

# Build an Ubuntu NAS



- **Basic Linux, network knowledge** is required.
- Remember that we are just providing a basic guide for building a NAS, so we can't answer about the advanced usage of each NAS services.
- This guide is for **XU4/HC1/HC2**. You can apply it to C1/C1+/C2 but they haven't USB 3.0 port for the HDDs.
- Operation confirmed with testing in our **Ubuntu Minimal 16.04.3 LTS** on updated **4.9.58-71** kernel.
  - Works well on updated **4.14.12-98** kernel and you can download integrated image: **Ubuntu Minimal 16.04.3 LTS with 4.14 Kernel**
  - As always, installing latest kernel is highly recommended.



- If there is no special reason to use FTP (Especially domain), we recommend to use **SFTP (FTP protocol provided by SSH service)** for security matters. For this reason, we don't deal with enabling FTP service.
- References (ODROID Forum)
  - <https://forum.odroid.com/viewtopic.php?f=52&t=23925>
  - <https://forum.odroid.com/viewtopic.php?f=52&t=25424>



- If you want a high performance NAS and don't need a big storage, try it with a SSD and make it a root partition.
  - Refer to [this document](#)

This guide will show you how to build a NAS with a clean **Ubuntu Minimal image**.

If you don't want to install Open Media Vault, this guide would help you. If you build a NAS on Ubuntu, you can install **latest packages** including PHP, Nginx from apt package manager so that you can easily get the benefits of the latest version. But it requires you to know the **basic knowledge** of Linux and network.

This guide includes the chapters below:

- [Basic Settings](#)
- [Mount HDDs](#)
- [NGINX, PHP, MariaDB](#)
- [NAS Services](#)
  - Samba
  - Plex Media Server
  - Serviio
  - Transmission
  - Seafile
  - Sabre/DAV
  - Wordpress

- [NextCloud](#)
- [OpenVPN](#)
- [Port-forward](#)
- Apply DDNS / SSL
  - [DuckDNS](#)
  - [Let's Encrypt](#)
- Options
  - [Webmin](#)
  - [Optimize performance](#) (Click to visit)
    - Emulating HMP
      - Fastest transfers over sshfs/scp/sftp
    - Disk longevity
    - Flash disk (**Recommended**)
    - Governor
    - Network - MTU (**Recommended**)
    - Network - interrupts (No more needed. Applied by default)
    - Tune systemd timeouts

Web server components (LEMP stack in our guide) is required to provide PHP or database related services.

Before proceed, make sure that you've burned **our** latest Ubuntu Minimal image on a [MicroSD](#) card or eMMC and inserted properly, and you've connected proper power, network cable, and a HDD in advance.

Then, let's get started.

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