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# **os2borgerpc-kiosk-image**

## **Documentation**

***Release 1.0.0***

**Magenta ApS**

**Mar 17, 2023**



# CONTENTS

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Technical Documentation . . . . .	1
1.2	README . . . . .	7
1.3	Release History . . . . .	7
<b>2</b>	<b>Indices and tables</b>	<b>9</b>



## INTRODUCTION

OS2BorgerPC - Kiosk Image is the specialized Ubuntu distribution server image for audience PCs in public libraries in Denmark (Part of the [OS2BorgerPC system](#)).

### 1.1 Technical Documentation

#### 1.1.1 How to install and run OS2borgerPC Kiosk

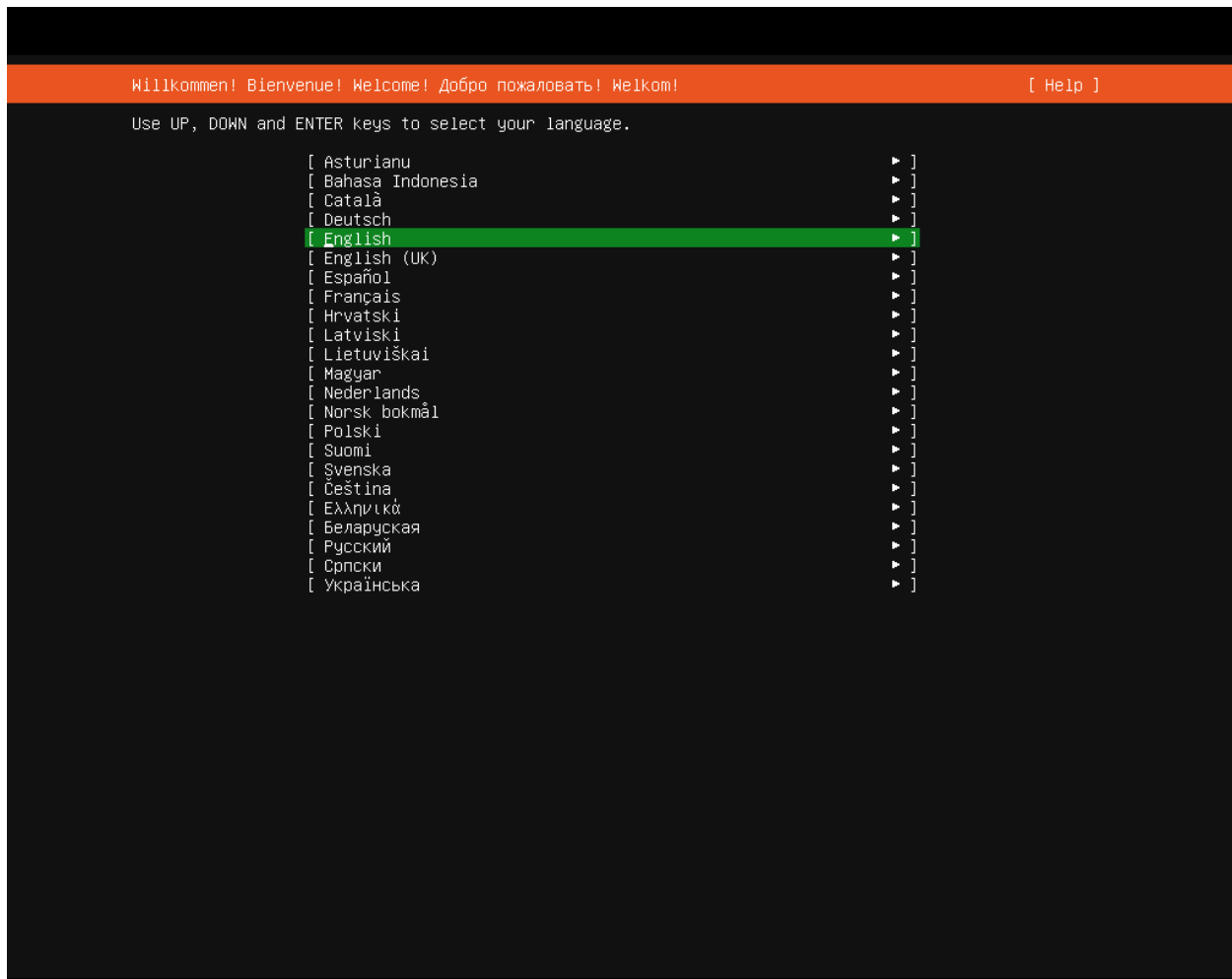
##### Install OS2borgerPC Kiosk image

Get the most recent OS2borgerPC Kiosk image as provided by Magenta, or build one yourself according to the instructions in the `image` directory.

Copy the image to a USB or DVD and boot the target computer with it.

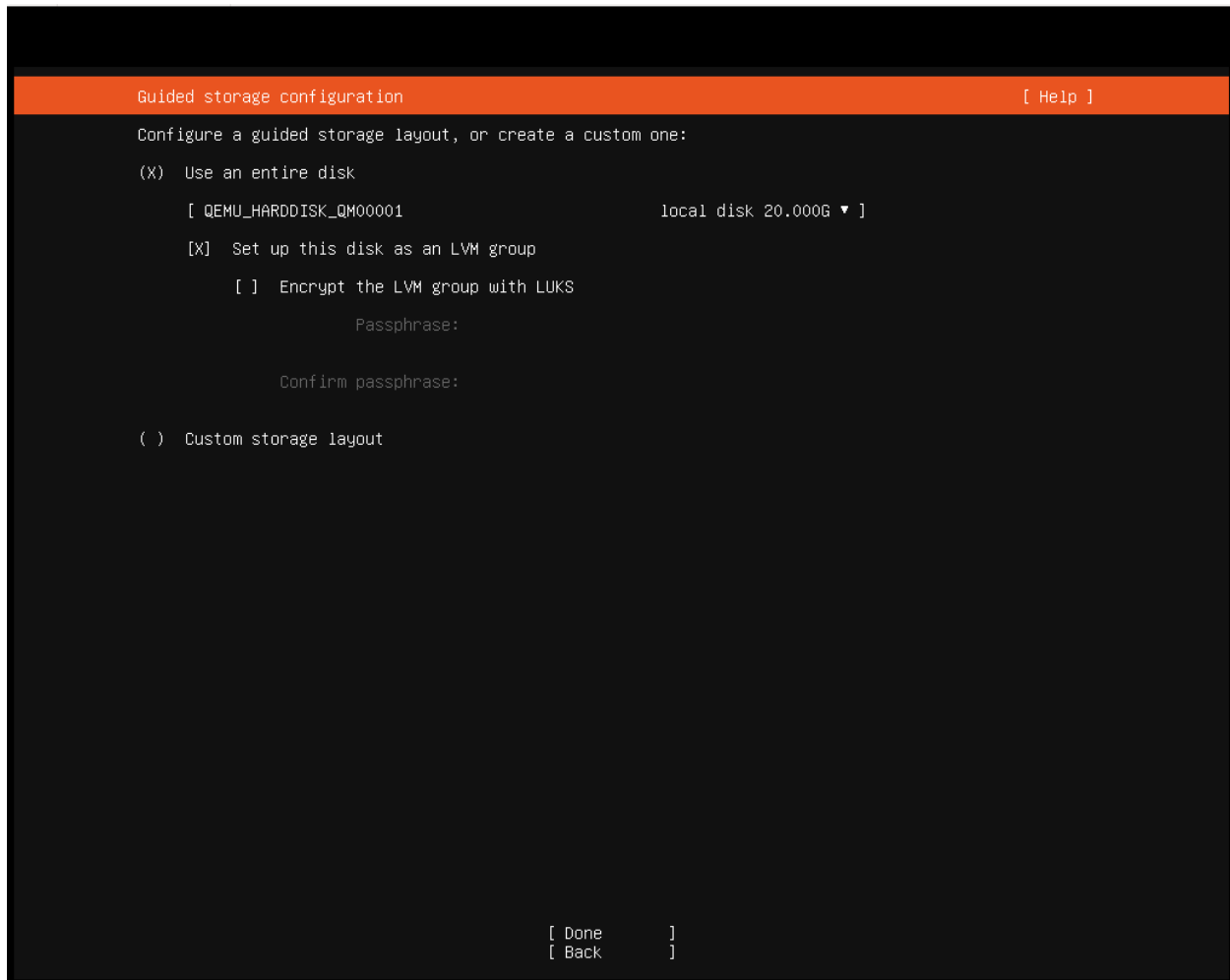
The image will work with UEFI boot, but legacy boot is also supported.

The installation procedure will not ask a lot of questions. First of all, it will ask you to choose a language for the installation, as shown below:



Unfortunately, Danish is currently not supported. Hit ENTER to keep “English”.

Next, specify the disk you will install on, as shown below:



If you're installing on a normal setup with only one hard disk attached, the defaults will be fine - in that case, hit TAB until you reach "Done" and hit ENTER. Otherwise, specify disk and partitions according to your needs.

As this will destroy all data in the disk in question, you will now be asked to "Confirm destructive action". To proceed, select "Continue".

**Warning:** This step *will* destroy all data on the disk you install on.

The system will now install - this will take some time.

Remove the install media and reboot.

The login screen may contain output related to the upstart process:

```
[ OK ] Finished Apply the settings specified in cloud-config.
Starting Execute cloud user/final scripts...
ci-info: no authorized SSH keys fingerprints found for user superuser.
<14>Jun 13 08:44:21 cloud-init: #####
<14>Jun 13 08:44:21 cloud-init: -----BEGIN SSH HOST KEY FINGERPRINTS-----
<14>Jun 13 08:44:21 cloud-init: 1024 SHA256:jIrL+VW8GhCifr0eHAP/OcQw2qN13NSo1fMeuEVD+U root@os2borg
erpc (DSA)
<14>Jun 13 08:44:21 cloud-init: 256 SHA256:eQm3lbo5QtN8LGoWfH6D+OdCrYQlglU2YKg5hdCAhc4 root@os2borge
rpc (ECDSA)
<14>Jun 13 08:44:21 cloud-init: 256 SHA256:XeHiV6K/hQActfmTPPy1G4h3GhqKkoQWjEgWN2gedek root@os2borge
rpc (ED25519)
<14>Jun 13 08:44:21 cloud-init: 3072 SHA256:dTge0Ltd3HVkJA1EAuLY90DCJBY2B1ACJkN09MQhRTs root@os2borg
erpc (RSA)
<14>Jun 13 08:44:21 cloud-init: -----END SSH HOST KEY FINGERPRINTS-----
<14>Jun 13 08:44:21 cloud-init: #####
-----BEGIN SSH HOST KEY KEYS-----
ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBBDM2vpuLbhHxhTjI/9+si2yc1GA0
resQG2PqOPw4ri5h7XztZqjwA4WQ1N2iezhM5s2oUQI5Zc0Vrk0dmasfip8= root@os2borgerpc
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAILD30I1RS1TH2pxXhHCXi3oNUz0TWQ2K2MCUyfMaBmwS root@os2borgerpc
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGC47zB2etXF+LSpmJQu59vjTjaUqpFmEkcl303h4ho/tIKq1Yf01k00WPrzVL8L
Xa3L7pT2aFX1lwP/xvp0byfU9vKuDqd1QI/8Sp8rkyjwZ2TMTxb12jUV0uKH22MyY5/iGImyy6wb7arC718N6eQDxdT3C4eoV0j
7H4Xmt1jDF4p1ruTlWnpkuAKoic+oQzHKSSBAvYbyG2rcn3C/+HykVPdnzVK1pUTeP216qhCPSGghZ7btPwL1RhX01j2suFLPpGV
hu0c+fUdE4Jev0U9N7ewWjrbBGR/aqWhfV6/YNPtfrRu+6K3V0FEuS1ruBN/40RtHjs9NEKsaI8vqBjhy80PmJvztuREwte56Fc
qAnEXaSdcF2902X3qgDBrLtOUTgjY5bP+eUjJBU5gztDkcRV1l18iI5Da2emSGnj1AC0cK/7CvEx50mW0w3sJl1j/4RpuJSPASK
IT7+3HCiI5xMg72MxmNgjM211yx8ymU8Tk8ExiXp1F0mLiDamiU= root@os2borgerpc
-----END SSH HOST KEY KEYS-----
[ 21.732476] cloud-init[1546]: Cloud-init v. 21.2-3-g899bfaa9-0ubuntu2~20.04.1 running 'modules:fi
nal' at Mon, 13 Jun 2022 08:44:21 +0000. Up 21.57 seconds.
[ 21.734745] cloud-init[1546]: ci-info: no authorized SSH keys fingerprints found for user superus
er.
[ 21.739827] cloud-init[1546]: Cloud-init v. 21.2-3-g899bfaa9-0ubuntu2~20.04.1 finished at Mon, 13
Jun 2022 08:44:21 +0000. Datasource DataSourceNone. Up 21.72 seconds
[ 21.753044] cloud-init[1546]: 2022-06-13 08:44:21,428 - cc_final_message.py[WARNING]: Used fallback
datasource
[ OK ] Finished Execute cloud user/final scripts.
[ OK ] Reached target Cloud-init target.
```

This is not a problem and you'll be able to login as the user `superuser` with password `superuser`.

**Danger:** Please change this password *immediately* after deploying each server!! There's a script in OS2borgerPC Admin to do this.

## Getting internet access

If you installed with an Ethernet cable and a DHCP-enabled network, the computer is already online. If you need to set up wireless network or configure a static IP, you must first install basic wireless capabilities - these are not installed by default. You don't need a network connection, just enter the command:

```
sudo wifi_setup
```

**Note:** If you don't need to use a wireless connection or do any other special network setup like setting up a static IP address, there is no need to execute this command.

With this in place, enter the following command:

```
nmtui
```



To connect to a new network choose “Activate a connection” in the menu. If everything works as it should and the computer has a wireless card, you will see a list of wireless networks (if any exist, of course).

If you’re already connected, e.g. through Ethernet, choose “Edit a Connection”. You can now setup static IP, etc.

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**Note:** In some cases, the wireless cards will not work properly unless the computer is connected through Ethernet during installation. We recommend that you install with an Internet-enabled Ethernet connection, though in some cases it will also work without it - it depends on your specific wireless card.

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### Connect to OS2borgerPC-admin (our admin system)

Once you’re connected to the network, enter the command:

```
sudo os2borgerpc_kiosk_setup
```

This will install all dependencies for the OS2borgerPC client.

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**Note:** This may take some time.

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Finally you’ll be prompted for information to register the machine with our admin system:

- **gateway:** Just press “Enter” to skip.
- **name:** Give the computer any valid name you like.
- **site:** If hosted by us: Use the site name we should’ve e-mailed you. If self-hosting or developing: Create a site, and specify its name here.
- **server:** If hosted by us: Just press enter. If self-hosting specify the domain of your server. For development its likely some port on localhost.

### Setting up for Kiosk

Once the computer is connected to the admin system and activated, you may set it up to run as a kiosk machine.

There are two scripts needed to do this.

The first is called “OS2borgerPC Kiosk - Installer Chromium” and will install the browser and setup minimum GUI capabilities.

When this script has run successfully, you can configure Chromium to start automatically on boot and configure the start URL and time delay as needed. You do this by running the script called “OS2borgerPC Kiosk - Autostart Chromium”.

In this script, you must specify the following four parameters:

- **time** - a delay time before Chromium is started.
- **url** - the start URL for your kiosk, e.g. an OS2display site.
- **width** - the width (X) component of the desired screen resolution, e.g. “1980”.
- **height** - the height component of the desired screen resolution, e.g. “1080”.
- **orientation** - the orientation or rotation of the screen. Values must be one of **normal**, **right** or **left**. If this parameter is misspelled, the system will default to “normal”.

The width and height parameters must correspond to the preferred (maximum) screen resolution of your monitor.

## Additional remote access

If you want additional remote access to this system, besides being able to run scripts on it from the admin system, you can run the script called “OS2borgerPC Kiosk - Installer SSH og VNC”. After this, you’ll be able to SSH to the machine and to see its display by connecting with a VNC client.

**Danger:** You *must* change the standard password before or *immediately* after running this script.

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**Note:** You use `superuser`’s standard UNIX password to SSH. In order to connect with VNC, you need to supply a specific VNC password as a parameter for this script.

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## 1.1.2 How to build the OS2borgerPC Kiosk ISO image

In order to build the ISO image, use a Ubuntu 20.04 Server Edition installation CD and basically follow the instructions on this page:

<https://gist.github.com/s3rj1k/55b10cd20f31542046018fcee32f103e>

For more info about autoinstall, see this page:

<https://ubuntu.com/server/docs/install/autoinstall>

Basically, go to the directory where you wish to build the ISO, get the installation ISO and unpack it:

```
wget http://releases.ubuntu.com/focal/ubuntu-20.04.1-live-server-amd64.iso

# Extract ISO:
mkdir iso
7z x ubuntu-20.04.1-live-server-amd64.iso -oiso
rm -rf 'iso/[BOOT]/'
cp -r /path/to/image/ubuntu-image/* iso

md5sum iso/.disk/info > iso/md5sum.txt
sed -i 's|iso|.|g' iso/md5sum.txt
```

Now you can make any modifications you want, e.g. to the install process in `nocloud/user-data` or to the boot instructions in `isolinux` or `boot/grub`.

Special customizations are best handled through `late_commands` in `nocloud/user-data`.

If you need to include extra packages in the ISO, one way to do it is to include the packages (`.deb` files) in a bespoke directory in the ISO and install them directly with `dpkg -i`, either in a `late_command` or using a script.

The `wifi_setup` script currently expect such packages to exist in the directory `scripts/wifi` - as we need to be able to set up wifi without a network connection, while we should, at the same time, never enable wifi unless we know that it’s necessary.

Alternatively, you could make them officially part of the image by adding them in `pool/extras`. This, however, requires you to unsquash the embedded `squashfs` file system, update the package lists, re-squash it and sign it. You must also compile a new version of the `ubuntu-keyring` package to include your own GPG signing key.

If you need to do this, you can find instructions on doing so here:

<https://help.ubuntu.com/community/InstallCDCustomization>

If you *did* add deps to pool/extras, please note:

- To generate a new filesystem.squashfs, you must first unpack it with unsquashfs - the directory you get from that is where you put the updated keyrings.
- Delete the old filesystem.squashfs before rebuilding it with mksquashfs, otherwise your changes are written to new paths with “\_1” appended.
- Do not worry about dpkg-scanpackages, just follow the instructions for apt-ftparchive and you’re good.

Once you’re ready to create the ISO image for installation, run:

```
xorriso -as mkisofs -r -V os2borgerpc_kiosk -o os2borgerpc_kiosk-1.0.0rc1.iso -J -
↳l -b isolinux/isolinux.bin -c isolinux/boot.cat -no-emul-boot -boot-load-size 4 -
↳boot-info-table -eltorito-alt-boot -e boot/grub/efi.img -no-emul-boot -isohybrid-
↳gpt-basdat -isohybrid-apt-hfsplus -isohybrid-mbr /usr/lib/ISOLINUX/isohdpx.bin iso/
↳boot iso
```

where “os2borgerpc\_kiosk” and “os2borgerpc\_kiosk-1.0.0rc1.iso” should be replaced by what you wish the tag and filename of the ISO image to be.

You’ll need to install the necessary dependencies to create the ISO - on Ubuntu 20.04, it can be done with:

```
sudo apt-get install xorriso isolinux
```

## 1.2 README

This folder contains the source code for building a modified Ubuntu Server image (.iso file) for connection server installations to the OS2borgerPC admin system.

This work was commissioned by Aarhus Kommune for their OS2display solution. The image contains an install script for the OS2borgerPC client as well as some utilities to easily connect to the network in case no Internet is available during installation.

Read the documentation for this project in docs/ or at [Read The Docs](#).

The OS2borgerPC Server Image is free software, and you are welcome to use, study, modify and distribute it under the terms of version 3 of the GNU General Public License.

## 1.3 Release History

### 1.3.1 Version 2.0.0 March 9, 2023

Changes in this version:

- Upgraded to Ubuntu 22.04.2.
- Build in user creation and screen rotation program
- Make dpkg work more noninteractively by default

### **1.3.2 Version 1.1.0 Februar 2, 2022**

Changes in this version:

- Upgraded to Ubuntu 20.04.3, including package versions on image.
- Documentation updated, name changed to OS2borgerPC Kiosk.

### **1.3.3 Version 1.0.0 January 20, 2021**

Changes in this version:

- Installation upgraded to Ubuntu 20.04.
- Admin scripts updated to work on Ubuntu 20.04.
- Installer switched from d-i to subiquity.
- Use cloud configuration with the “nocloud” option (i.e., offline).

### **1.3.4 Version 0.1.1, March 19, 2020**

Changes in this version:

- Chromium setup script updated to receive monitor resolution as parameters.
- Chromium setup script now support rotating display - “orientation” parameter added.

### **1.3.5 Version 0.1.0, February 5, 2020**

Initial release.

## INDICES AND TABLES

- `genindex`
- `modindex`
- `search`