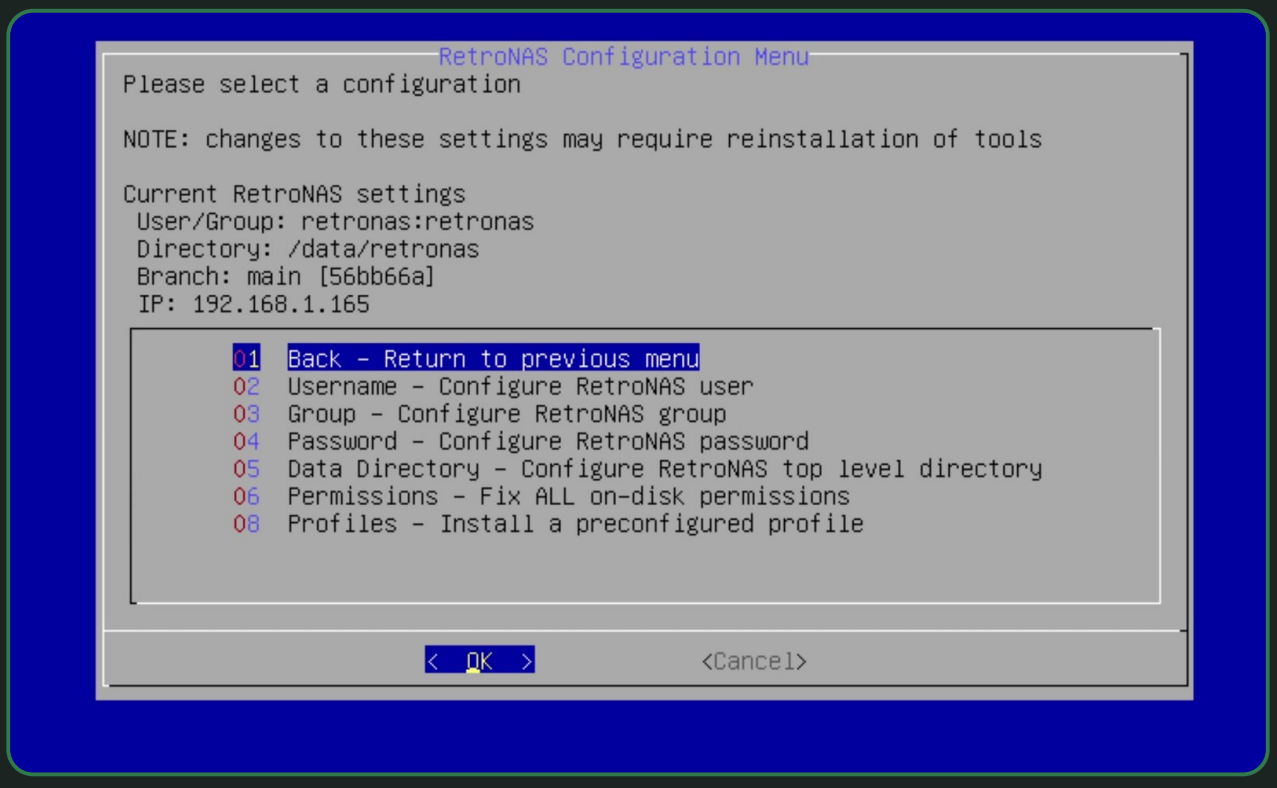
> RETRONAS SETUP GUIDE

RetroNAS on a UGREEN NAS

// play PS2 games over your network, straight from the NAS
// running in a virtual machine alongside UGOS



Tested on: UGREEN NAS DXP4800 Pro, UGOS (formerly UGOS Pro), 4 x Seagate IronWolf 4TB in RAID 5, PS2 Slim with OPL v1.2.0
You'll end up with: a RetroNAS virtual machine serving PS2 games to Open PS2 Loader (OPL), with no disc drive needed
Time: about an hour, most of it waiting for installs

Mark Fixes Stuff · markfixesstuff.com · written November 2026 from the install and tests filmed for the video · sponsored by UGREEN

START HERE

Before you begin

This guide follows exactly what I did on camera, including the two things that tripped me up, so you can skip them. No Linux knowledge needed: every command is in a dark box, and you type it (or copy and paste it) exactly as shown, then press **Enter**.

You'll need

- A UGREEN NAS running UGOS, with drives fitted. I used the DXP4800 Pro.
- A Windows PC on the same home network.
- A PS2 that runs Open PS2 Loader (I used a FreeMcBoot 1.966 memory card with OPL v1.2.0 on it). The PS2 Slim has a network port built in; an original "fat" PS2 needs the official network adapter.
- A decent Ethernet cable from the PS2 to your router or switch. Shorter and better quality is better: my long, cheap cable caused a couple of video dropouts.
- PS2 games ripped from discs you own, as `.iso` files.
- Paper and a pen for the passwords and the IP address.

How to use the command boxes

- Type one box at a time and wait for it to finish. It's finished when the line ending in `$` or `#` comes back.
- When something asks for a password, **nothing appears as you type**. That's normal.
- If it asks `Do you want to continue? [Y/n]`, type `y` and press Enter.
- Where you see `CHANGE-THIS`, swap in your own value and leave everything else as it is.

Write these down as you go

THING	YOUR VALUE
Debian root password	
retronas user password	
RetroNAS IP address	

HOME NETWORK ONLY

RetroNAS is built for old consoles, so it deliberately uses old, insecure file-sharing settings. The RetroNAS team say never expose it to the internet, and Debian 11 no longer gets security updates. Keep it on your home network and never port-forward to it.

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00 Fit the drives and connect
01 Create the storage pool
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08 Install RetroNAS

09 Set up the games disk
10 Set up RetroNAS for the PS2
11 Copy your games
12 PS2: set up Open PS2 Loader
13 Play, and fix problem games
14 If something goes wrong

PART 00

Fit the drives and connect

The DXP4800 Pro needs no tools for the drives. If yours is already set up and running UGOS, skip to Part 1.

1. Press the switch at the bottom of a drive bay and pull the caddy out.
2. Open the caddy by pressing the latch and sliding the mechanism open. Drop the drive in with its connector lined up with the pins, then close it.
3. Slide the caddy back in and press the lever down until it locks. The little lock below each lever stops them being pulled out by accident.
4. Plug in the power and an Ethernet cable. I used **LAN 1**, the 10GbE port. Remember which port you use: the network bridge in Part 2 is tied to it.
5. Turn it on, give it a few minutes to boot, then finish the UGOS first-time setup in your browser.



// A 4TB IronWolf going into its tool-free caddy



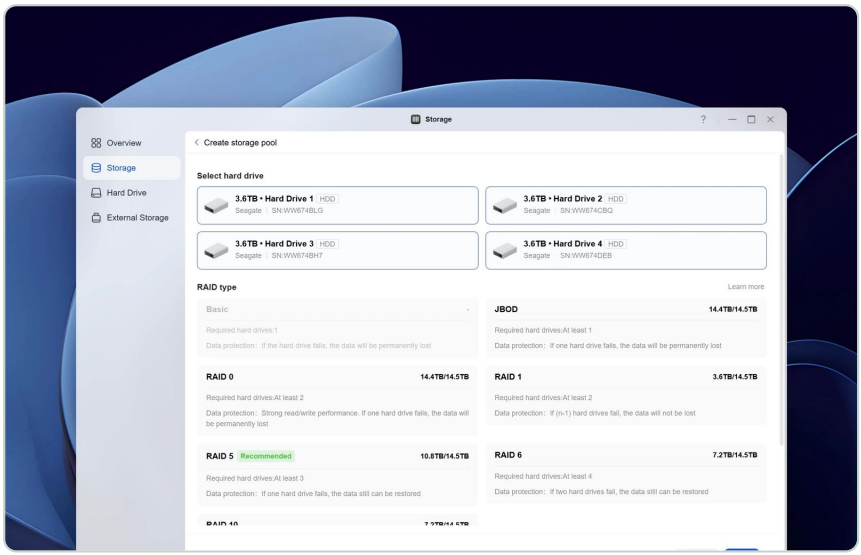
// Rear ports: 4K HDMI, USB, 2.5GbE (LAN 2) and 10GbE (LAN 1)

PART 01

Create the storage pool

If your NAS already has a storage pool and volume, skip to Part 2.

1. Open the **Storage** app and click **Create storage pool**.
2. Select all of your drives.
3. Choose a RAID type. With four drives, UGOS marks **RAID 5** as recommended: one drive's worth of space goes on protection, and any single drive can fail without losing data. My four 4TB drives gave 10.8TB usable.
4. Create the volume. I used **ext4**. Confirm the warning that the drives will be erased, and enter your admin password.



// Storage > Create storage pool: all four drives selected, with the RAID types listed below

TIP

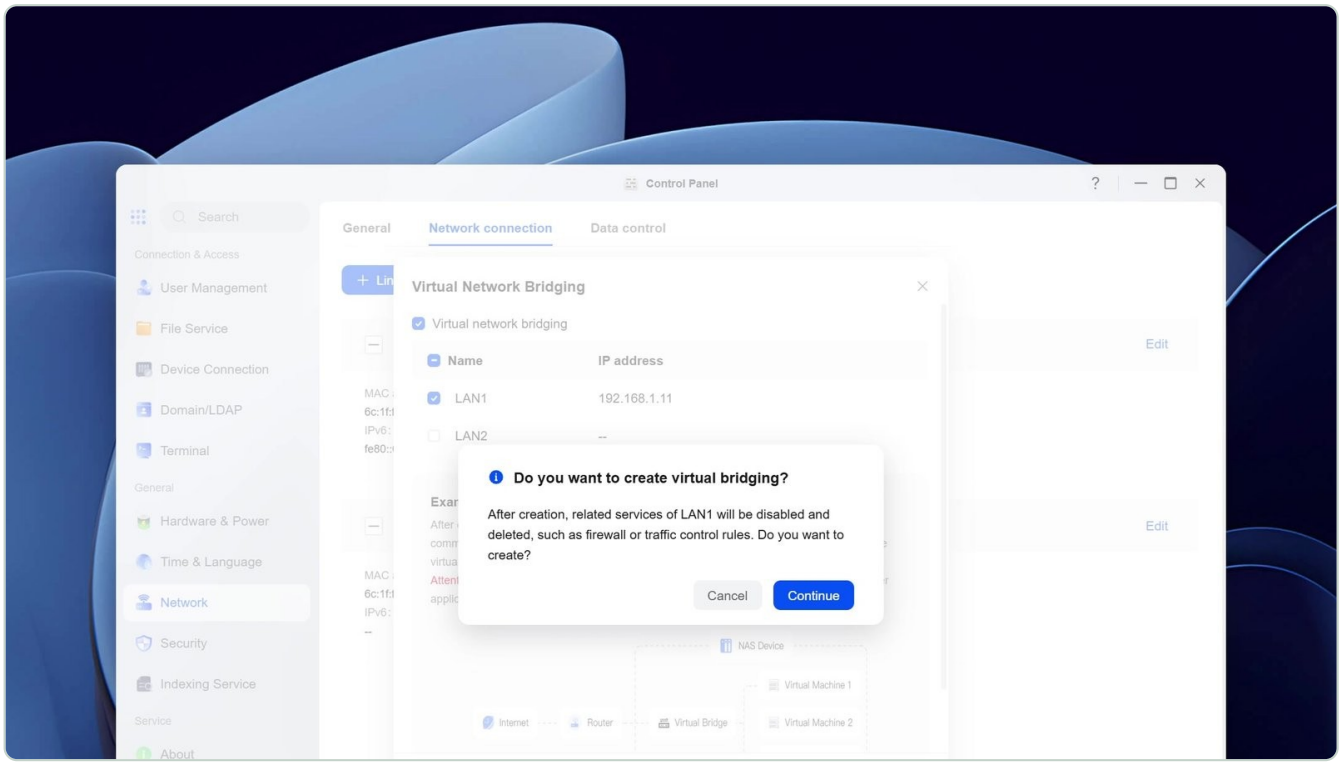
The pool says "Syncing" for hours afterwards. You can carry on straight away: the volume is usable while it syncs.

PART 02

Turn on network bridging

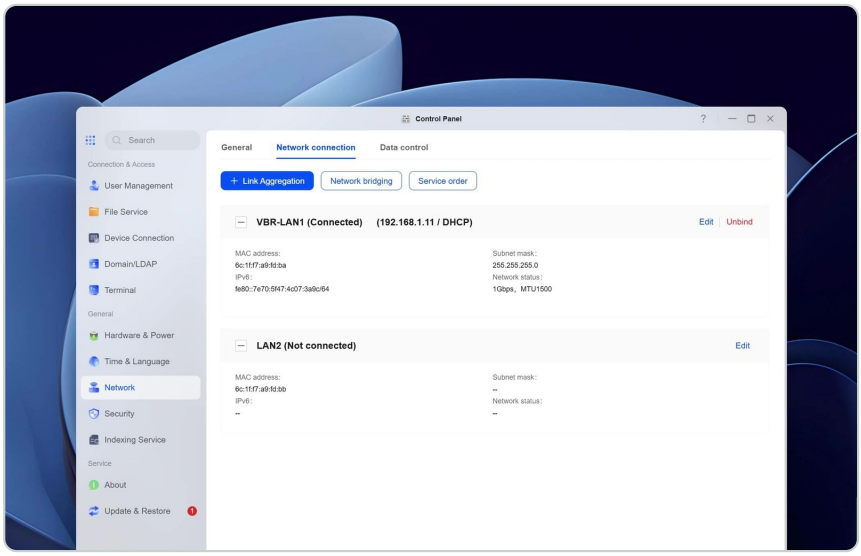
Your PS2 needs to see RetroNAS as its own device on the network, with its own IP address. A network bridge makes that possible.

1. Open **Control Panel > Network > Network connection**.
2. Click **Network bridging**, then **Virtual Bridging**.
3. Tick the box, select the port your cable is plugged into (**LAN1** for me), and click **Apply**. Confirm the pop-up.



// Virtual Network Bridging on LAN1, and the confirmation pop-up

The NAS keeps its IP address. It just moves onto a new connection called **VBR-LAN1**.

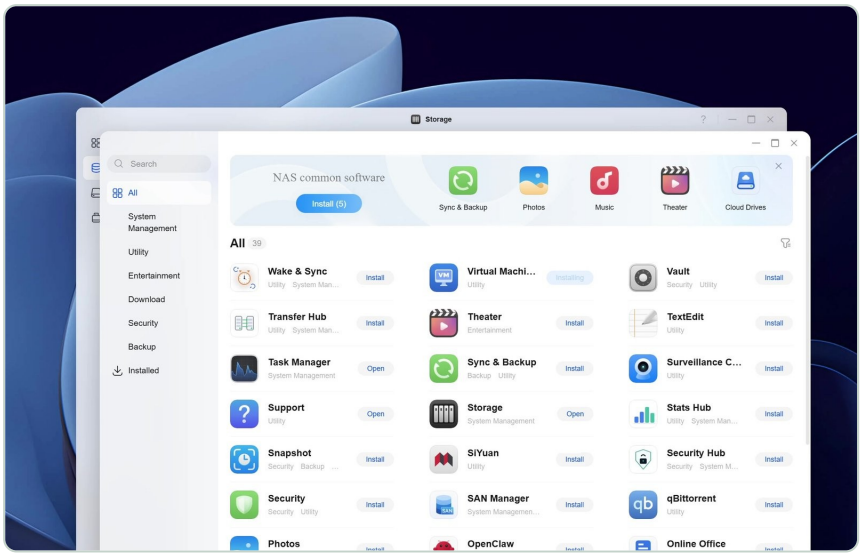


// VBR-LAN1 (Connected), still on the NAS's original address

PART 03

Install the Virtual Machine app

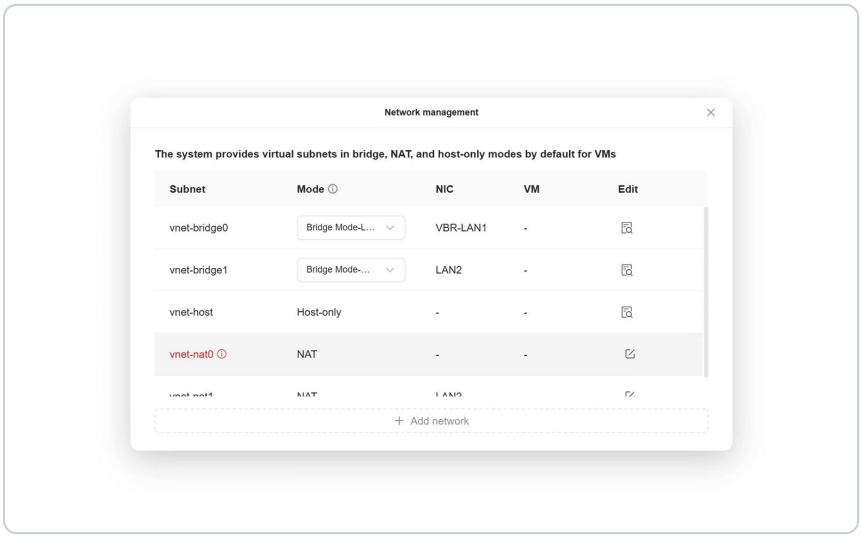
1. Open **App Center**, find **Virtual Machine** and click **Install**. Choose your volume when it asks.
2. Open the Virtual Machine app. The first time, it asks where to keep VM files: pick your volume (the button is at the right-hand end of the row).



// App Center: Virtual Machine is in the list of apps

Put the VM network on the bridge

3. In the Virtual Machine app, click **Manage > Network**.
4. Edit **vnet-bridge0** and change its mode to **Bridge Mode-LinuxBridge**. Click **Done** on the pop-up.
5. Check that vnet-bridge0 now shows **VBR-LAN1** in the NIC column.



// Manage > Network: vnet-bridge0 in Bridge Mode on VBR-LAN1

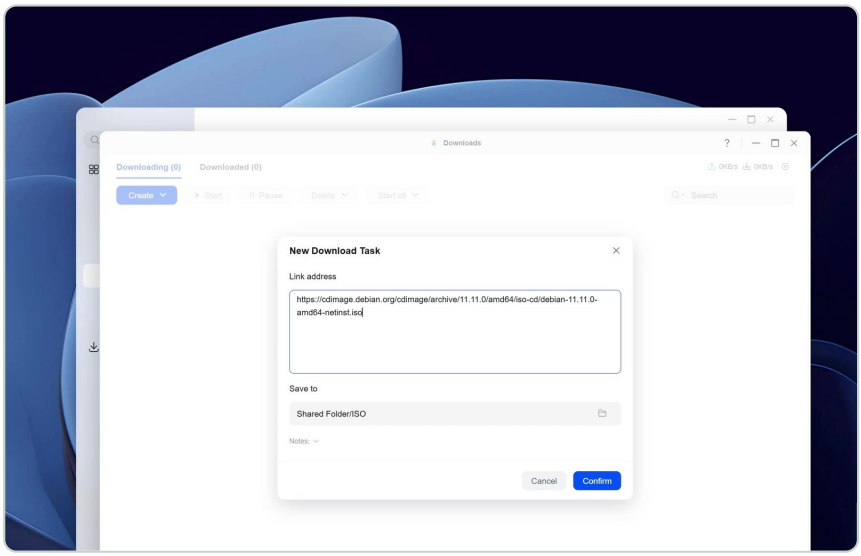
PART 04

Get Debian 11 onto the NAS

RetroNAS runs on Debian Linux, and the RetroNAS project supports Debian 11 specifically. You don't need to download it on your PC: the NAS can fetch it itself.

1. Open **Files**, click **+** and choose **Create shared folder**. Call it `ISO`.
2. In **App Center**, install the **Downloads** app and open it. Set its save location to **Shared Folder/ISO**.
3. Click **Create > From download link** and paste this link, then click **Confirm**:

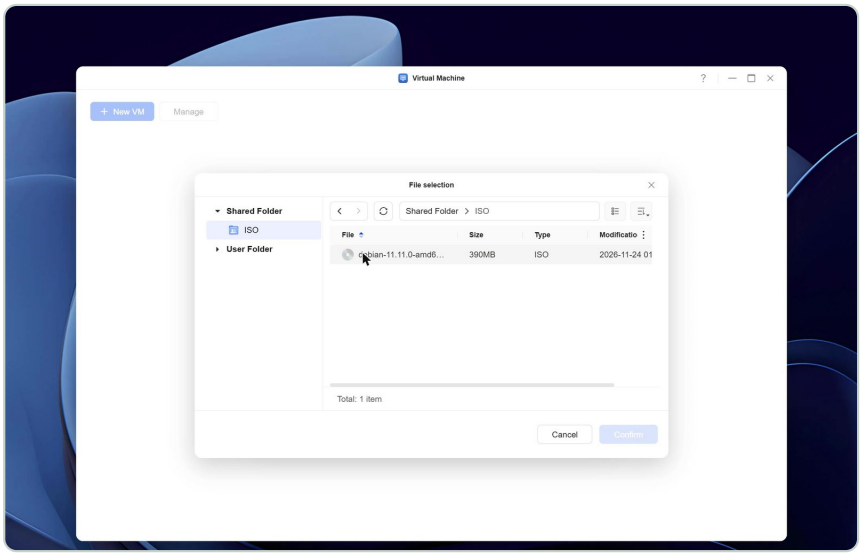
```
https://cdimage.debian.org/cdimage/archive/11.11.0/amd64/iso-cd/debian-11.11.0-amd64-netinst.iso
```



// Downloads > New Download Task: the Debian 11.11 link, saving to Shared Folder/ISO

Add it to the VM image library

4. In the Virtual Machine app, click **Manage > Image > Upload image**.
5. Choose **From NAS**, open **Shared Folder > ISO**, select the Debian file and click **Confirm**.
6. Give the image a name (I used `Debian11netinst`) and click **Confirm**. It takes a few seconds to import.



// Picking the ISO from Shared Folder/ISO

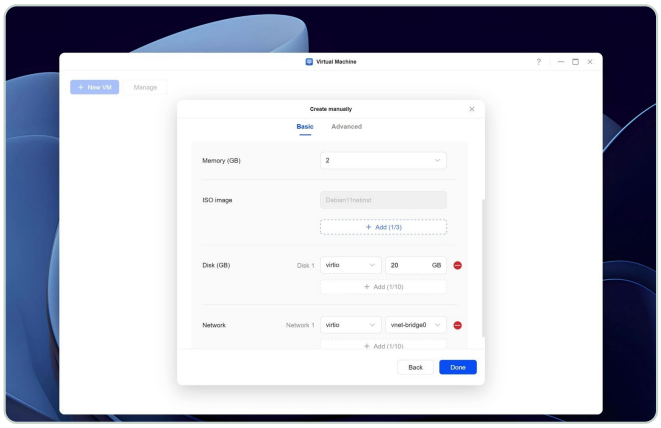
PART 05

Create the RetroNAS VM

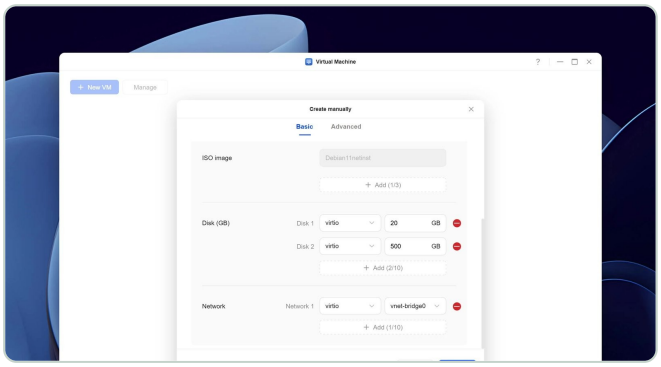
1. Click **New VM > Create Manually**, choose your Debian image and click **Next**.
2. Select your volume (the radio button is at the right of the row) and click **Next**.

3. Fill in the form with these settings:

SETTING	VALUE
VM name	`RetroNAS`
System type	Linux
CPU (Core)	2
Memory (GB)	2
Disk 1	virtio, **20 GB** (for Debian)
Disk 2	click **Add**, virtio, **500 GB** or more (for games)
Network 1	virtio, **vnet-bridge0**



// CPU, memory and the ISO image



// Two disks (20 and 500 GB) and vnet-bridge0

4. Click **Done** and wait for the VM to finish "Creating".
5. Click the power icon, then **Start**. When it says Running, click **Connect**. The VM's screen opens in a new browser tab.

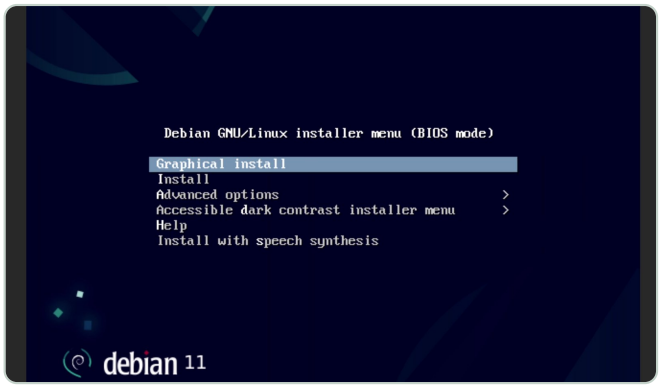
REMEMBER THE SIZES

The small disk is for Debian and the big one is for games. Inside the VM they're called `vda` (20 GB) and `vdb` (500 GB).

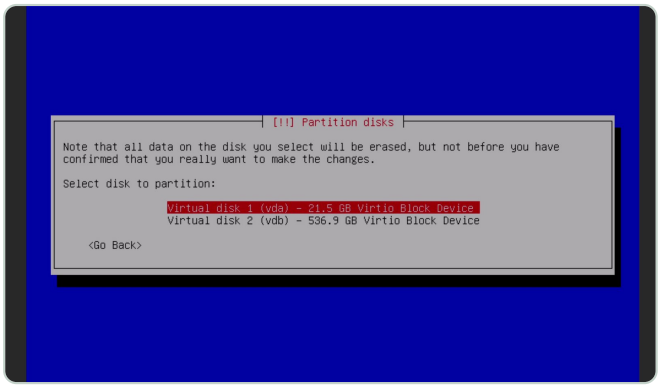
PART 06

Install Debian

Use the arrow keys to move, **Space** to tick a box, **Tab** to jump to the buttons and **Enter** to choose.



// Choose Install, not Graphical install



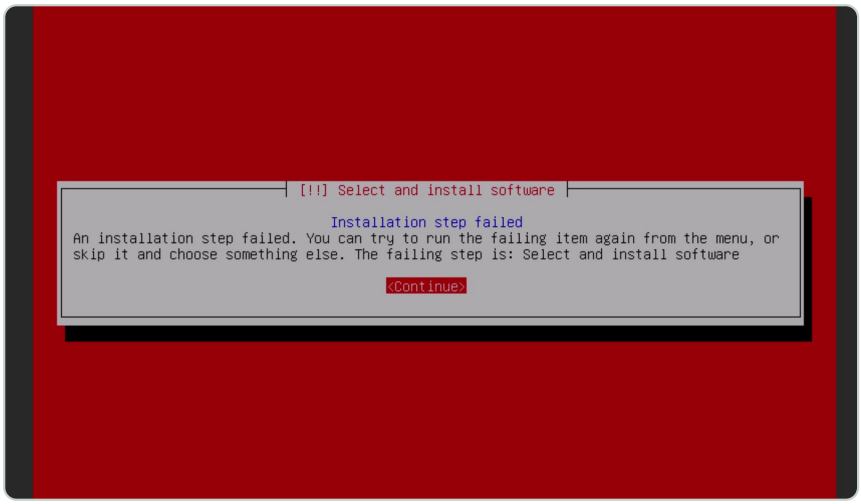
// Pick vda (20 GB), not the 500 GB vdb

INSTALLER SCREEN	WHAT TO CHOOSE
Boot menu	**Install**
Language / location / keyboard	English / United Kingdom / British English (or your own)
Hostname	`retronas`
Domain name	leave blank
Root password	make one up, type it twice, **write it down**
Full name / username	`retronas` / `retronas`
User password	make one up, type it twice, **write it down**
Partitioning method	Guided - use entire disk
Select disk to partition	**Virtual disk 1 (vda), the 20 GB one**
Partitioning scheme	All files in one partition
Finish partitioning	Finish partitioning and write changes, then **Yes**
Scan extra installation media	No
Mirror country / mirror	United Kingdom / deb.debian.org
HTTP proxy	leave blank

PART 06 CONTINUED

The one that caught me out

Debian 11 has reached the end of its support. When I installed it (November 2026), its security update server returned "404 Not Found" errors, so the installer stopped at **Select and install software** with a red screen.



// "Installation step failed" at Select and install software

FIX: IF YOU GET THE RED SCREEN

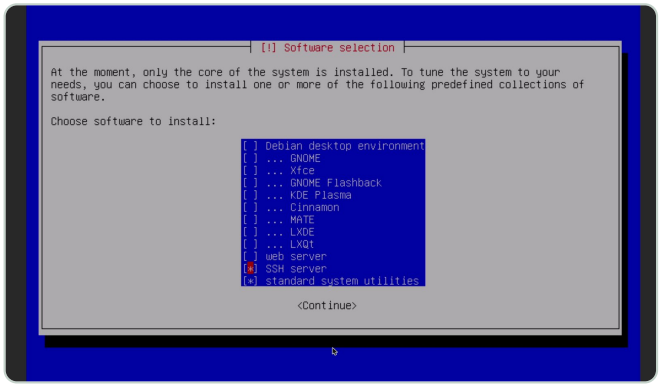
1. Press Enter on **Continue**. You're taken to the installer's main menu.
2. Scroll down to **Execute a shell**, press Enter, then Enter again on **Continue**.
3. Type this to remove the broken update source (and the CD-ROM one) from your new system:

```
sed -i '/security/d;/cdrom/d' /target/etc/apt/sources.list
```

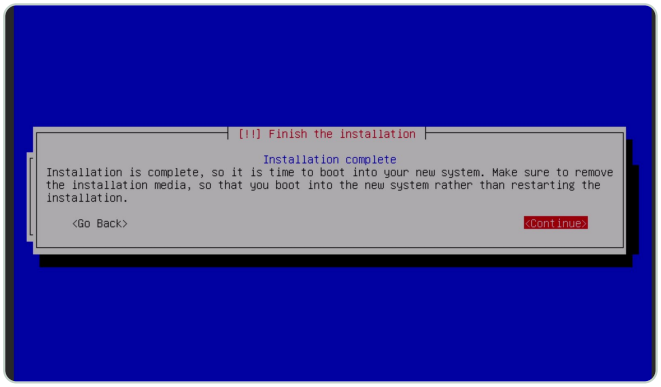
4. Type `exit` and press Enter to go back to the menu.
5. Choose **Select and install software** again. This time it carries on.

If you don't get the red screen, the installer just carries straight on.

INSTALLER SCREEN	WHAT TO CHOOSE
Updates management	No automatic updates
Popularity contest	No
Software selection	untick everything except **SSH server** and **standard system utilities**
Install the GRUB boot loader	Yes, on **/dev/vda**
Installation complete	Continue



// No desktop: just SSH server and standard utilities



// Installation complete

After the restart mine booted straight into Debian. If yours starts the installer again, stop the VM, remove the ISO in its settings and start it again.

PART 07

Log in and find the IP address

At the `retronas login:` prompt in the VM console, type `retronas`, press Enter, then type your user password. Then find the VM's IP address:

```
ip -4 addr
```

Look for the line starting `inet 192.168.` (ignore `127.0.0.1`). The numbers before the `/` are your RetroNAS IP address, for example `192.168.1.165`. **Write it down.**

FIX THE ADDRESS

That address comes from your router and can change after a restart, which would break the PS2's settings. Log in to your router and reserve the address for the VM (look for DHCP or address reservation). I reserved `192.168.1.69`, so that's the address in my PS2 photos.

CAPITAL LETTERS IN THE CONSOLE

The VM console runs in a browser tab, and for me it didn't pass the Shift key through properly, so capitals and symbols came out wrong. It's fine for the installer, but for the commands from here on, connecting from your PC (below) is much easier.

Optional: connect from your PC instead

Copying and pasting commands is easier from your PC. Click Start, type `PowerShell` and open it, then type this with your RetroNAS IP:

```
ssh retronas@192.168.1.69
```

Swap in your own RetroNAS IP.

The first time, type `yes` to trust the connection, then your user password. You're in when the line reads `retronas@retronas:~$`. Type `exit` to leave.

PART 08

Install RetroNAS

Step A: give your user admin rights (one-off)

Type this, then enter the **root** password:

```
su -
```

The line now ends in `#`. Type these two, one at a time:

```
apt install -y sudo curl
```

```
usermod -aG sudo retronas
```

Type `exit` twice to log out completely, then log back in as `retronas`. The admin rights only start after you log in again.

Step B: update Debian and run the RetroNAS installer

Commands starting with `sudo` ask for your **user** password the first time.

```
sudo apt update
```

```
sudo apt full-upgrade -y
```

```
curl -O https://raw.githubusercontent.com/retronas/retronas/main/install_retronas.sh
```

```
chmod a+x ./install_retronas.sh
```

```
sudo ./install_retronas.sh
```

The last one takes a few minutes. It's done when it says `All done. You can now run the RetroNAS config tool`.

PART 09

Set up the games disk

Check the disk names first:

```
lsblk
```

The **20G** disk with partitions under it (`vda1`, `vda5`) is Debian: **don't touch it**. The big disk with nothing under it is your games disk. On the UGREEN NAS it's `vdb`.

Format it. **This erases the disk you name**, so double-check it says `vdb`:

```
sudo mkfs.ext4 -L games /dev/vdb
```

Make it appear at `/data`, now and after every restart. One at a time:

```
sudo mkdir -p /data
```

```
echo 'LABEL=games /data ext4 defaults 0 2' | sudo tee -a /etc/fstab
```

```
sudo systemctl daemon-reload
```

```
sudo mount -a
```

```
df -h /data
```

You should see a line ending in `/data` showing roughly your games disk size. Now make the RetroNAS folder on it:

```
sudo mkdir -p /data/retronas
```

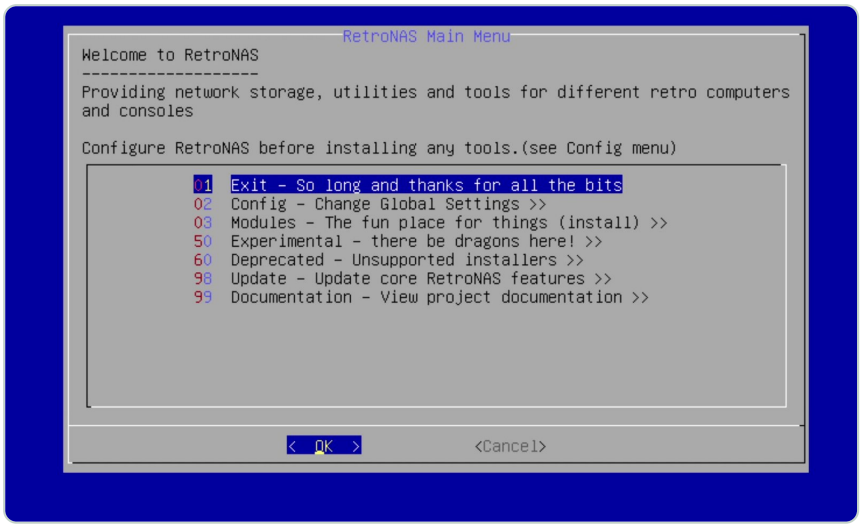
```
sudo chown retronas:retronas /data/retronas
```

PART 10

Set up RetroNAS for the PS2

```
retronas
```

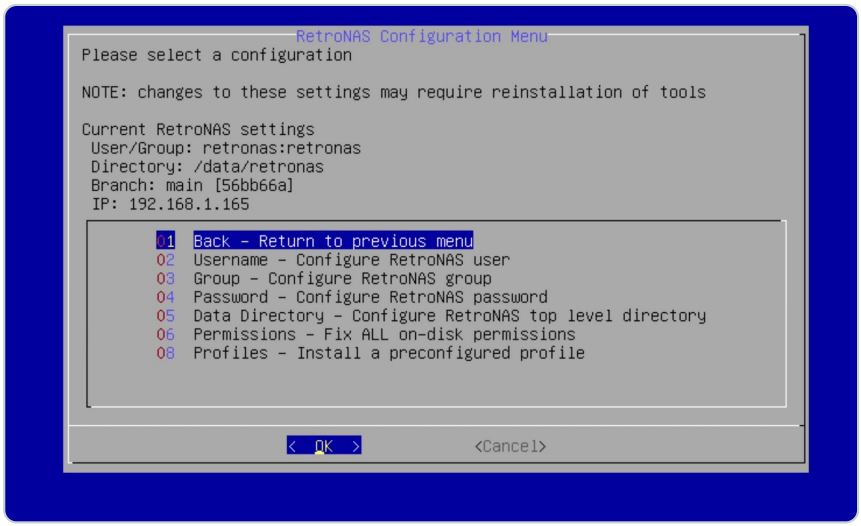
A warning and licence appear. Read them, then type `AGREE` in capitals and press Enter. You'll see the blue RetroNAS main menu: arrow keys move, Enter selects, and Escape goes back.



// The RetroNAS main menu

Step A: check the settings

Open **02 Config**. Check that User/Group says `retronas:retronas` and Directory says `/data/retronas`. If the directory is different, use **05 Data Directory** to set it to `/data/retronas`. Then go back.

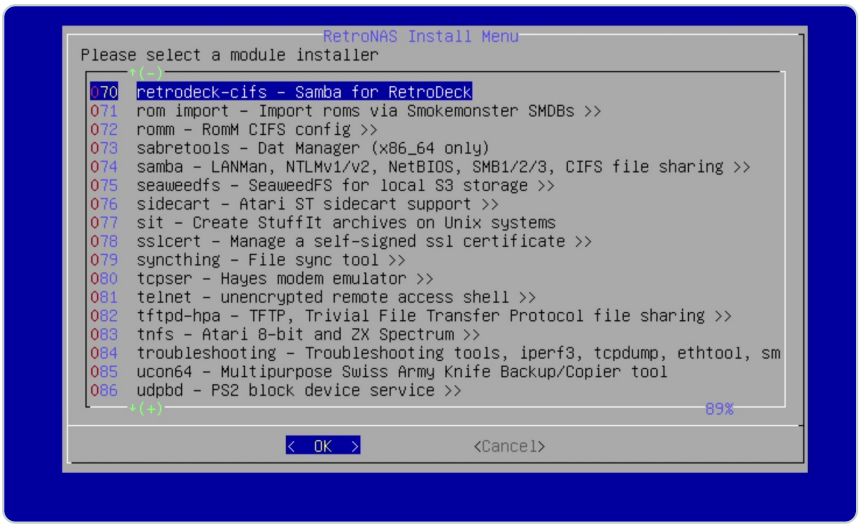


// 02 Config: the user, games directory and the VM's IP address

Step B: install Samba first

The PS2 connects using Samba, the Windows-style file sharing. In this version of RetroNAS the PS2 module expects Samba to be there already, and it failed when I ran it first.

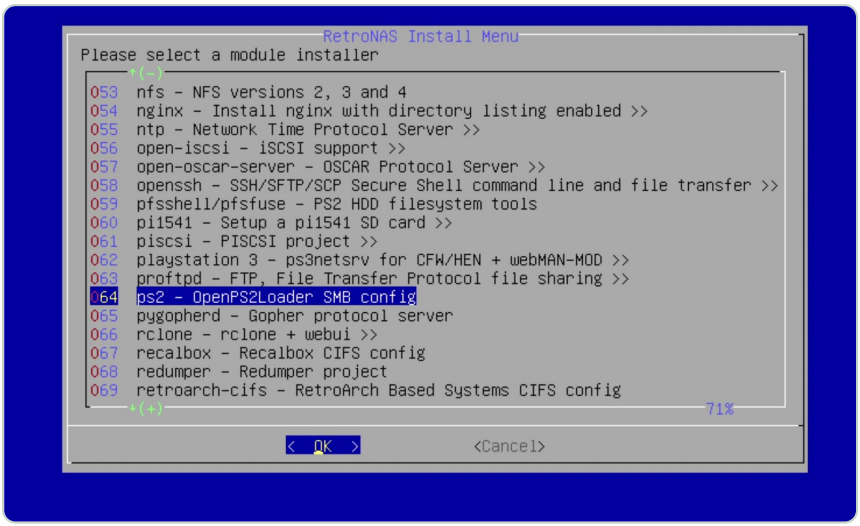
1. Open **03 Modules** and scroll down to **samba - LANMan, NTLMv1/v2, NetBIOS, SMB1/2/3, CIFS file sharing** (number 074 for me; yours may differ).
2. Choose **02 Install** and wait for it to finish. Press Enter, then go back to the module list.



// 03 Modules: samba is number 074 in this version

Step C: install the PS2 module

1. In **03 Modules**, scroll to **ps2 - OpenPS2Loader SMB config** (064 for me) and press Enter.
2. Wait for it to finish. The summary at the end should say `failed=0`.



// The PS2 module: "ps2 - OpenPS2Loader SMB config"

```
TASK [retronas.role.system-config : retronas user config setup - Log Package Entry] ********************
changed: [localhost]

TASK [retronas.role.system-config : retronas user config setup - fix config perms] ********************
ok: [localhost]

PLAY RECAP *********************************************************************************************
localhost                  : ok=35   changed=7    unreachable=0    failed=0    skipped=11   rescued=0
```

// The end of the install: failed=0 means it worked

Step D: set the Samba password

Exit the menu (Escape until you reach the main menu, then **01 Exit**). Give the retronas user a Samba password. Use the **same** password as your retronas user, typed twice:

```
sudo smbpasswd -a retronas
```

PART 11

Copy your games

1. On your PC, open File Explorer, click in the address bar, type this with your RetroNAS IP and press Enter:

```
\\192.168.1.69\ps2
```

Two backslashes at the start, and your own RetroNAS IP.

2. Log in as `retronas` with your Samba password.
3. Copy your PS2 `.iso` files into the **DVD** folder. Games that came on a blue-bottomed CD (under about 700 MB) go in the **CD** folder instead.

```
/data/retronas/roms/sony/playstation2/dvd:
total 19784312
-rwxr-xr-x 1 retronas retronas 3979935744 Nov 24 14:32 'Burnout Revenge (Europe, Australia) (En,Fr,De).iso'
-rwxr-xr-x 1 retronas retronas 3085533184 Nov 24 14:32 'Castlevania (Europe) (En,Fr,De,Es,It).iso'
-rwxr-xr-x 1 retronas retronas 4698767360 Nov 24 14:33 'Grand Theft Auto III (Europe) (En,Fr,De,Es,It) (v1.60).iso'
-rwxr-xr-x 1 retronas retronas 1376092160 Nov 24 14:33 'Metal Slug Anthology (Europe).iso'
-rwxr-xr-x 1 retronas retronas 2724331520 Nov 24 14:34 'Rule of Rose (Europe) (En,Fr,De,Es,It).iso'
-rwxr-xr-x 1 retronas retronas 4394450944 Nov 24 14:34 'Soulcalibur III - Arcade Edition [v1.20].iso'
Filesystem      Size  Used Avail Use% Mounted on
/dev/vdb        492G   20G  447G   5% /data
root@retronas:~# _
```

// My games in place on RetroNAS: six DVD games, with Disgaea in the CD folder

PART 12

PS2: set up Open PS2 Loader

Plug the PS2 into your router or switch with an Ethernet cable. These steps are for **OPL v1.2.0**. My FreeMcBoot card also had an old "OPL 10th" build on it: use the newest version you have.

1. Put the boot card in memory card slot 1, power on, and choose **OPL v1.2.0** from the FreeMcBoot menu.
2. Press **Start** for the OPL menu and open **Network Settings**.
3. Leave the PS2 section on **DHCP**. The 192.168.0.x numbers you may see there are just defaults and aren't used.
4. In the SMB Server section, change **Address Type** from **NetBIOS** to **IP**, then fill in the rest:

OPL SETTING	VALUE
Address Type	**IP** (not NetBIOS)
Address	your RetroNAS IP, e.g. `192.168.1.69`
Port	`445`
Share	`ps2` (lowercase)
User / Password	`retronas` / your Samba password



// FreeMcBoot 1.966: choose OPL v1.2.0



// Network Settings: Address Type IP, then the RetroNAS address

5. Select **OK**. Then open **Settings** and set **ETH Device Start Mode** to **Auto**, so OPL connects every time it starts. Set **Default Menu** to **ETH Games** so your network games show first.
6. Choose **Save Changes**. It writes your settings to the memory card.
7. This version has no reconnect button, so choose **Exit** and start OPL again (I power-cycled the whole console to prove the settings stick).
8. OPL opens on the ETH Games list. Use **L1** and **R1** to switch lists if you need to.



// All seven games, streaming from RetroNAS

PART 13

Play, and fix problem games

Highlight a game and press **X**. The colourful screens while it loads are OPL's debug information, and they're normal. Burnout Revenge loaded first time and played just like it does from a disc.



// Burnout Revenge, loaded over the network from the UGREEN NAS

A game won't boot? Try Mode 1

GTA III wouldn't boot and Castlevania hung on its splash screens. Turning on **Mode 1** (Accurate Reads) fixed both.

1. Highlight the game and press **Triangle** for its Game Settings.
2. Tick **Mode 1**, select **OK**, then save and launch the game again.



// Game Settings: Mode 1 (Accurate Reads) ticked

Getting back to OPL

Hold **L1 + L2 + R1 + R2** and press **Select + Start** together for an in-game reset. Not every game respects it; if one ignores it, power-cycle the console.

MY RESULTS

All seven games streamed: Burnout Revenge, Castlevania (with Mode 1), Disgaea, GTA III (with Mode 1), Metal Slug Anthology, Rule of Rose and Soulcalibur III. I saw a couple of dropouts in streamed video, which I put down to my very long, cheap network cable.

PART 14

If something goes wrong

WHAT YOU SEE	WHAT TO DO
Red "Installation step failed" at Select and install software	See the fix in Part 6: remove the security line from `/target/etc/apt/sources.list`, then retry.
The installer never asks for a hostname, or `ip -4 addr` shows no 192.168 address	The VM isn't on the bridge. Check Part 2 and Part 3 (vnet-bridge0 in Bridge Mode on VBR-LAN1).
`retronas is not in the sudoers file`	Log out completely and back in after Part 8, Step A.
The PS2 module fails with `/etc/samba does not exist`	Install the samba module first (Part 10, Step B), then run the PS2 module again.
`df -h /data` **doesn't show /data**	Run `lsblk` and check you formatted the right disk in Part 9.
Windows or OPL won't log in to the share	Run `sudo smbpasswd -a retronas` again and check the share name is `ps2`.
OPL says it can't connect, or the ETH list is empty	Check Address Type is **IP**, not NetBIOS, and that the address is the RetroNAS VM's IP, not the NAS's own. Save Changes and restart OPL. Still nothing? Set the PS2 to a static address on your network (e.g. 192.168.1.200, gateway = your router).
It worked yesterday and doesn't today	Check the VM is started in the Virtual Machine app (after a NAS restart it may not start by itself), and that its IP hasn't changed. Reserve the IP on your router (Part 7).
The VM has no network after moving the NAS	The bridge is tied to one port. Plug the cable back into the port you bridged in Part 2 (LAN 1 for me).
A game hangs or won't boot	Turn on Mode 1 in its Game Settings (Part 13).
Video stutters or drops out in game	Check the network cable first: use a shorter, better one, or a switch near the PS2.

Sources

- RetroNAS wiki: Installing RetroNAS (github.com/retronas/retronas/wiki/Installing-RetroNAS)
- RetroNAS wiki: OpenPS2Loader (github.com/retronas/retronas/wiki/OpenPS2Loader)
- UGREEN NAS virtualisation guide (ugreen.com)
- Debian 11 archive images (cdimage.debian.org/cdimage/archive)

Screenshots are from the install filmed for the Mark Fixes Stuff video. Menu numbers and wording can change as RetroNAS, OPL and UGOS are updated. UGREEN sponsored the video and supplied the NAS and drives.