# Massive automated installation of complete Linux images - MAuI

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## Concept

The basic idea is to provide a system, that allows an easy installation of preconfigured Linux images on multiple target computers.

The system consists of a modified Arch Linux live medium, that will run as a standalone server. The target computers shall be connected to this server via Ethernet. These target machines are then booted over this LAN connection[1]. And their new system is installed, based on the preconfigured image.

At this point the image, that shall be installed, has to be ready. Though, some requirements for the images will probably have to be met, the process of creating and maintaining preconfigured images is kept separately. Instructions and maybe tools for this might be provided as well.

Additionally to the live medium a storage medium for the images is required, e.g. an external hard disk drive.

Using an external storage has several advantages. It facilitates the process of creating an image from an existing installation. And it's flexible in terms of size and mobility.

A live medium was chosen because it's by far the simplest way to turn an ordinary computer into an installation server and again, this provides a maximum of flexibility in terms of mobility. If necessary, the live medium can be adapted and recreated. By basing it on Arch Linux, we rely on a proven and expandable method to create a custom live medium[2].

And finally, images were chosen because they make it possible to simply make the wished configuration and system adaptions on a running system[3]. This

[1] For most computers a setting is configurable in the BIOS. Look for: "Boot via Ethernet" or "PXE".

[2] From the Archiso wiki article: "Simply put, if it involves Arch on a shiny coaster, it can do it." - https://wiki.archlinux.org/index.php/Archiso

[3] Though, this system might actually be on a virtual machine.

saves you off the PITA of scripting these changes for an automated installation. The drawback is that driver recognition cannot be done for the target machines during installation and the images have to be kept up to date.

## Implementation

### Adaptions to the Arch Linux live medium

The adaptions to the Arch Linux live medium are preferably done using an installed Arch Linux system. Doing so, the Archiso tools, designed for this, can easily be used.

Reference: https://wiki.archlinux.org/index.php/Archiso

The following steps are done in a working Arch Linux system.

- Installed archiso.
- Created test directory: ./archlive-test
- Copy releng "profile" from host to archlive-test (as root, in ./archlive-test):

```
# cp -r /usr/share/archiso/configs/releng/ .
```

### Adaptions to releng/airootfs:

- Adapt hostname (in etc/hostname: live-install-server )
- Set the keymap (convenience). (create etc/vconsole.conf: KEYMAP="de_CH-latin1" )
- Set the timezone and clock. (customize_airootfs.sh: adapt timezone )

Set up the network w/ a static IP:

- added etc/hosts
- don't start dhcpcd (add suffix _ORIGINAL-airootfs to etc/udev/rules.d/81-dhcpcd.rules/81-dhcpcd.rules )
- prevent udev of giving network devices a terribly stupid name (add etc/udev/rules.d/80-net-setup-link.rules)
  (See: http://www.freedesktop.org/wiki/Software/systemd/PredictableNetworkInterfaceNames/)
- set static ip (create etc/udev/rules.d/81-eth0-static-ip.rules, and script under root/local/eth0-static-ip )

**Configure as PXE server** Reference: https://wiki.archlinux.org/index.php/Archiso_as_pxe_server