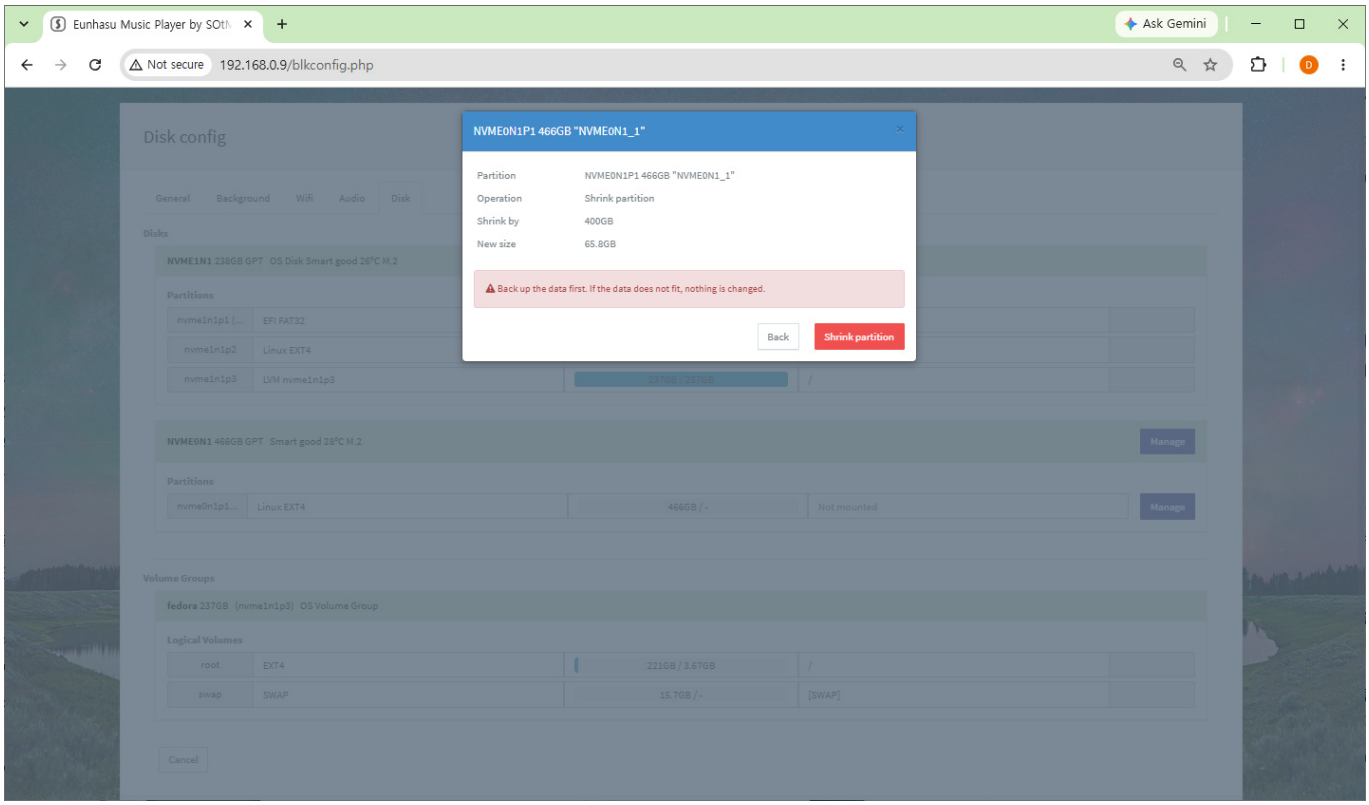
Enter the amount to shrink by and click Next.



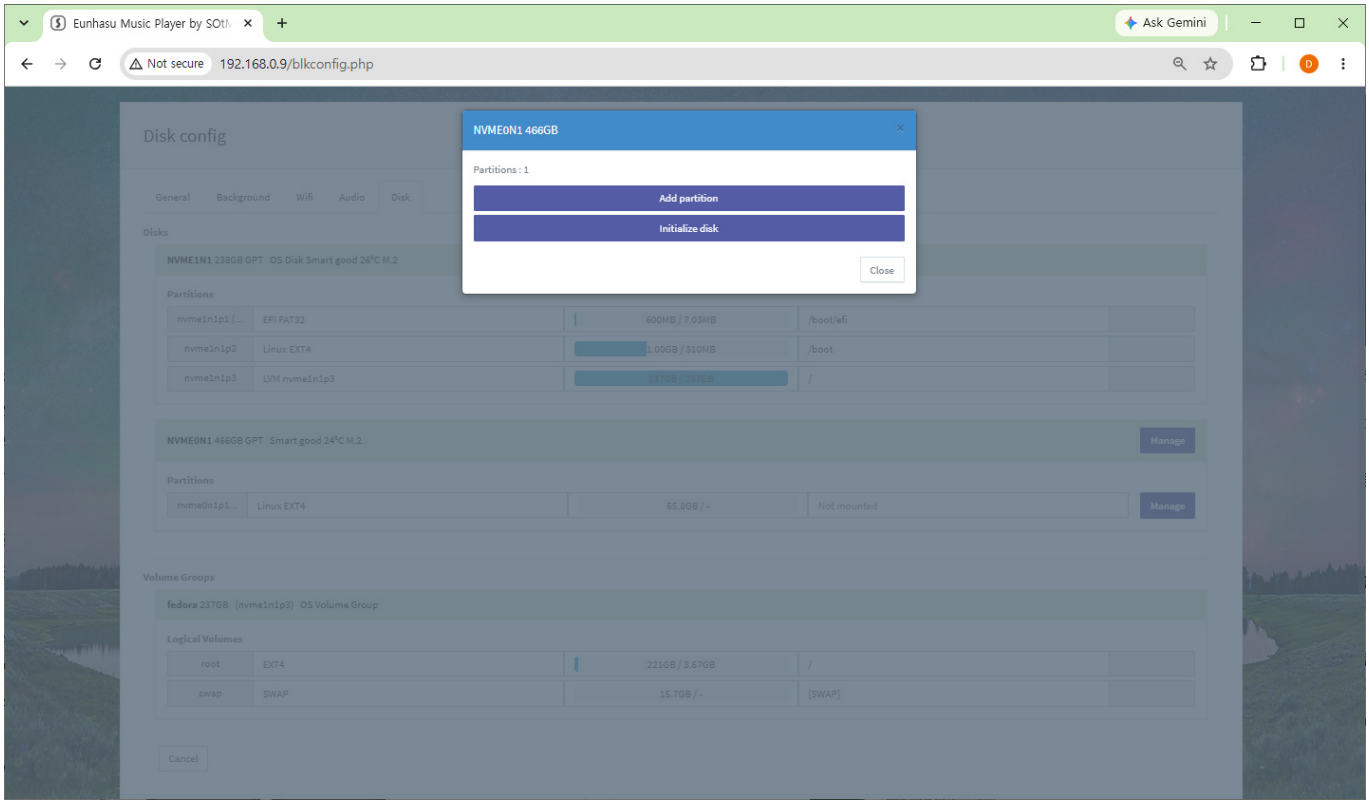
- **Smallest size**: The minimum size the partition can be shrunk to. The value in parentheses is the maximum amount it can be shrunk by.
- **Shrink by**: Enter the amount to shrink by. Select a unit (GB, etc.) and enter a number.

Stored data must fit within the reduced size. During the operation, the file system is checked and shrunk first, then the partition is shrunk, and the freed space remains as free space after the partition. Back up important files before proceeding.

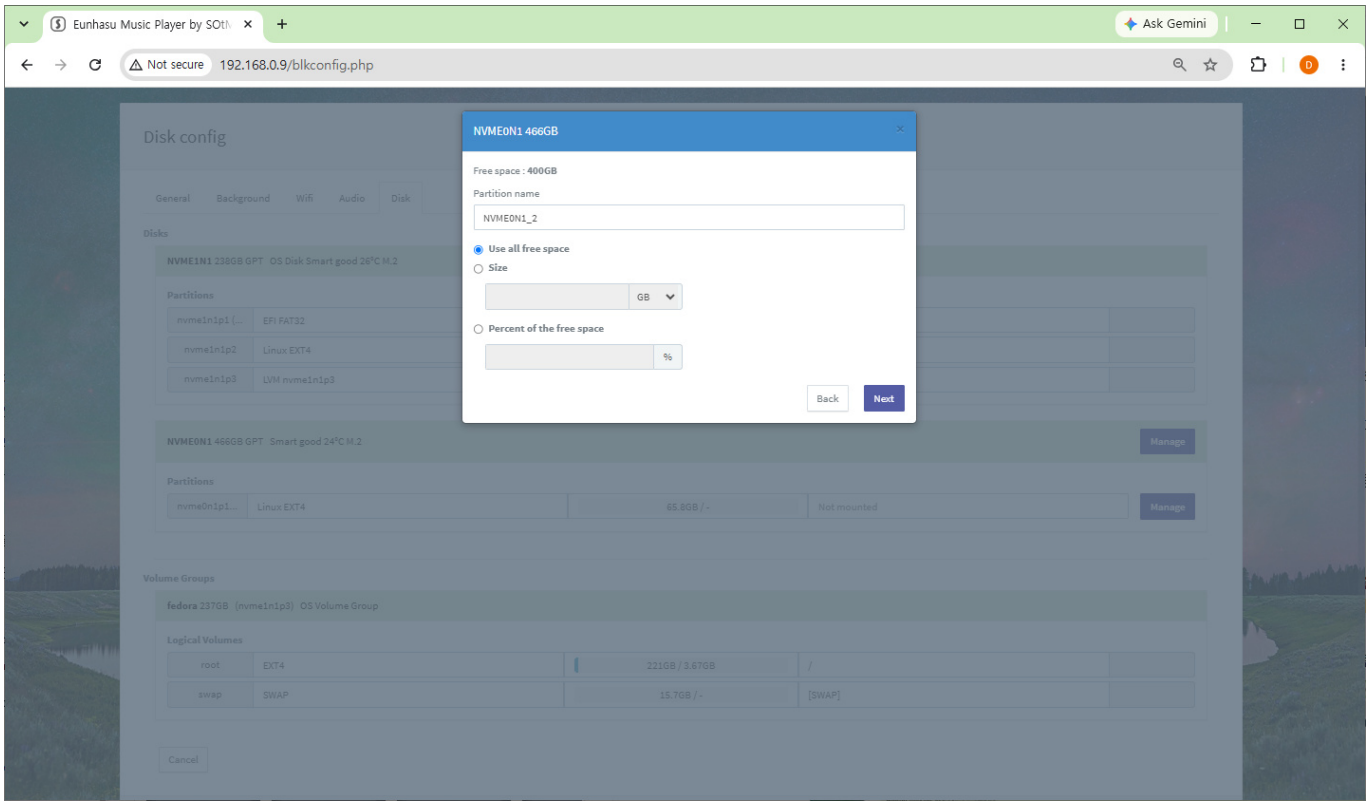
On the confirmation screen, check the amount to shrink by (Shrink by) and the size after the change (New size), then click Shrink partition. If the data does not fit within the reduced size, the operation does not proceed and the partition is not changed.



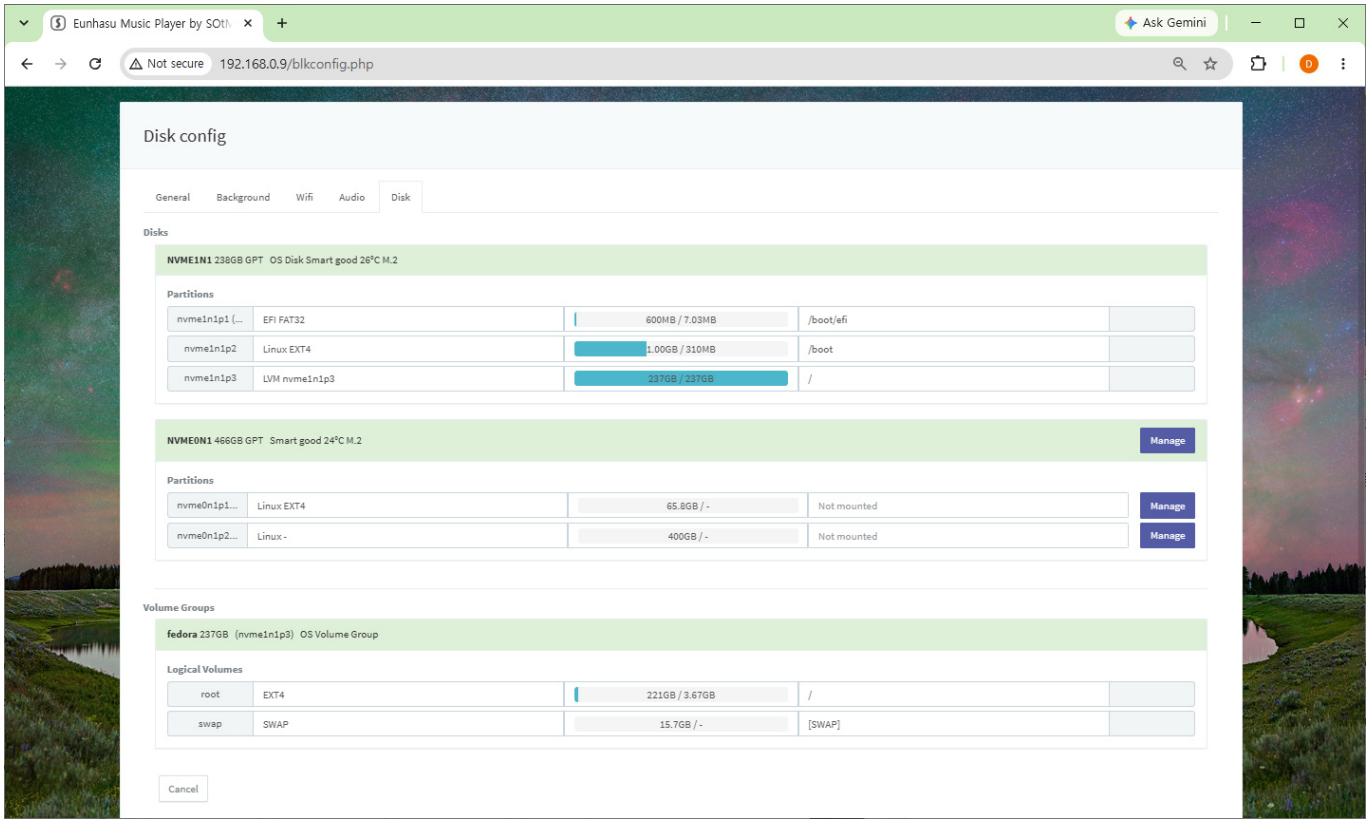
When complete, the partition size changes and free space is created on the disk. Clicking Manage on the disk shows Add partition.



The procedure for creating a new partition in the free space is the same as 'Creating a Partition' above. Free space shows the size of the freed space, and the partition name is filled in automatically with the next number (e.g., NVME0N1_2).



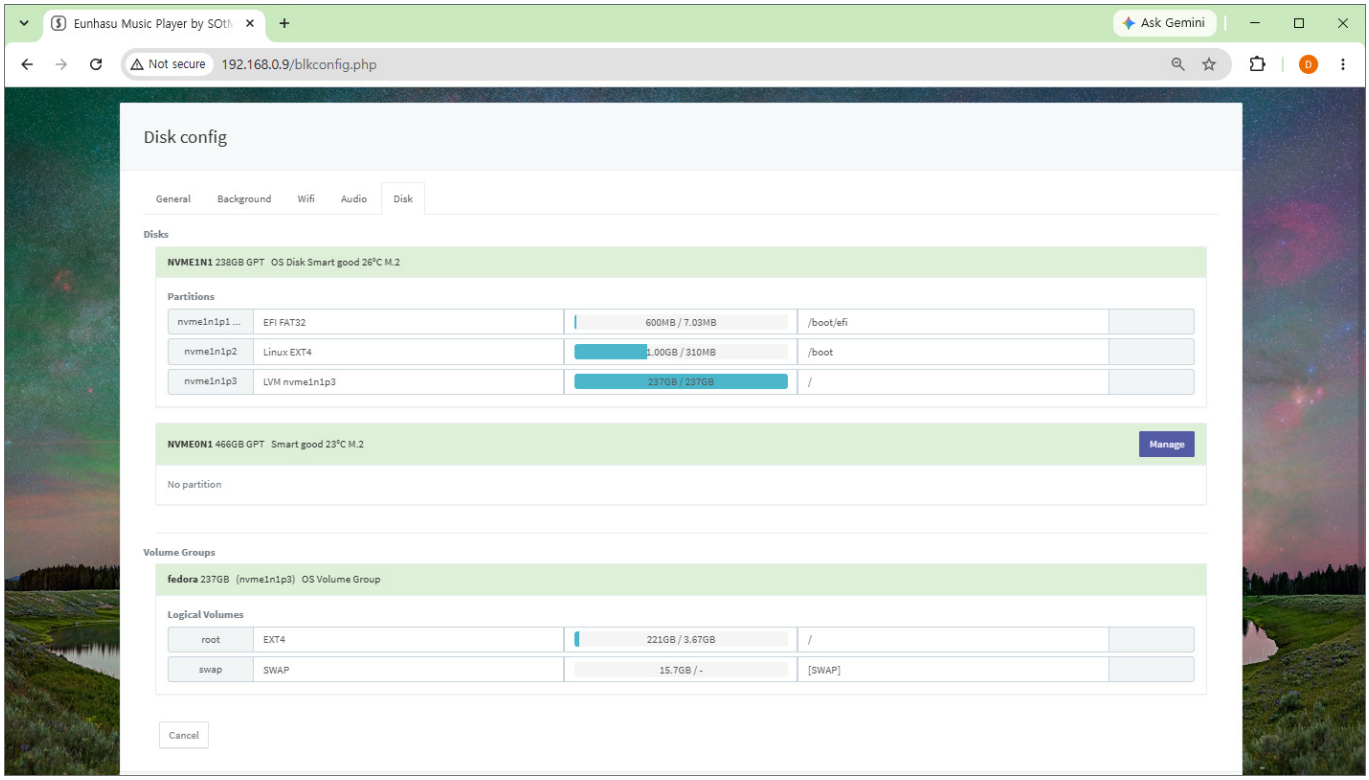
When complete, two partitions are shown in Partitions. Mount the new partition the same way as in 'Mounting' before using it.



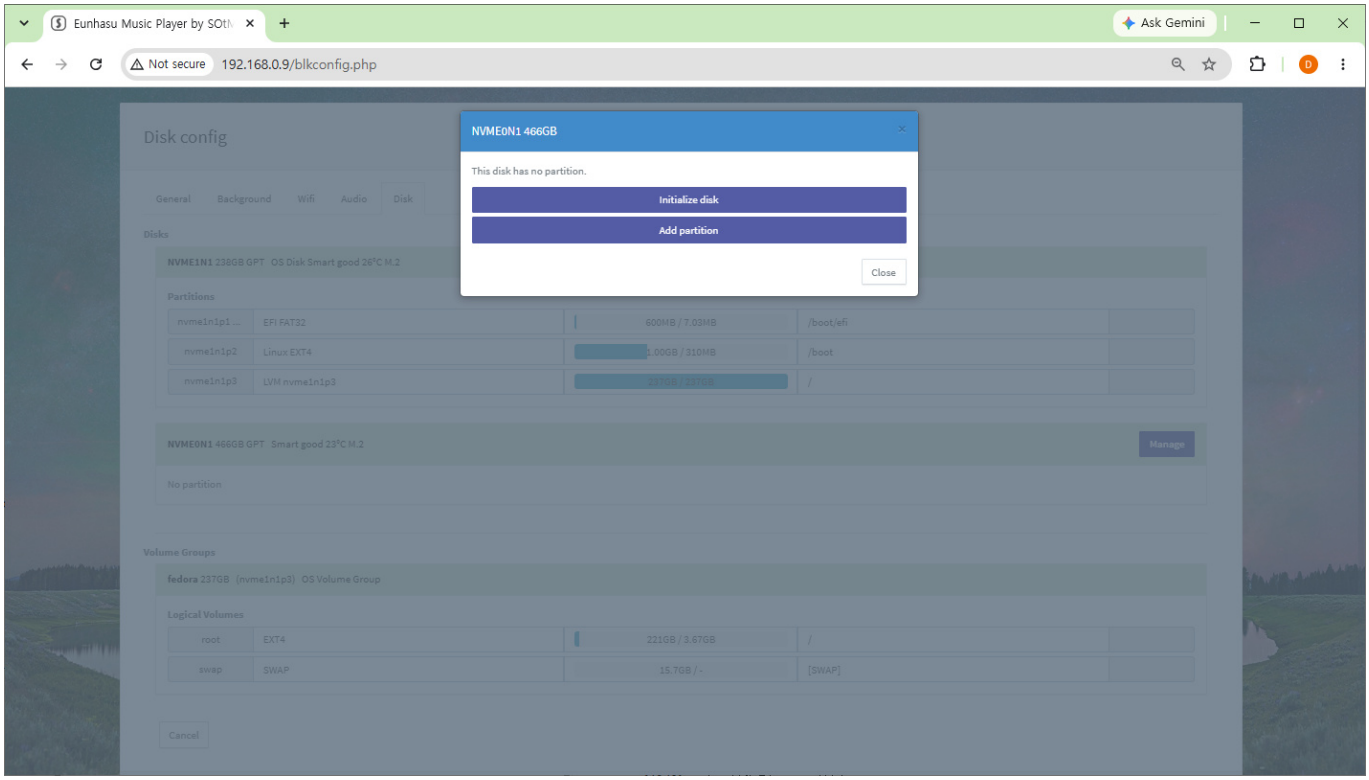
Internal Disk – Using with LVM

To combine multiple disks into one storage space, or to increase capacity later by adding disks, configure LVM. The setup order is: create a PV (LVM partition) → add it to a VG (Volume group) → create an LV (Logical volume) → mount.

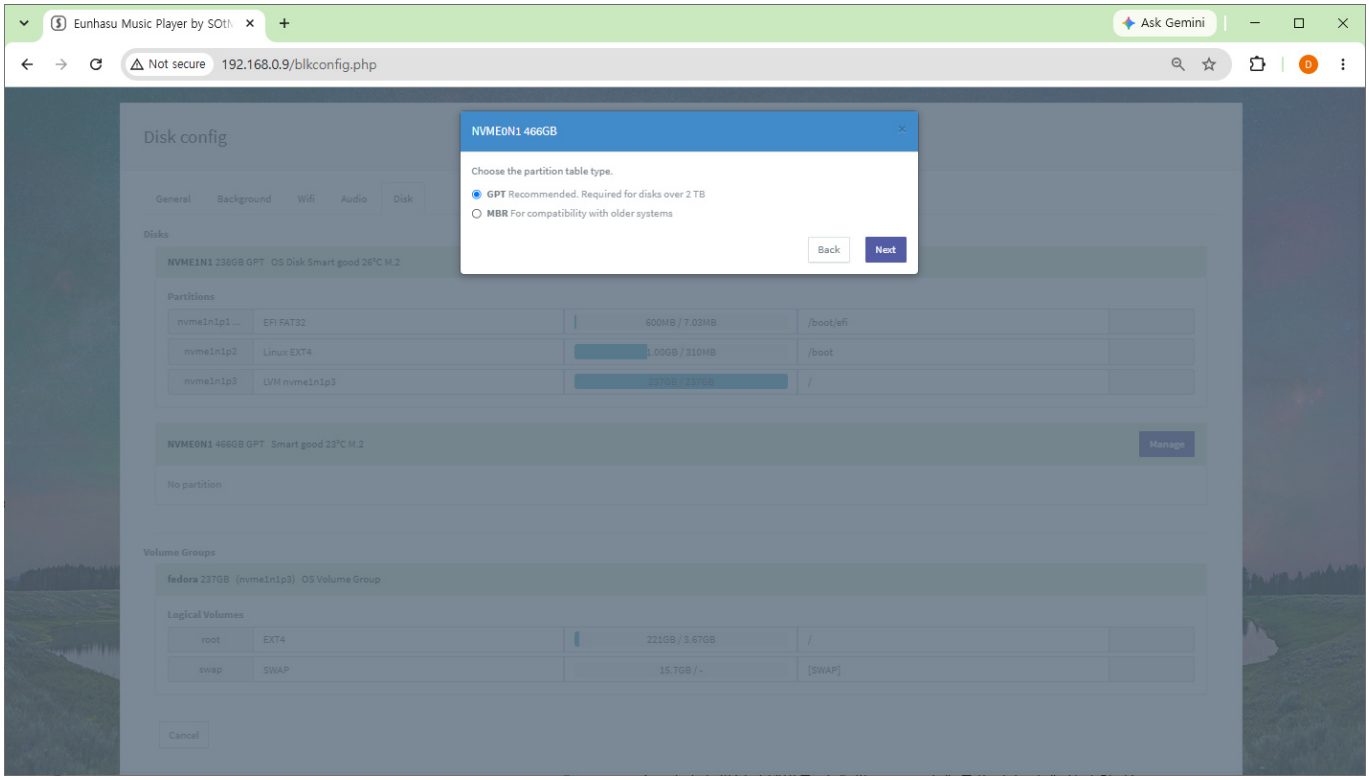
When you connect a new disk with the product turned off and then boot, the new disk is shown in Disks as No partition.



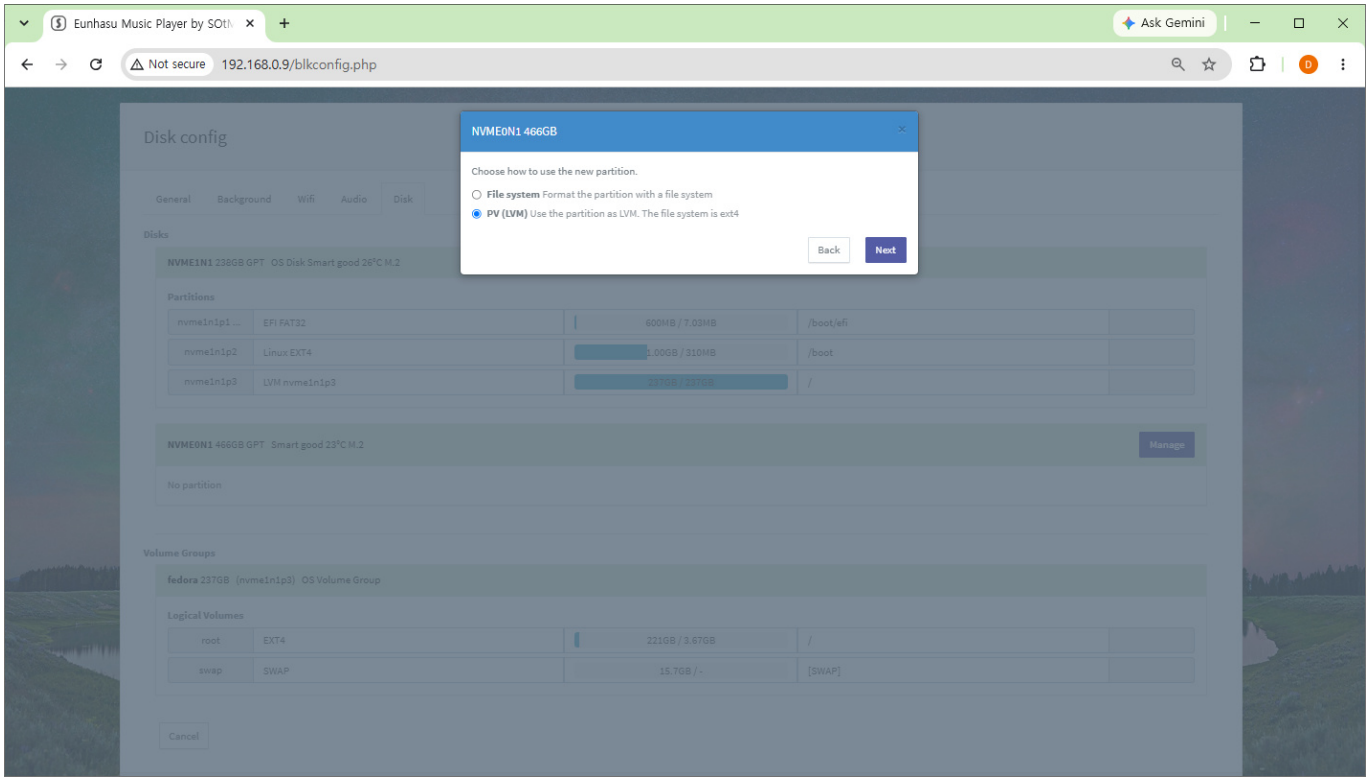
In the new disk's Manage menu, click Add partition.



Select the partition table format and click Next. GPT is generally selected.

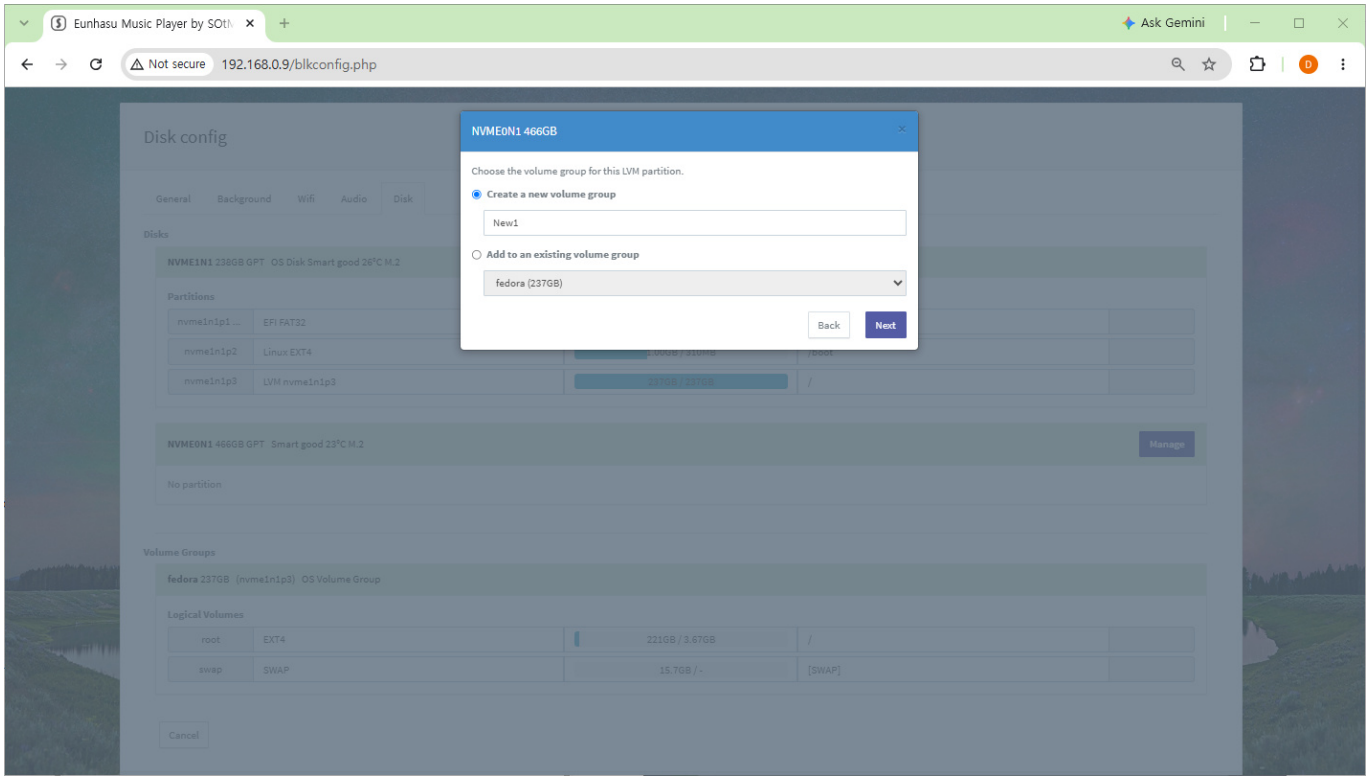


Under the usage type, select PV (LVM) and click Next.



- **File system**: Formats the partition with a file system and uses it as a regular partition (see 'Internal Disk – Using as a Regular Partition').
- **PV (LVM)**: Makes the partition a PV for LVM. A PV is used by adding it to a Volume group, and LVs created afterward are formatted as ext4.

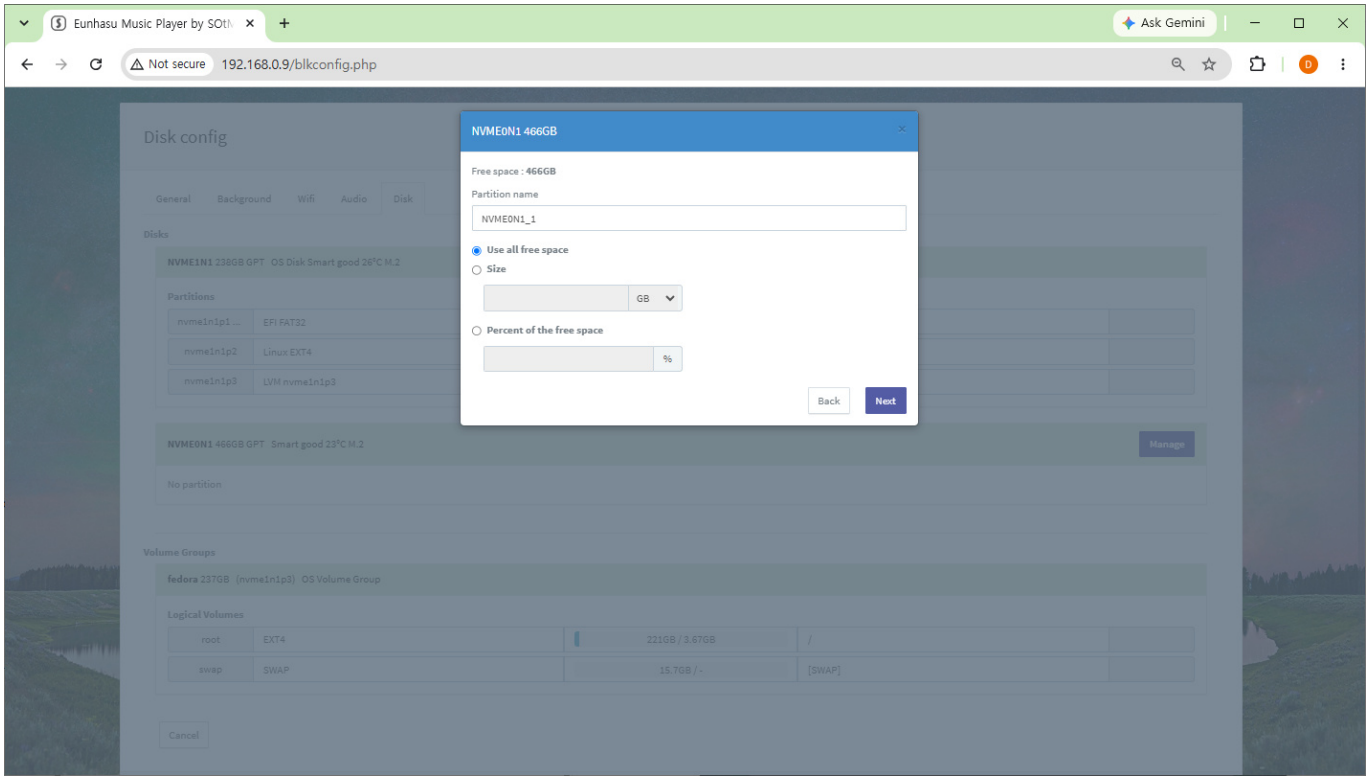
Select the Volume group to add the PV to and click Next.



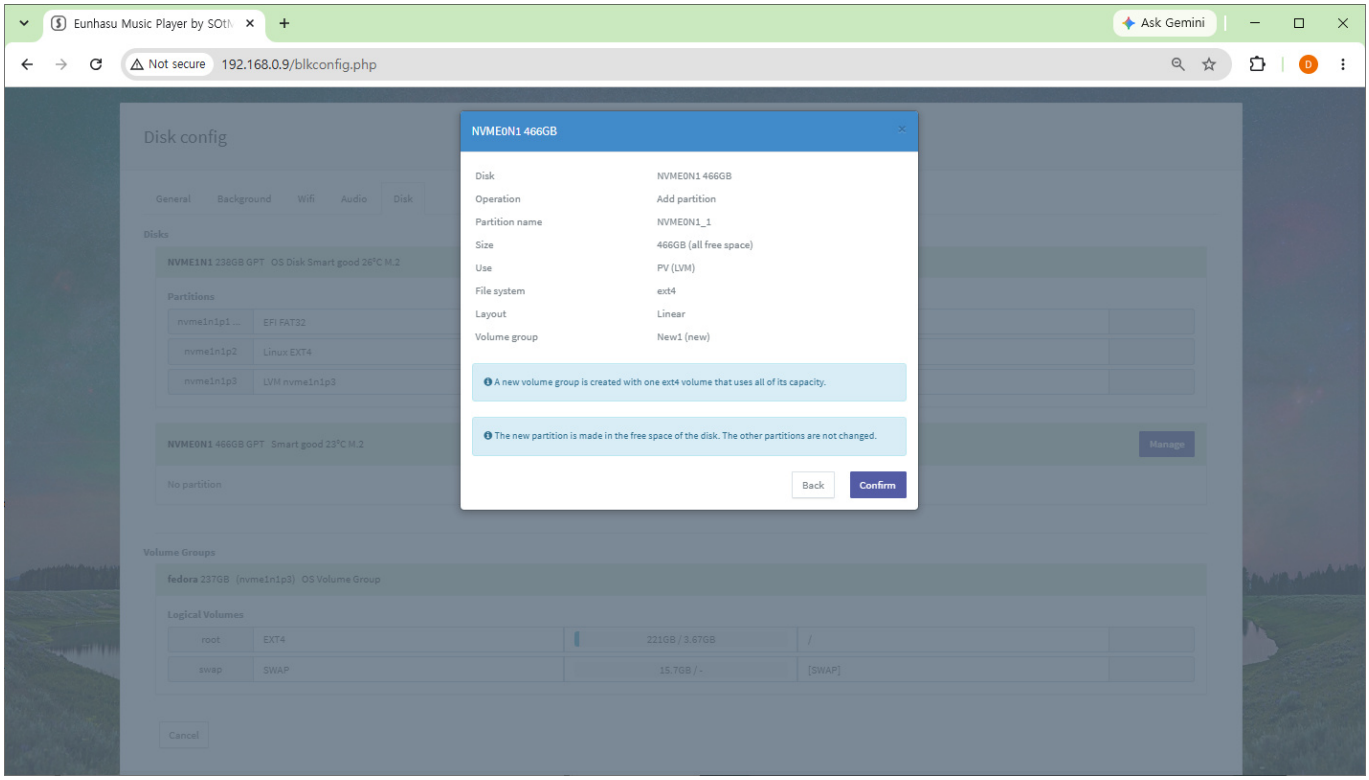
- **Create a new volume group**: Creates a new Volume group and adds the PV to it. Select this when setting up LVM for the first time.
- **Add to an existing volume group**: Adds the PV to a Volume group already in use. Select this

to increase a Volume group's capacity (see 'Adding a Disk to Increase / Reduce Capacity (LVM)').

Enter the partition name and size, then click Next. For a description of each item, see 'Creating a Partition' under 'USB Disk'.

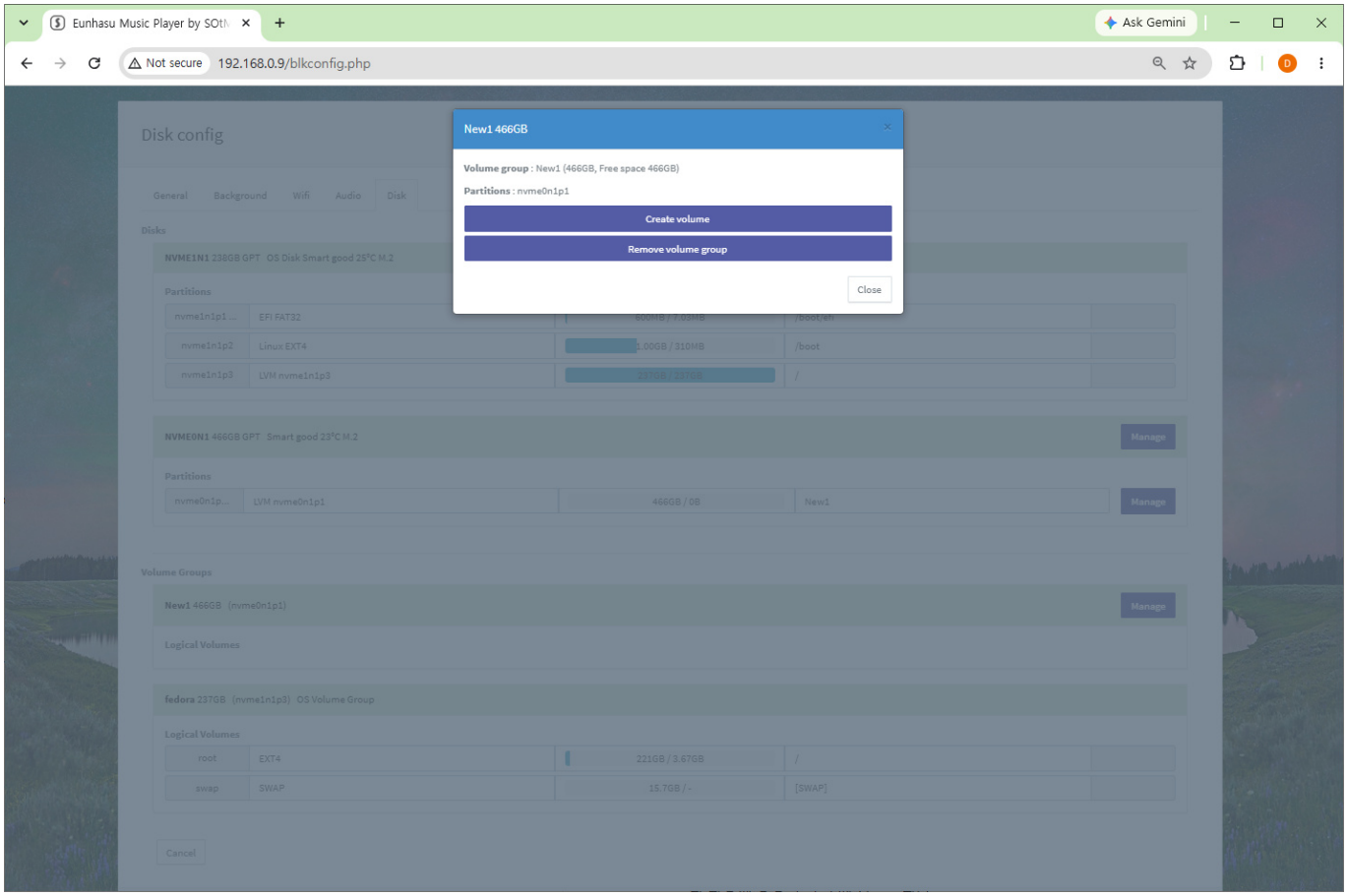


On the confirmation screen, check the details and click Confirm. When complete, the Volume group is shown in Volume Groups.

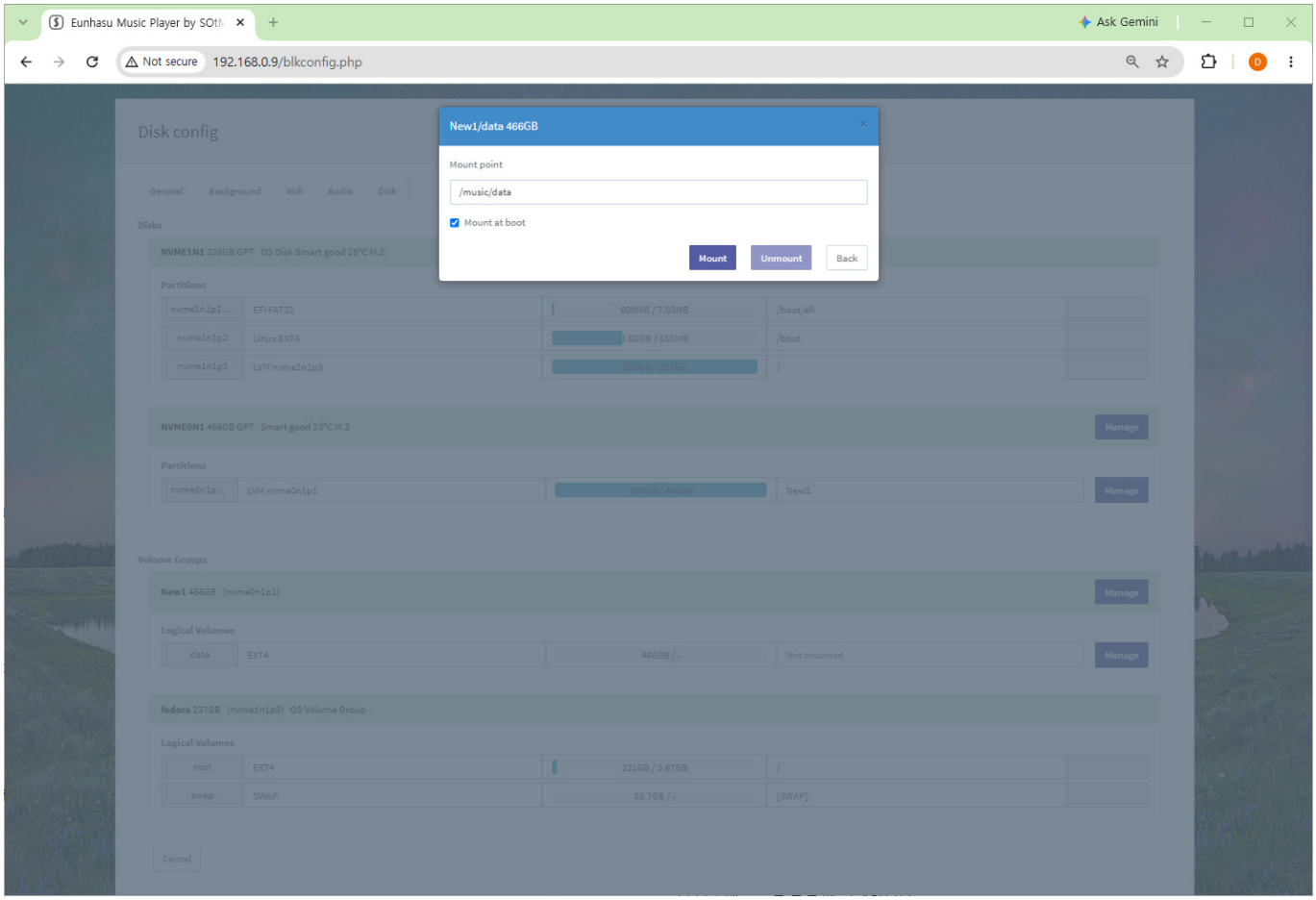


In the Volume group's Manage menu, click Create volume. Enter the size and name of the Logical

volume and click Create volume to create the Logical volume (LV).

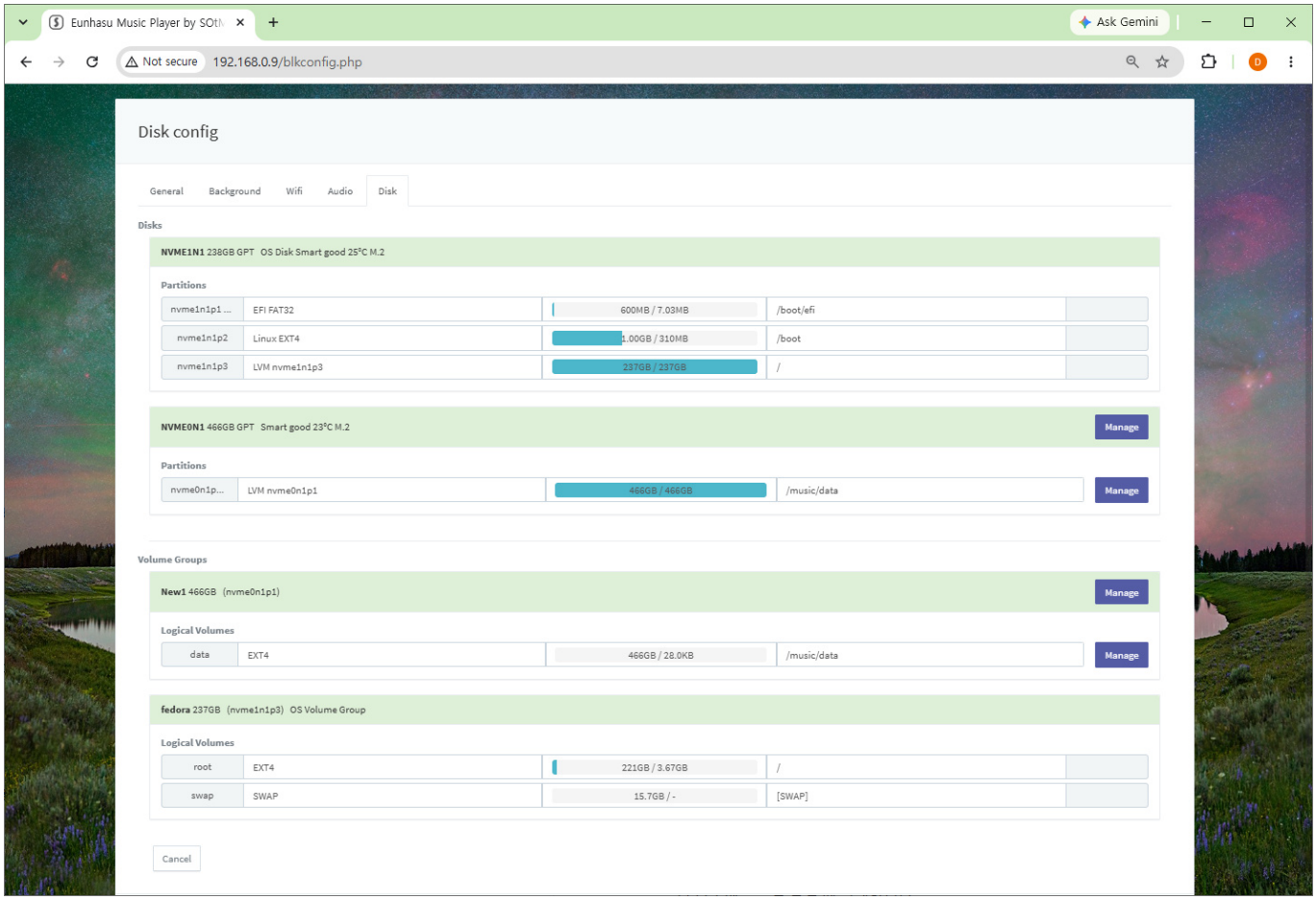


In the Logical volume's Manage menu, click Mount file system, check the Mount point, then click Mount.



- **Mount point**: The location to mount to. The default is /music/data.
- **Mount at boot**: When selected, the volume is mounted automatically when the product boots.

When mounting is complete, Logical Volumes shows the Logical volume's usage and Mount point.

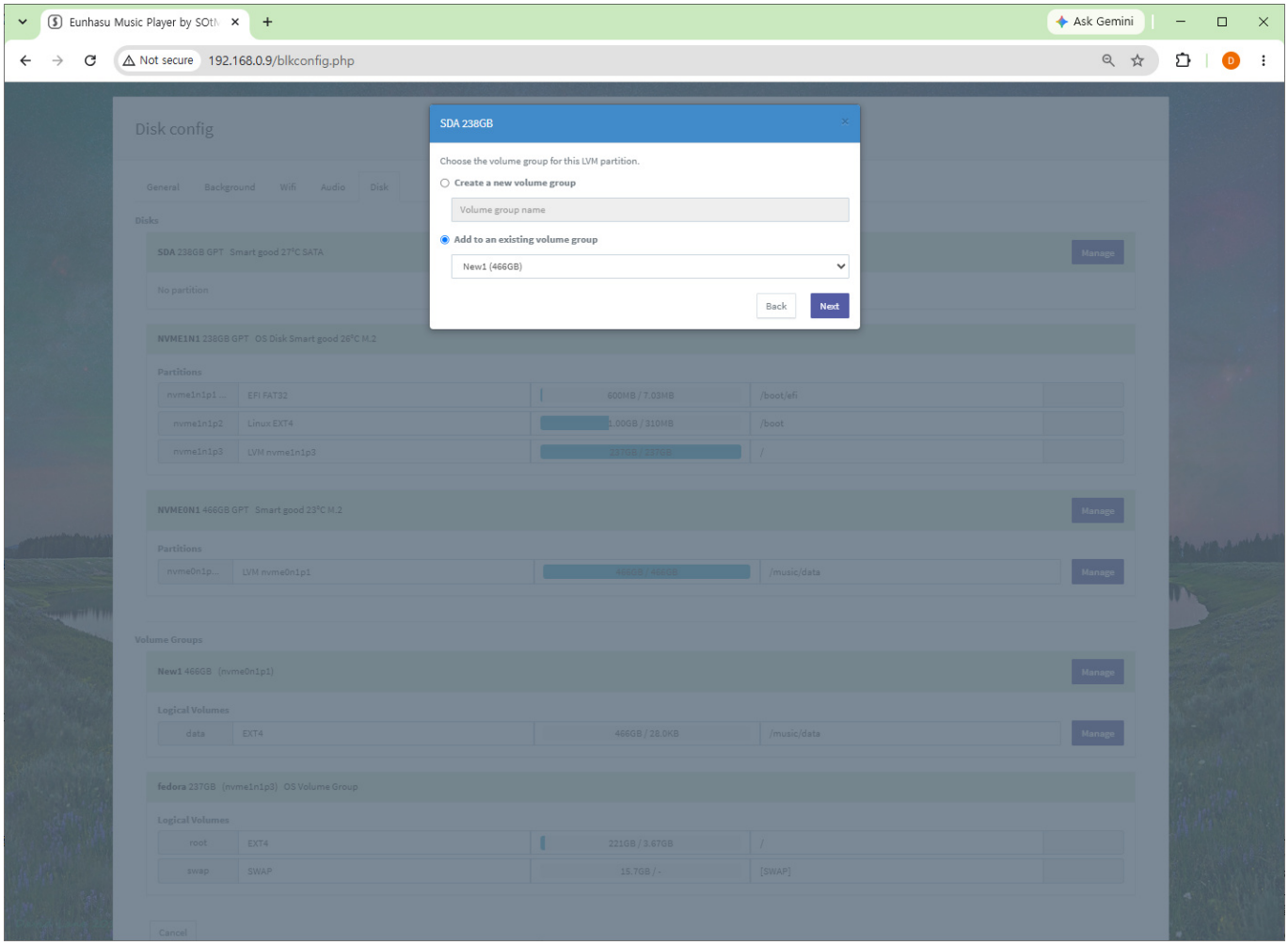


Adding a Disk to Increase / Reduce Capacity (LVM)

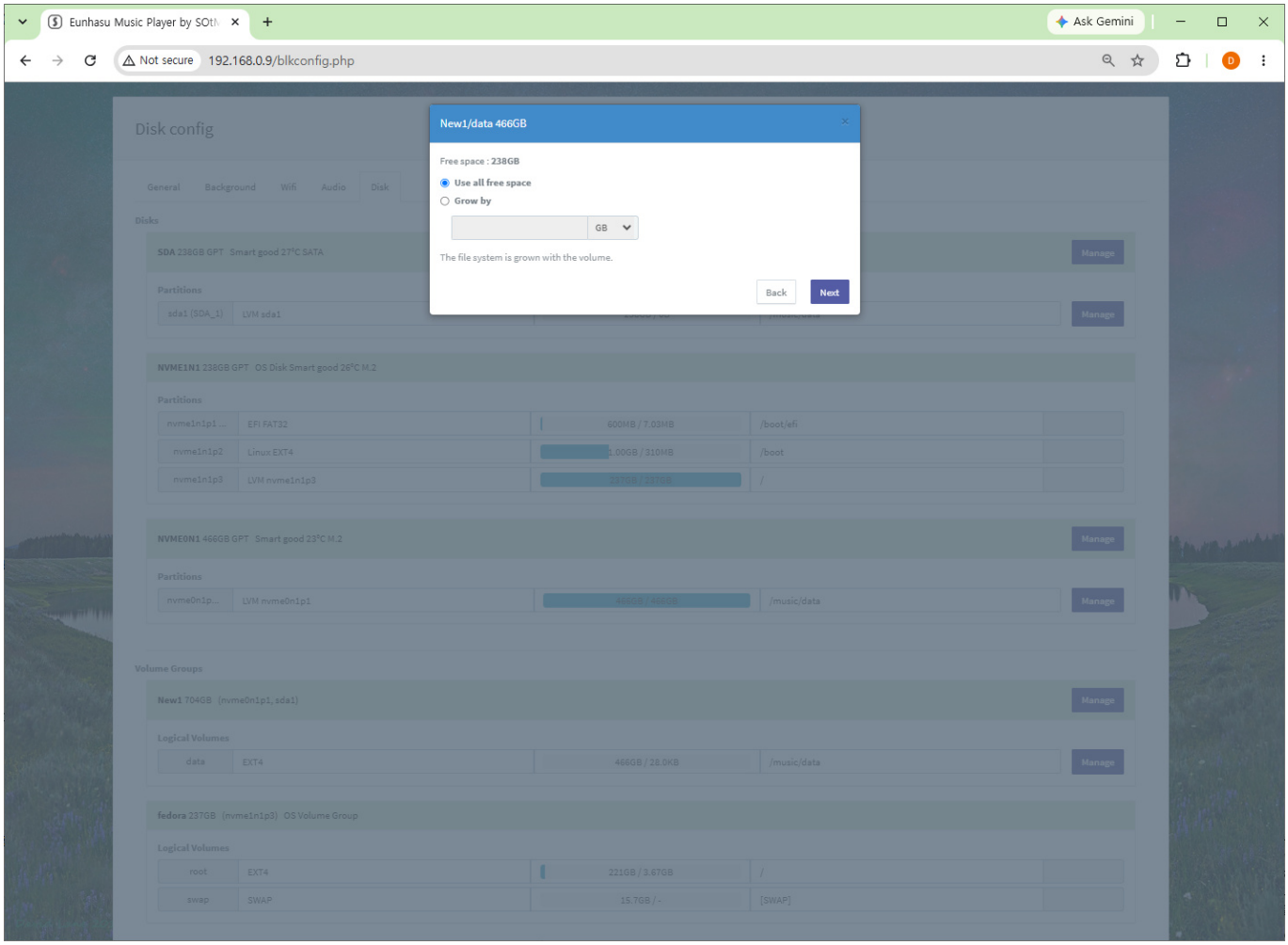
You can add a new disk to a Volume group in use to increase the capacity of a Logical volume. The Mount point and stored files are kept as they are.

With the product turned off, connect the disk to add, then boot the product.

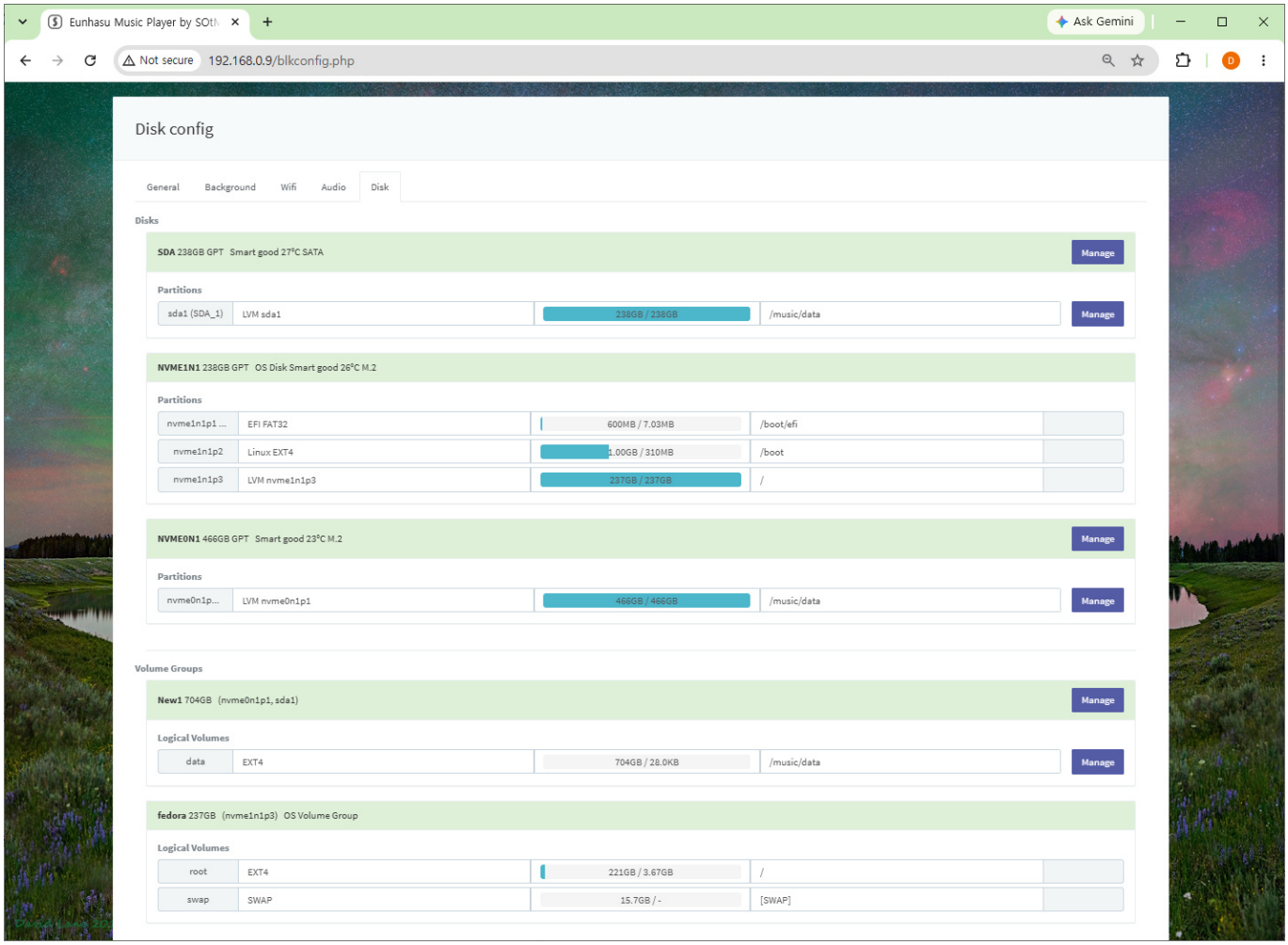
In the new disk's Manage menu, click Add partition and select PV (LVM) as the usage type. On the Volume group selection screen, select Add to an existing volume group and choose the Volume group to expand. The remaining steps for entering the partition name and size and confirming are the same as in 'Internal Disk – Using with LVM'.



In the Logical volume's Manage menu, click Grow volume and specify the amount to increase. This can be done even while the Logical volume is mounted.

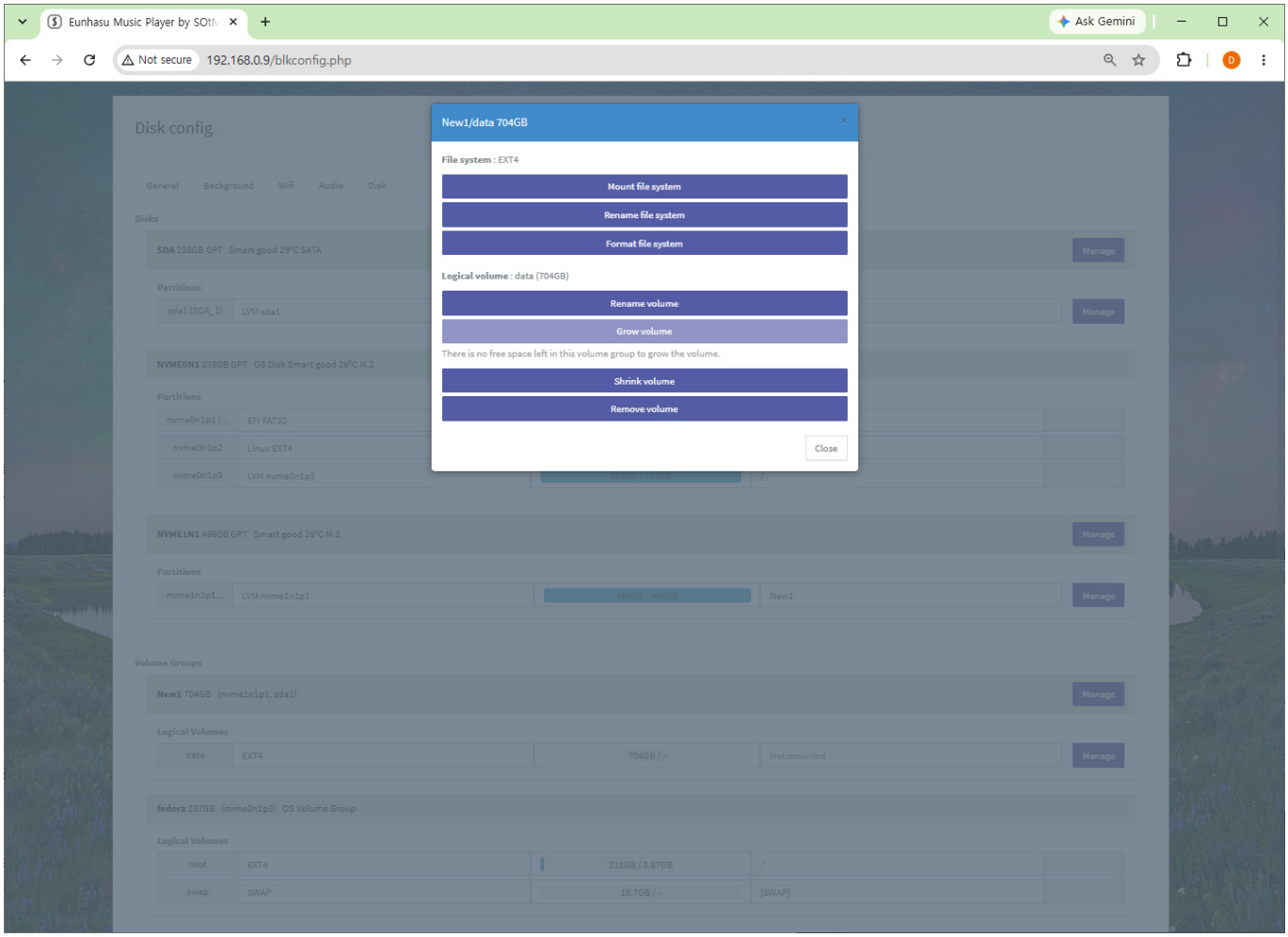


- **Use all free space**: Adds all remaining space in the Volume group to the Logical volume.
- **Grow by**: Increases the Logical volume's capacity by the amount entered.



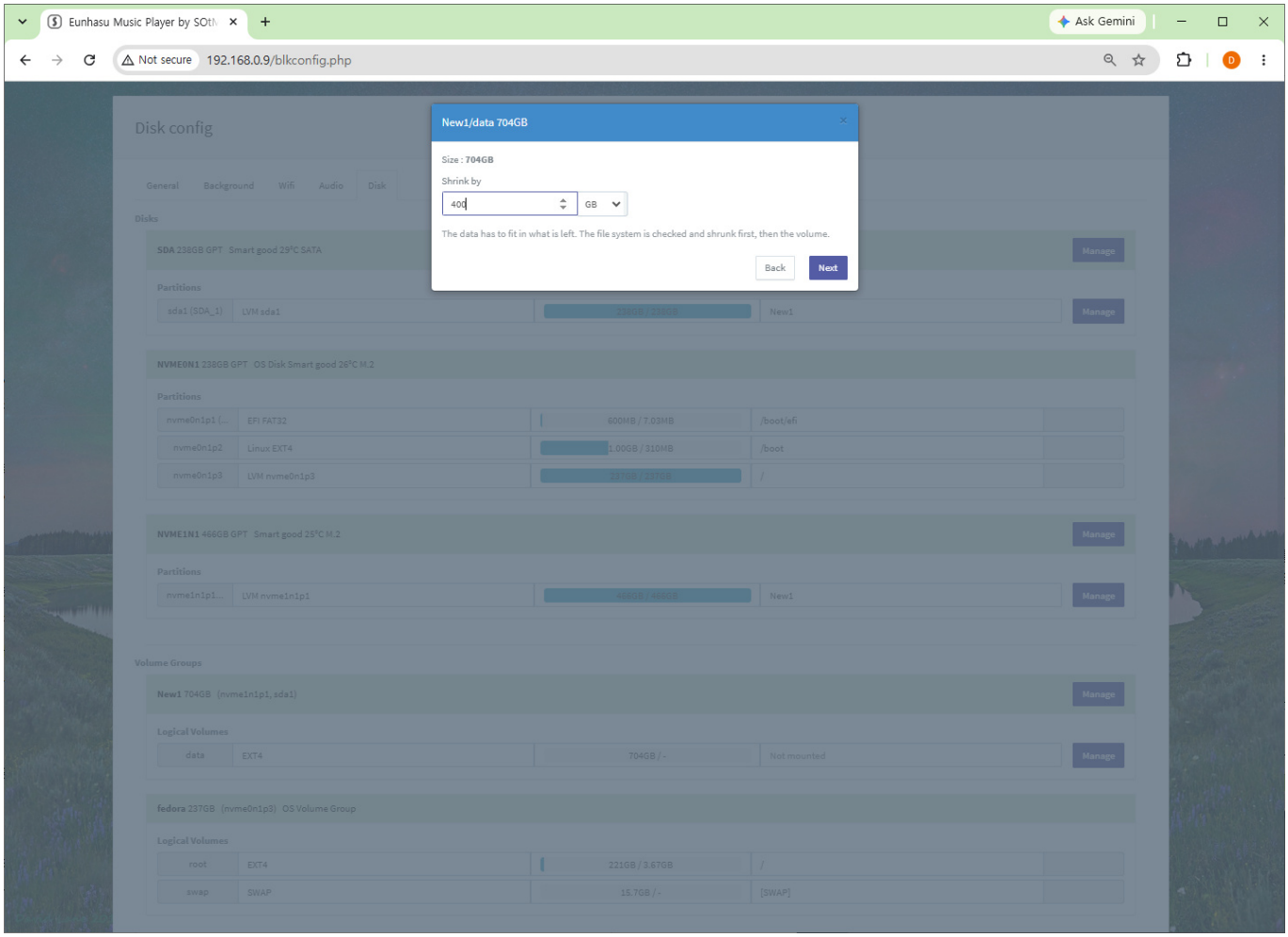
Reducing Capacity

You can shrink a Logical volume to free up space in the Volume group. After unmounting the Logical volume, click Shrink volume in the Logical volume's Manage menu. This cannot be done while it is mounted.

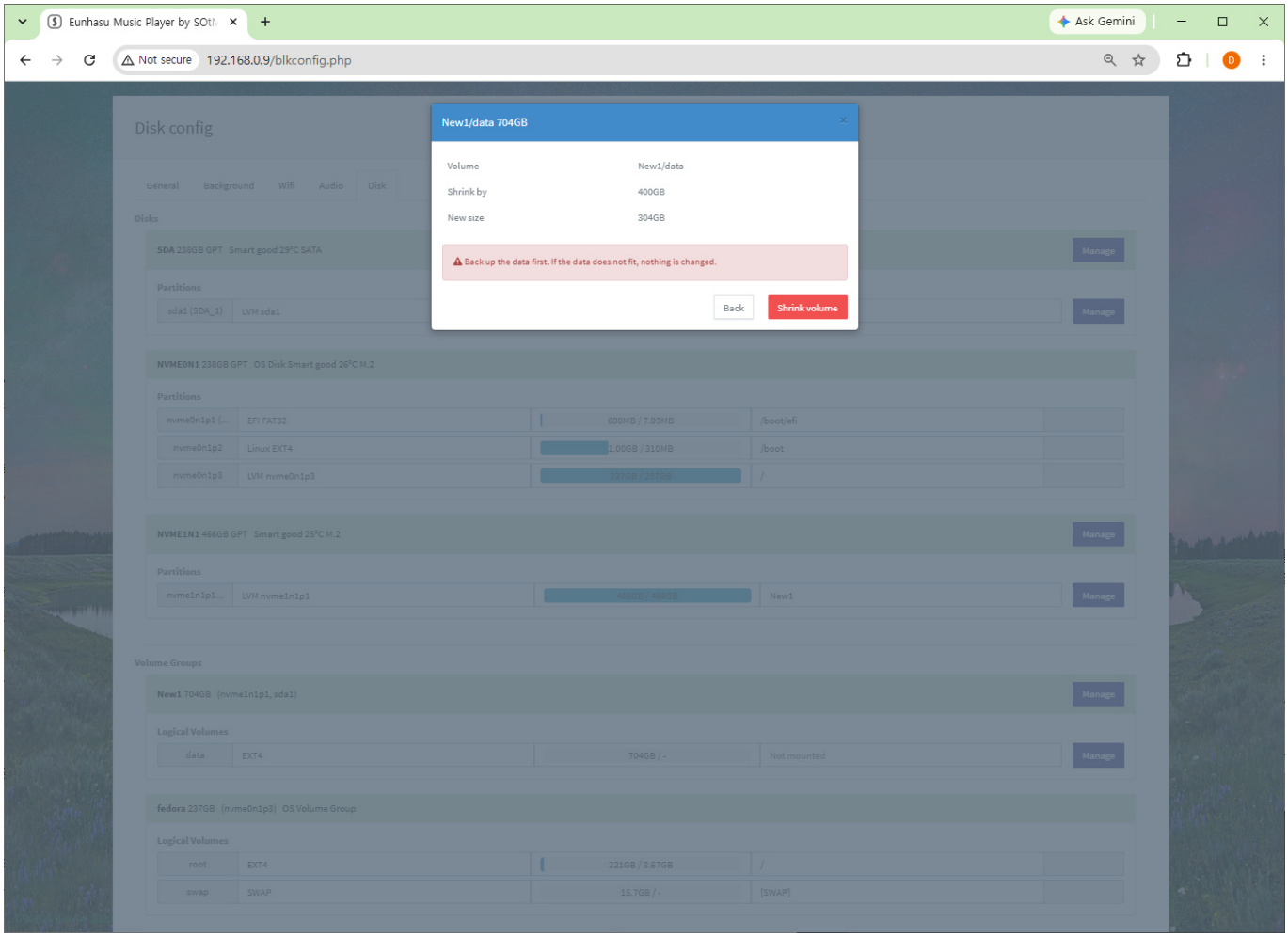


As in the screen above, if there is no free space left in the Volume group, Grow volume is disabled and “There is no free space left in this volume group to grow the volume.” is shown.

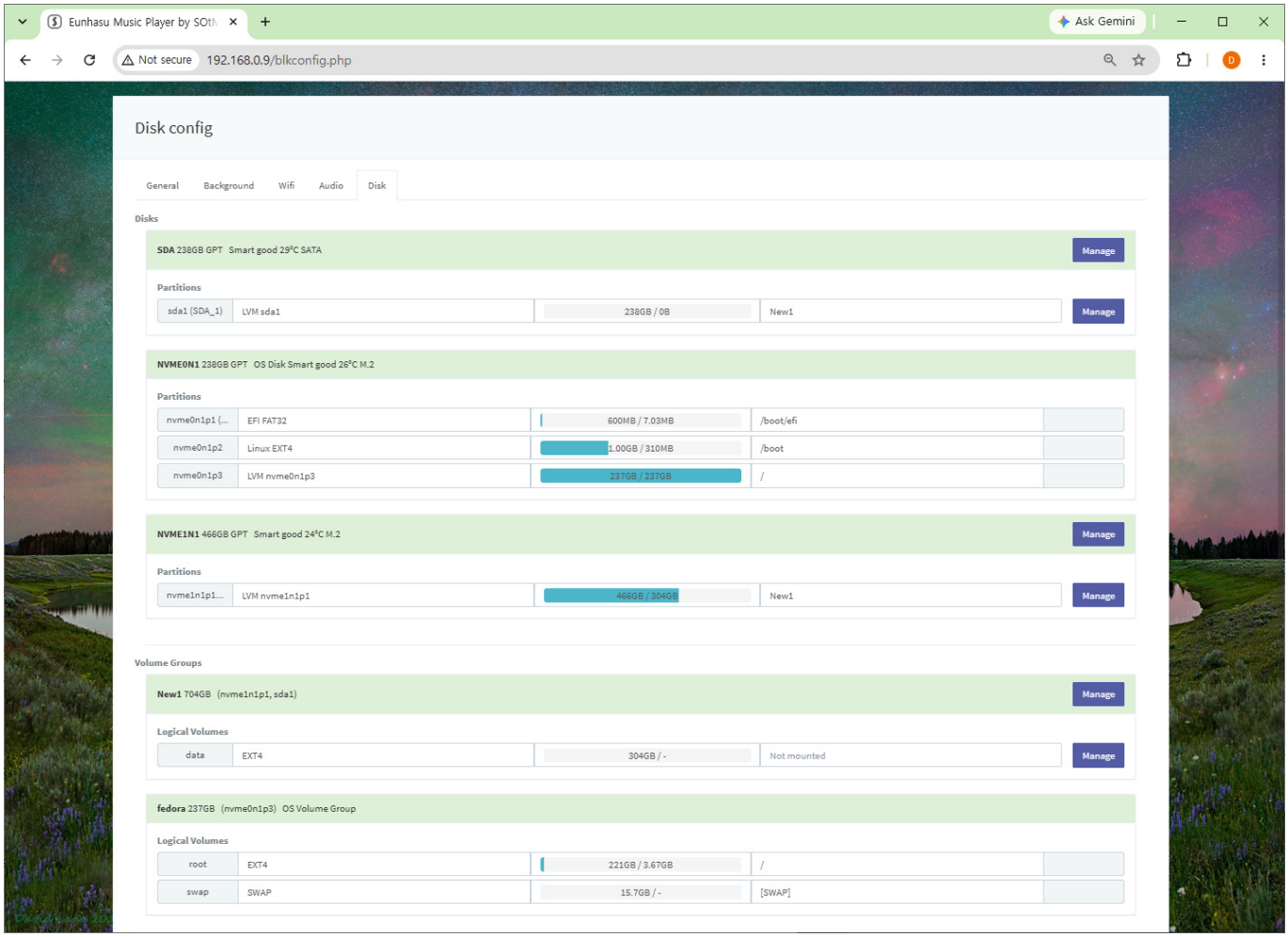
Enter the amount to shrink by in Shrink by and click Next. Select a unit (GB, etc.) and enter a number. Stored data must fit within the reduced size; the file system is checked and shrunk first, then the Logical volume is shrunk.



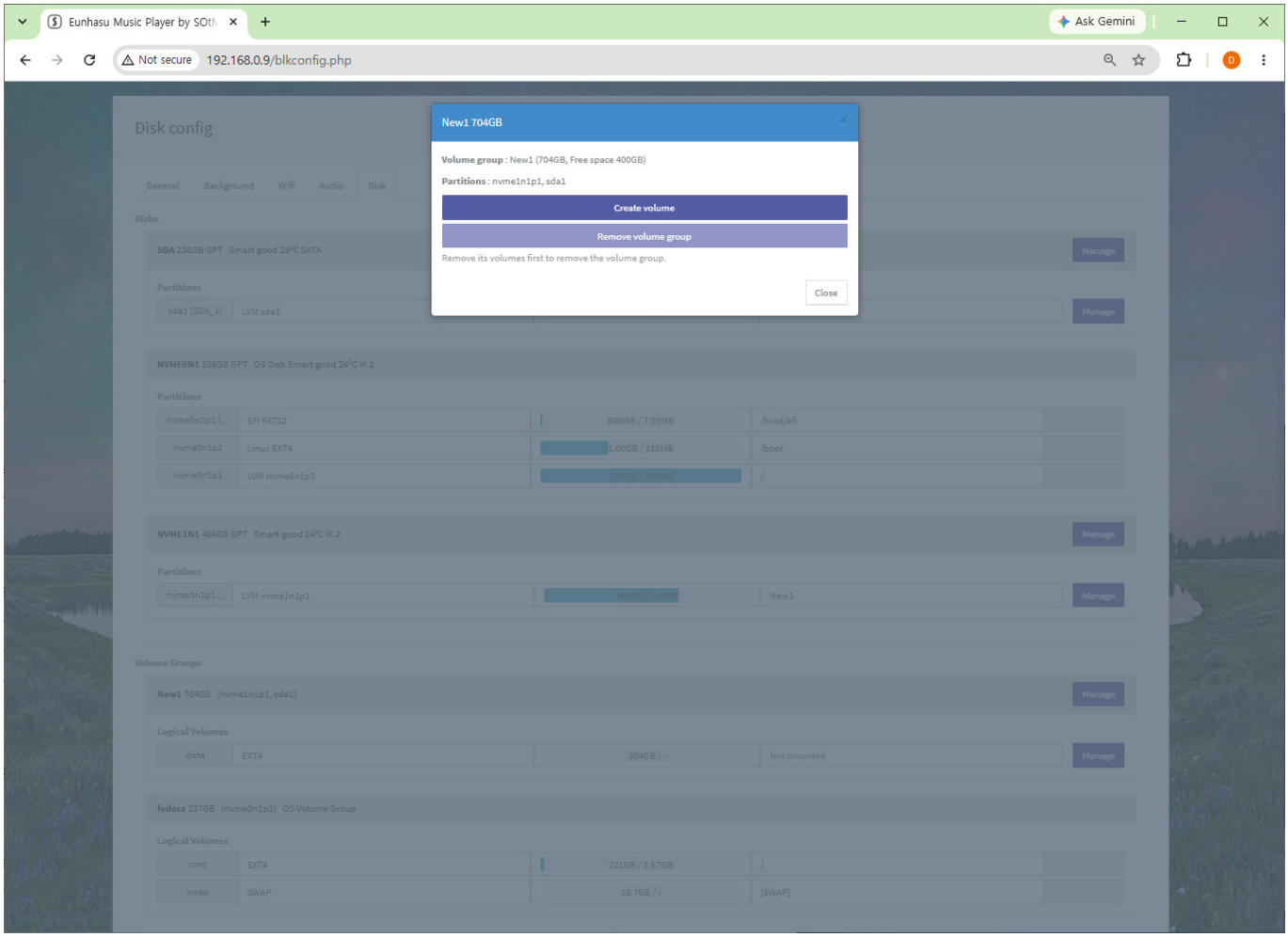
On the confirmation screen, check the amount to shrink by (Shrink by) and the size after the change (New size), then click Shrink volume. If the data does not fit within the reduced size, the operation does not proceed and the Logical volume is not changed. Back up important files before proceeding.



When complete, Logical Volumes shows the new Logical volume size. The total size of the Volume group does not change, and free space equal to the reduced amount is created in the Volume group.



You can check the free space (Free space) in the Volume group's Manage menu. In the free space, you can create a new Logical volume with Create volume, or increase a Logical volume's capacity again with Grow volume. While any Logical volume remains in the Volume group, Remove volume group is disabled.

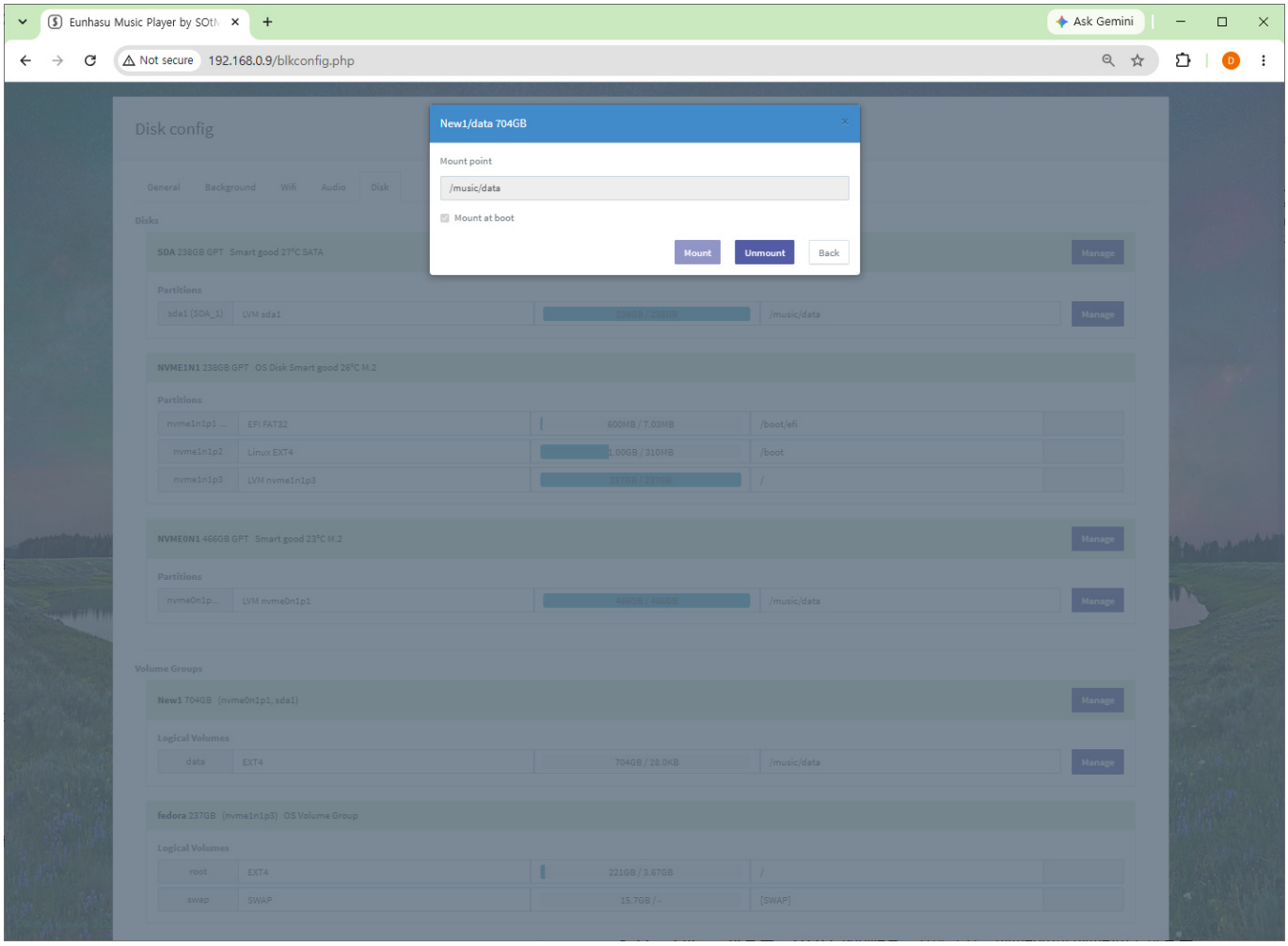


Removing a Disk

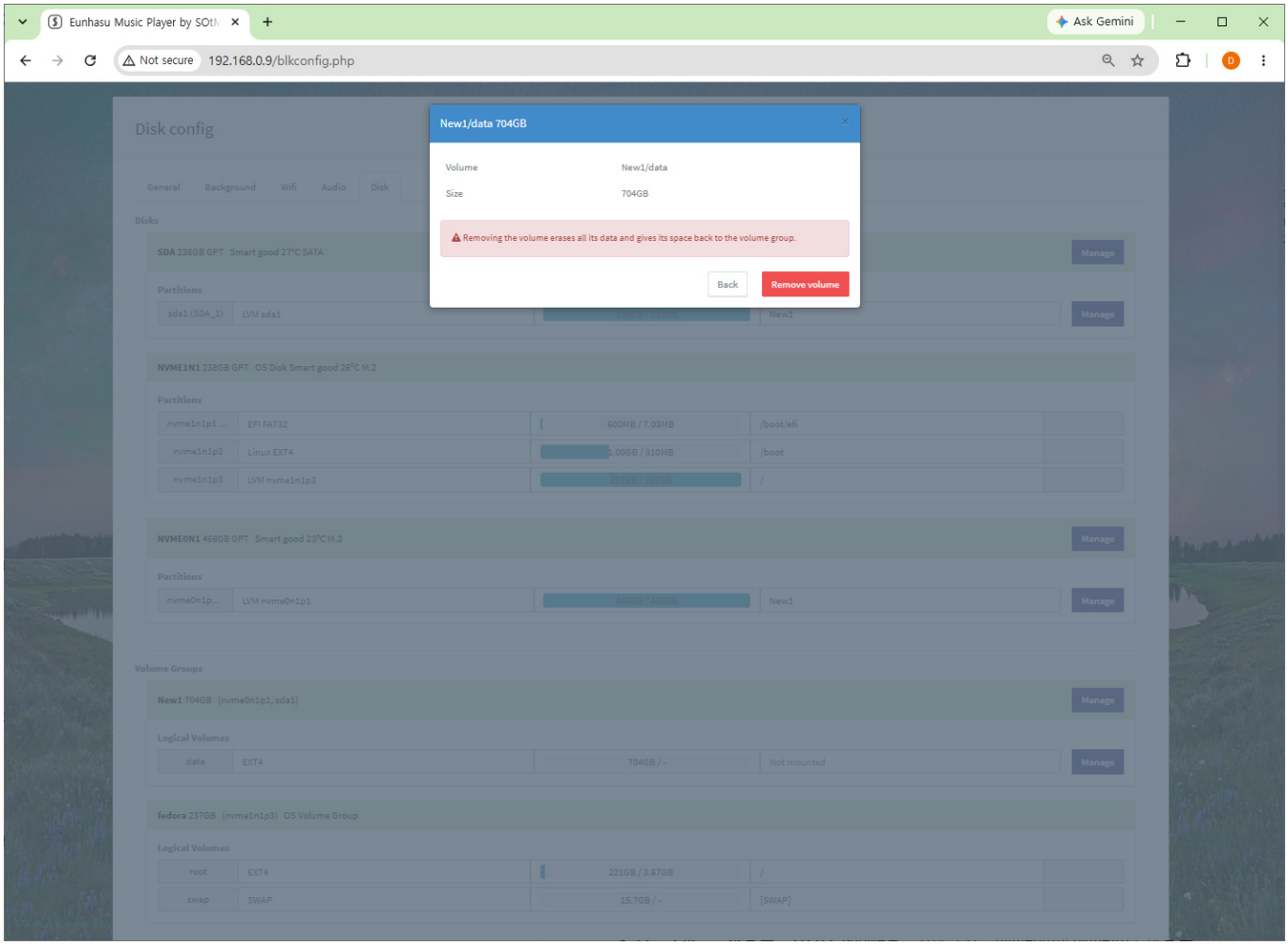
This section explains how to remove a disk. Once a Logical volume or partition is deleted, the data stored on it cannot be recovered.

For a disk used as a regular partition, unmount the partition, click Remove partition in the partition's Manage menu to delete it, then turn off the product and disconnect the disk. For a disk configured with LVM, remove it in the following order.

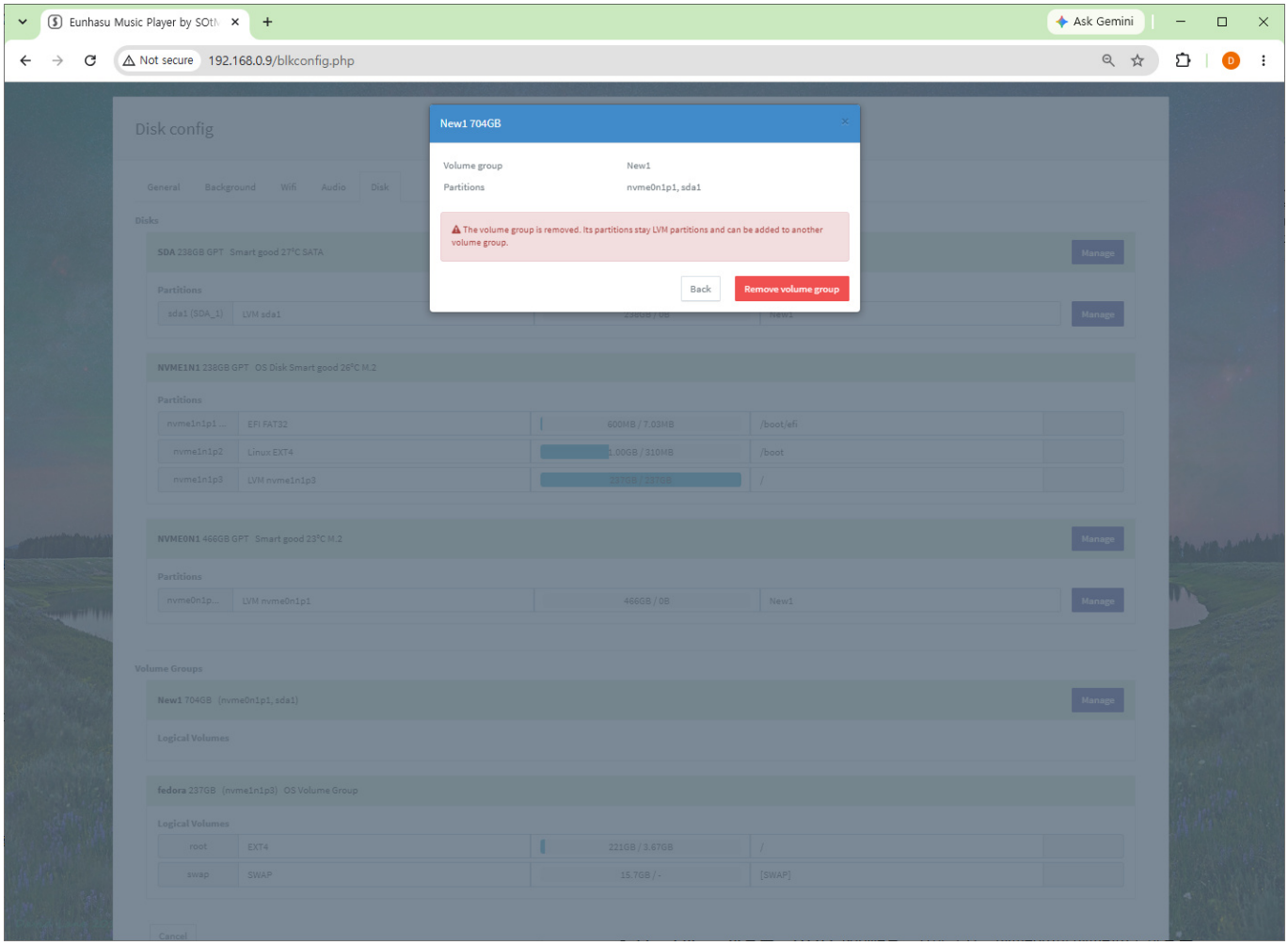
In the Logical volume's Manage menu, click Mount file system, then click Unmount.



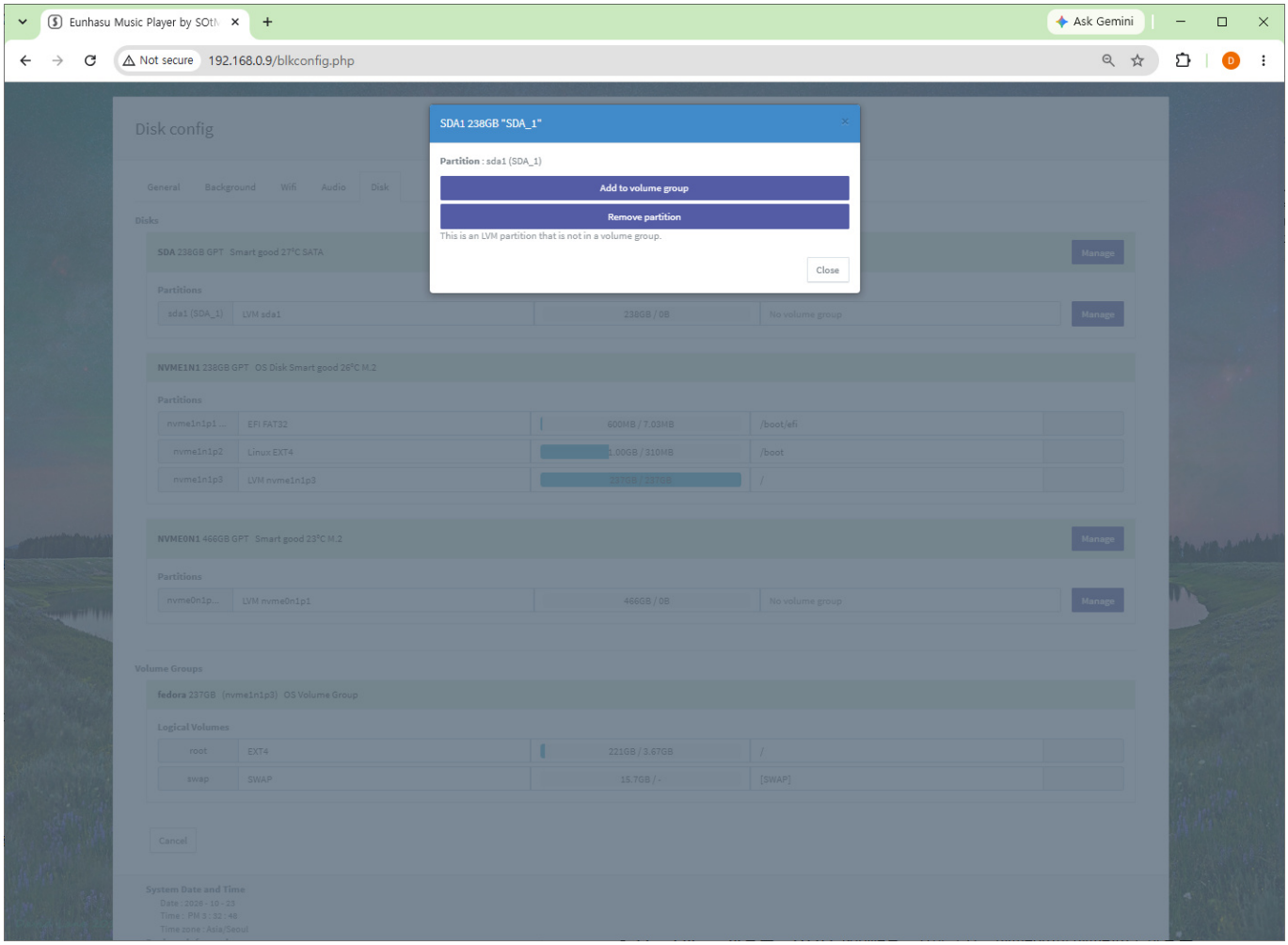
In the Logical volume's Manage menu, click Remove volume. The Logical volume and all data stored on it are deleted.



In the Volume group's Manage menu, click Remove volume group to delete the Volume group.



In the PV partition's Manage menu, click Remove partition. Once the partition is deleted, turn off the product and disconnect the disk.



Caution: Removing Only One Disk from an LV Spanning Multiple Disks

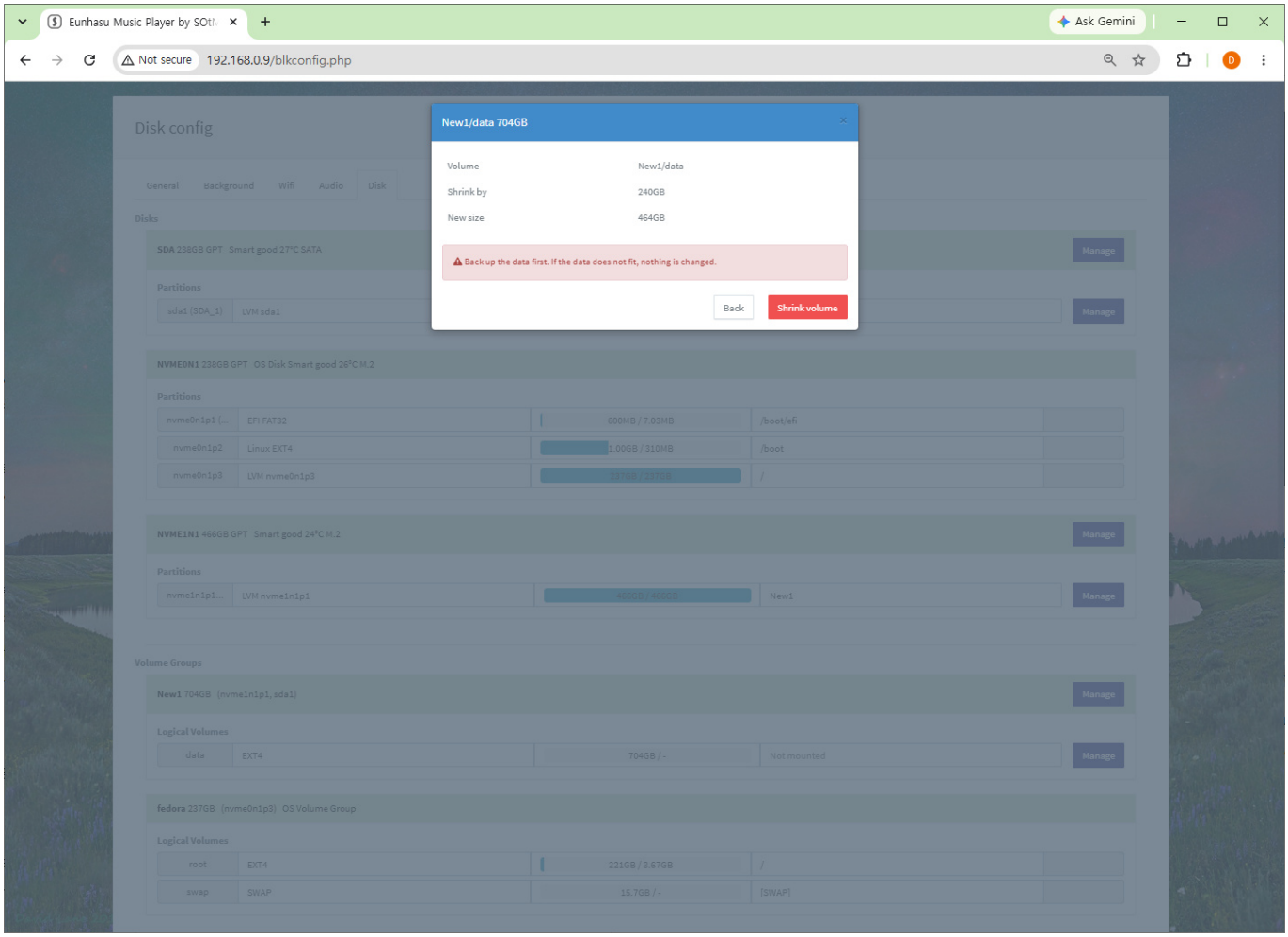
In an LV made up of multiple disks, data is spread across all of the disks. If one disk is disconnected or fails, the entire LV becomes unusable and data may be lost.

To remove only one disk, follow the steps below.

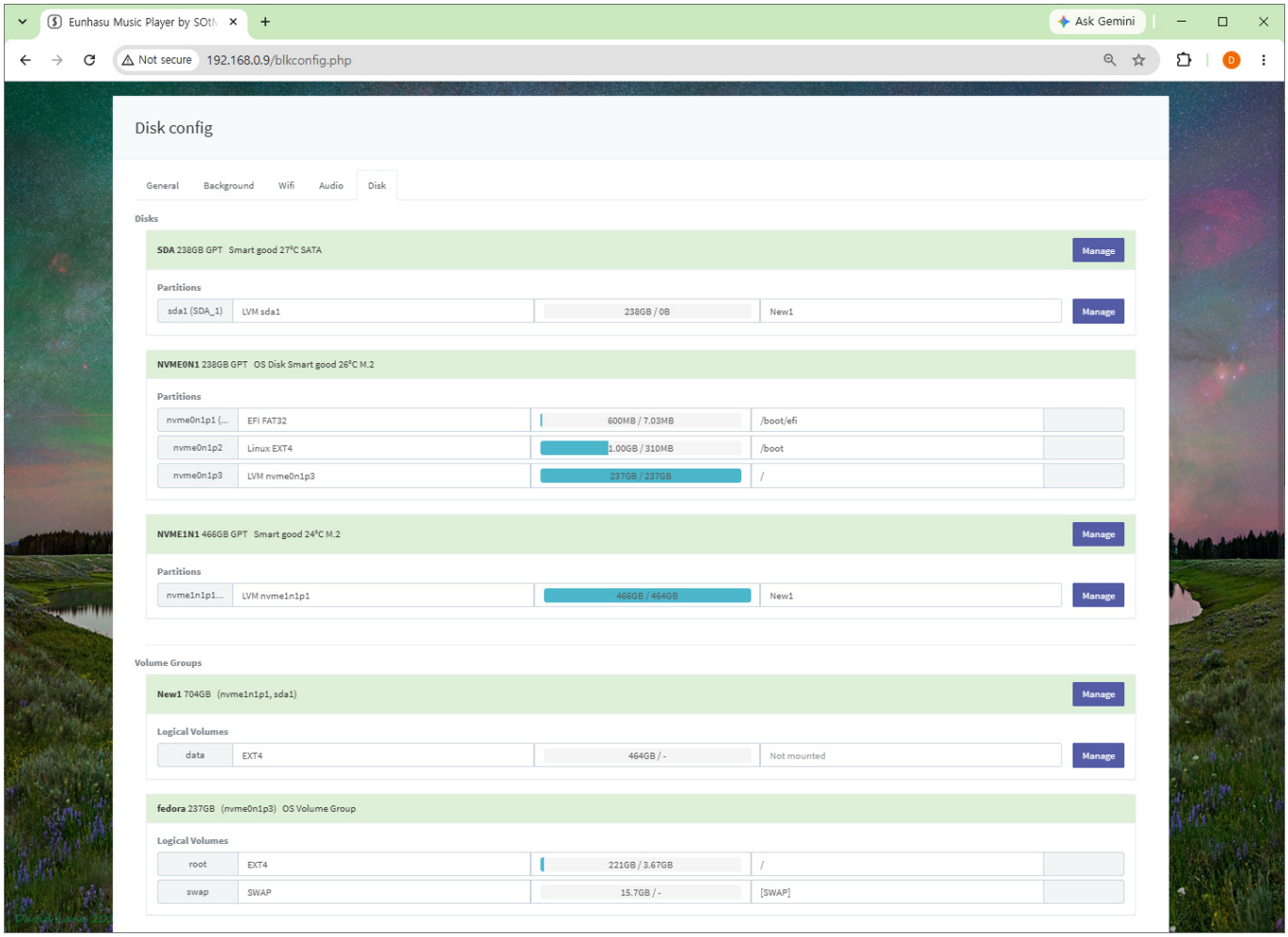
1. Back up important files.

2. Shrink the Logical volume

Unmount the Logical volume and reduce its size with Shrink volume. The capacity shown on screen is rounded, so shrink by a little more than the size of the disk you are removing (e.g., 240GB for a 238GB disk).

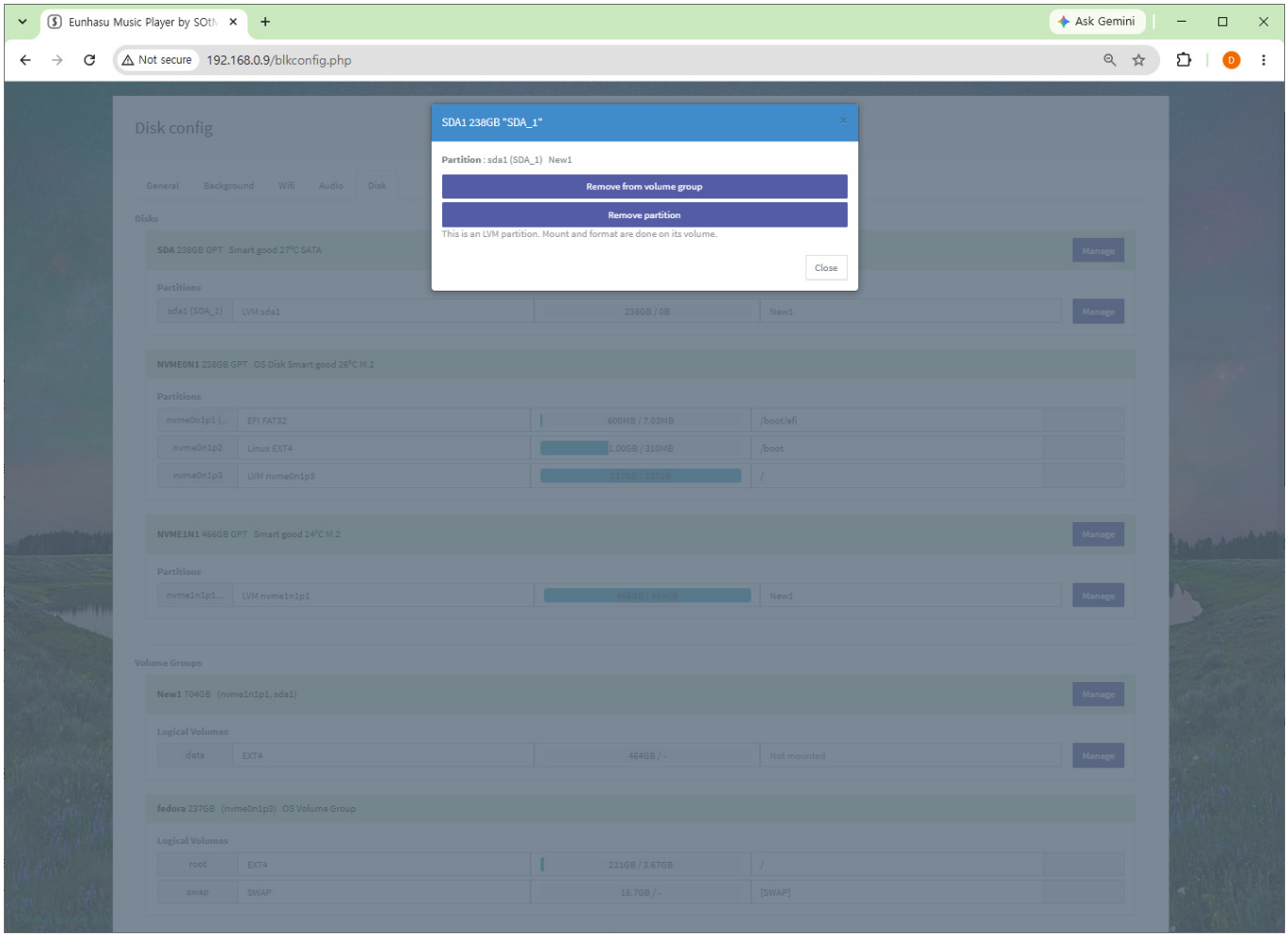


When finished, check that the usage of the partition on the disk to be removed is 0B. If it is not 0B, data still remains on that disk, so shrink the Logical volume further.

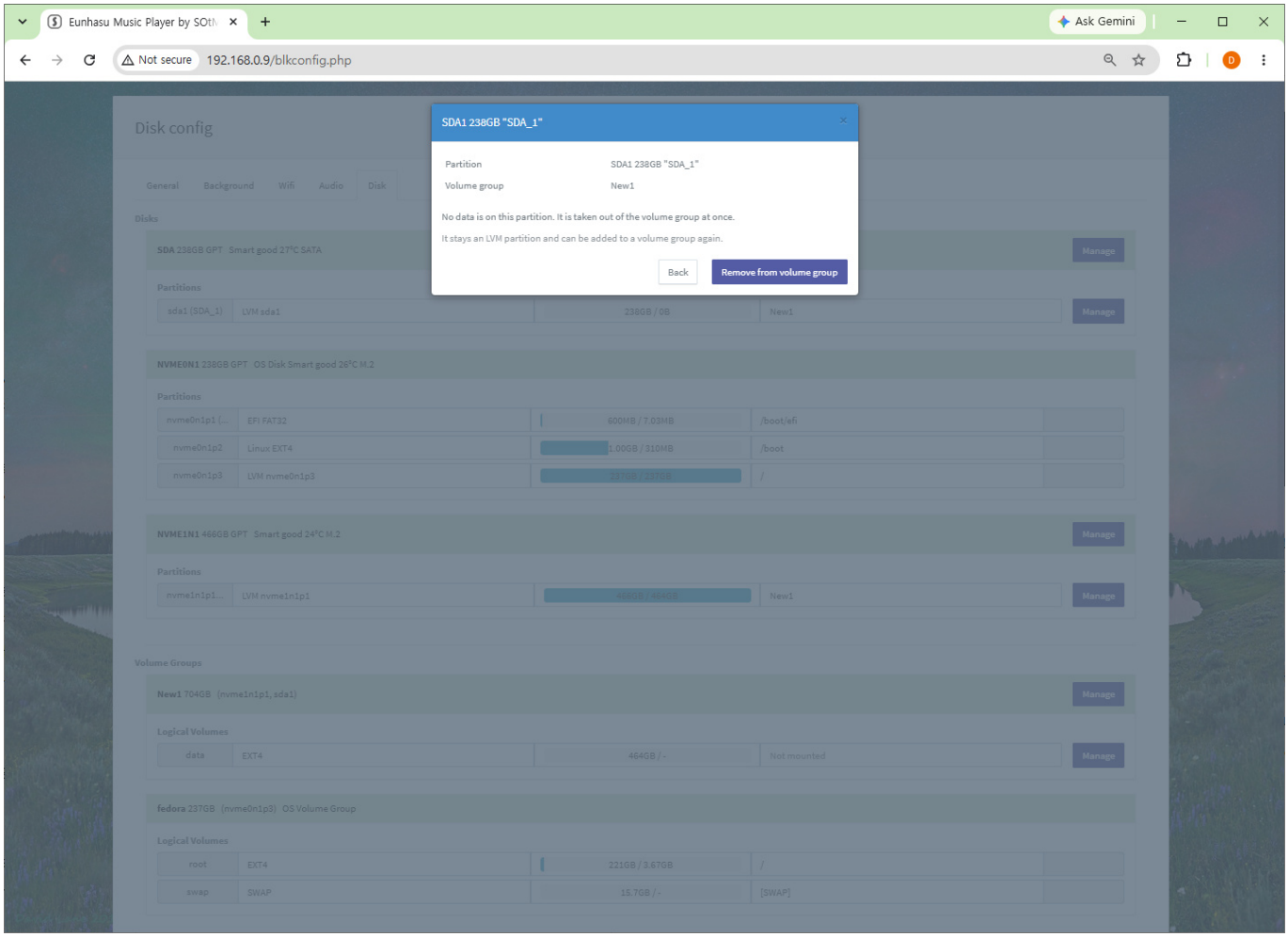


3. Remove from the Volume group

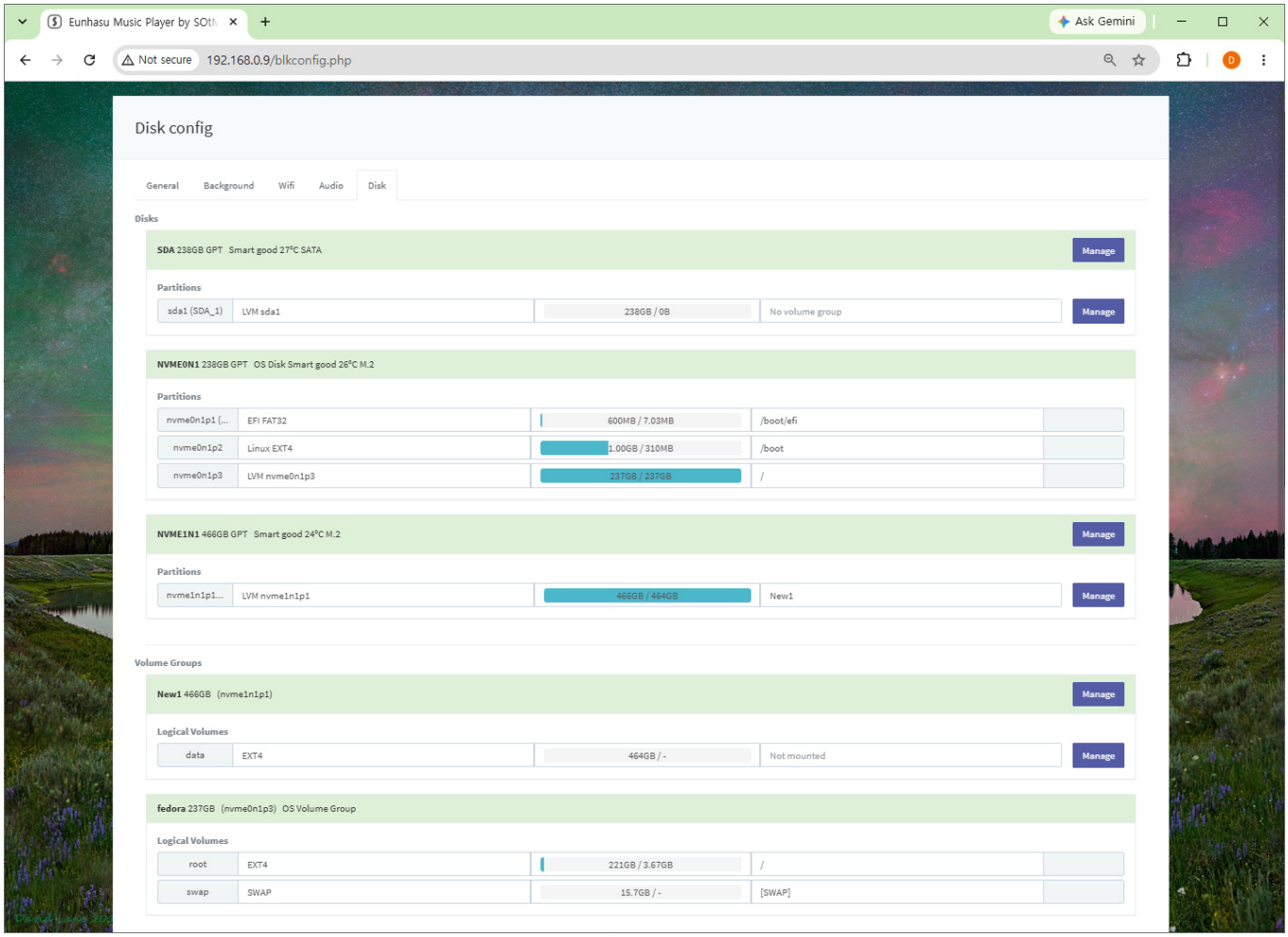
In the Manage menu of the partition on the disk to be removed, click Remove from volume group.



On the confirmation screen, click Remove from volume group. If the partition holds no data, it is removed from the Volume group immediately. The partition remains as an LVM partition and can be added to a Volume group again.

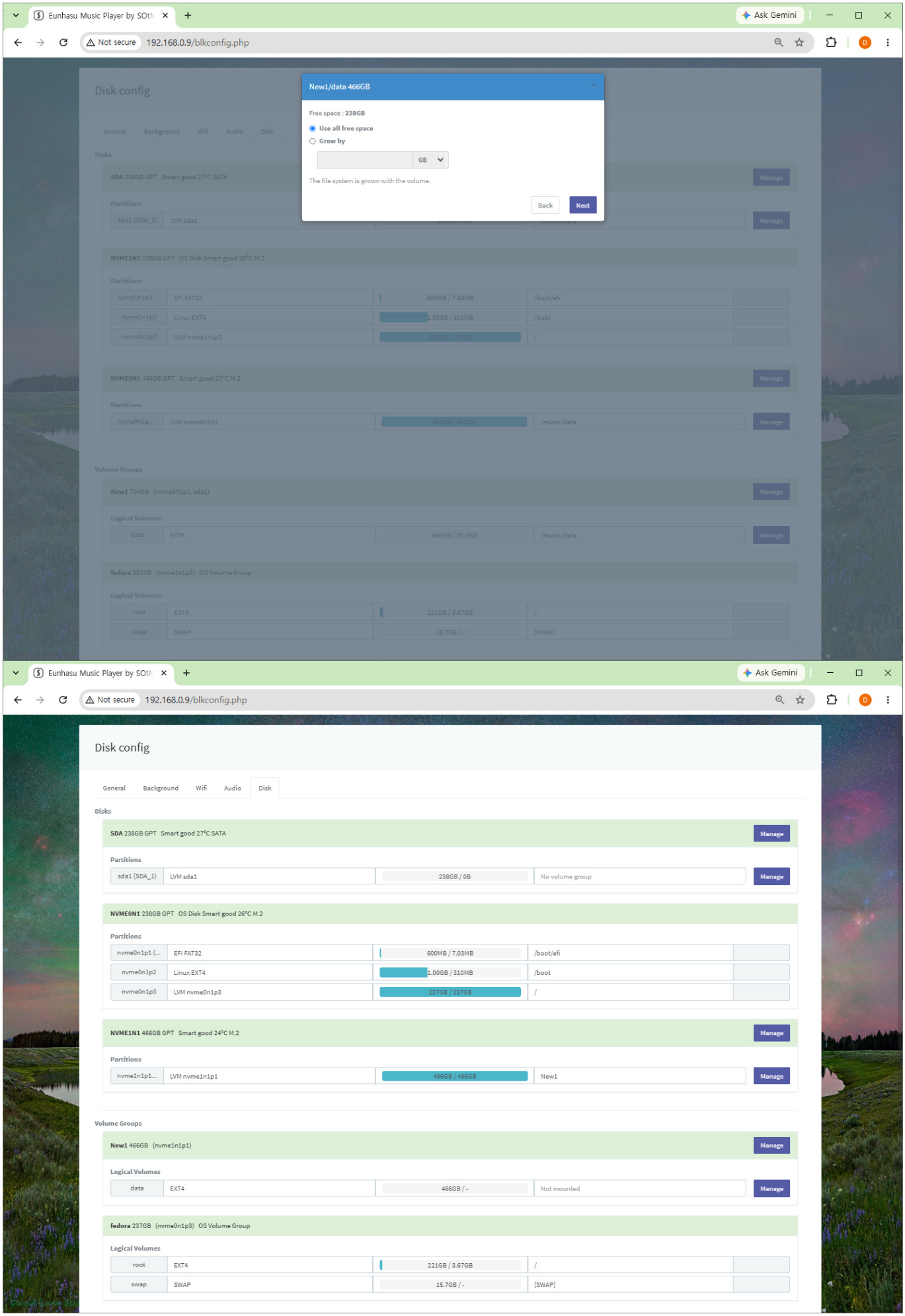


When finished, the partition shows No volume group, and the Volume group's capacity decreases.



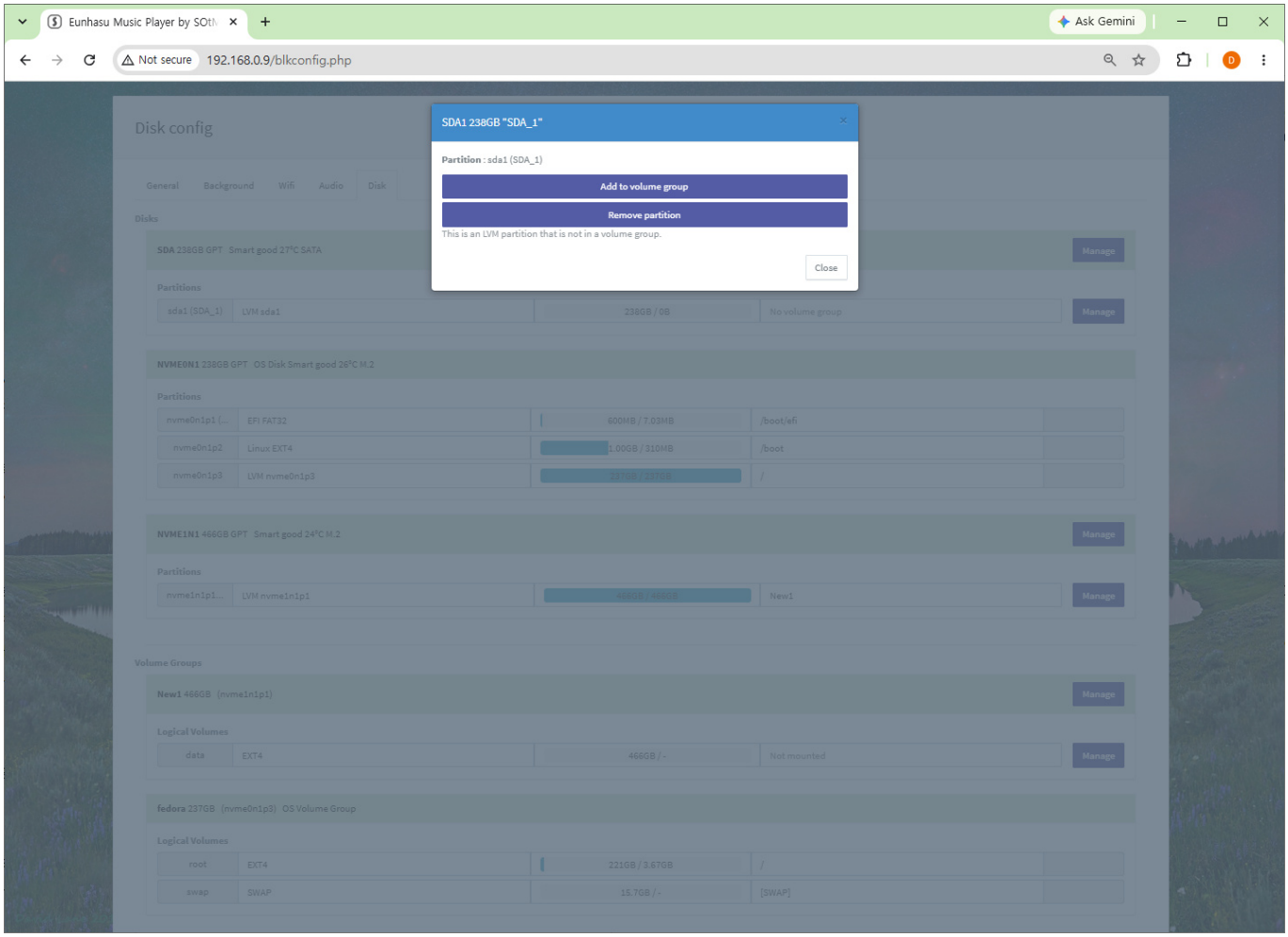
4. Reclaim the remaining space

Because you shrank the volume with some margin, free space remains in the Volume group. In the Logical volume's Manage menu, select Grow volume → Use all free space to add the remaining space back to the Logical volume.


Eunhasu Music Player by SOtM
Ask Gemini
Not secure
192.168.0.9/blkconfig.php
Disk config
New1/data 466GB
Free space : 238GB
Use all free space
Grow by
GB
The file system is grown with the volume.
Back
Next
General
Background
Wifi
Audio
Disk
Disks
SDA 238GB GPT Smart good 27°C SATA
Manage
Partitions
sda1 (SDA_1)
LVM sda1
238GB / 0B
No volume group
NVME1N1 238GB GPT OS Disk Smart good 26°C M.2
nvme1n1p1 ...
EFI FAT32
600MB / 7.03MB
/boot/efi
nvme1n1p2
Linux EXT4
1.00GB / 310MB
/boot
nvme1n1p3
LVM nvme1n1p3
237GB / 237GB
/
NVME0N1 466GB GPT Smart good 23°C M.2
nvme0n1p...
LVM nvme0n1p1
466GB / 466GB
/music/data
Volume Groups
New1 704GB (nvme0n1p1, sda1)
Logical Volumes
data
EXT4
466GB / 28.0KB
fedora 237GB (nvme1n1p3) OS Volume Group
root
EXT4
221GB / 3.67GB
swap
SWAP
15.7GB / -
[SWAP]
Eunhasu Music Player by SOtM
Ask Gemini
Not secure
192.168.0.9/blkconfig.php
Disk config
General
Background
Wifi
Audio
Disk
Disks
SDA 238GB GPT Smart good 27°C SATA
Manage
Partitions
sda1 (SDA_1)
LVM sda1
238GB / 0B
No volume group
Manage
NVME0N1 238GB GPT OS Disk Smart good 26°C M.2
Partitions
nvme0n1p1 (...
EFI FAT32
600MB / 7.03MB
/boot/efi
nvme0n1p2
Linux EXT4
1.00GB / 310MB
/boot
nvme0n1p3
LVM nvme0n1p3
237GB / 237GB
/
NVME1N1 466GB GPT Smart good 24°C M.2
Manage
Partitions
nvme1n1p1...
LVM nvme1n1p1
466GB / 466GB
New1
Manage
Volume Groups
New1 466GB (nvme1n1p1)
Manage
Logical Volumes
data
EXT4
466GB / -
Not mounted
Manage
fedora 237GB (nvme0n1p3) OS Volume Group
Logical Volumes
root
EXT4
221GB / 3.67GB
/
swap
SWAP
15.7GB / -
[SWAP]

5. Disconnect the disk

Clicking Manage on the partition removed from the Volume group shows the following menu.



- **Add to volume group**: Adds the partition back to a Volume group.
- **Remove partition**: Deletes the partition.

To disconnect the disk, delete the partition with Remove partition, then turn off the product and disconnect the disk.

To remove all disks, follow the removal order above (Unmount → Remove volume → Remove volume group → Remove partition), then disconnect the disks.

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