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Building a FreeNAS replication target on an Odroid HC2

The [Odroid HC2](#) is a single-board computer that comes equipped with a SATA interface and a heatsink designed to mount a hard drive. It's designed to serve as a simple home NAS, and a version of OpenMediaVault is available specifically for the HC2. However, the board runs Linux, and there's also an OS image of Ubuntu 18.04 available. Since Ubuntu supports ZFS pretty well, it should be trivial to set up one of these to serve as a replication target for a FreeNAS system. Or so I thought.

Unfortunately, the Ubuntu 18.04 image uses a 32-bit kernel, and the available ZFS packages aren't compatible with a 32-bit kernel. This means I'll need to compile the ZFS pieces myself, and they're not known to be stable with a 32-bit kernel in any event. Updates to come.

Rebuild the kernel

To ensure you have the headers for the running kernel installed, run the following commands (taken from the [Hardkernel wiki](#)):

```
sudo apt update && sudo apt upgrade
sudo apt install git gcc g++ build-essential
git clone --depth 1 https://github.com/hardkernel/linux -b odroidxu4-4.14.y
cd linux
make odroidxu4_defconfig
make -j8
sudo make modules_install
sudo cp -f arch/arm/boot/zImage /media/boot
sudo cp -f arch/arm/boot/dts/exynos5422-odroidxu3.dtb /media/boot
sudo cp -f arch/arm/boot/dts/exynos5422-odroidxu4.dtb /media/boot
sudo cp -f arch/arm/boot/dts/exynos5422-odroidxu3-lite.dtb /media/boot
sudo cp .config /boot/config-`make kernelrelease`
sudo update-initramfs -c -k `make kernelrelease`
sudo mkimage -A arm -O linux -T ramdisk -C none -a 0 -e 0 -n uInitrd -d
/boot/initrd.img-`make kernelrelease` /boot/uInitrd-`make kernelrelease`
sudo cp /boot/uInitrd-`make kernelrelease` /media/boot/uInitrd
sync
```

Then reboot your system to start using the new kernel.

Build ZFS on Linux

These instructions are taken from the [ZFSonLinux Wiki](#). First, install the necessary dependencies:

```
sudo apt install build-essential autoconf libtool gawk alien fakeroot zlib1g-  
dev uuid-dev libattr1-dev libblkid-dev libselinux-dev libudev-dev parted  
lsscsi ksh libssl-dev libelf-dev
```

Then download, build, and install the ZFS code:

```
git clone https://github.com/zfsonlinux/zfs  
cd zfs  
git checkout master  
sh autogen.sh  
./configure  
make -s -j$(nproc)  
sudo make install
```

Then load the ZFS modules:

```
sudo modprobe zfs
```

Create the pool

Create your pool. Make sure to set `ashift=12`.

```
zpool create -o ashift=12 dozer /dev/disk/by-id/ata-  
WDC_WD80EMAZ-00M9AA0_VAGA2PLD
```

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