Slackware ARM project web site | Forum | Slackware ARM development documentation | Slackware ARM installation guides

Installing Slackware: Paravirtualization on Apple Silicon within UTM hypervisor

| Platform | AArch64/ARM64 |
|------------------|---|
| Hardware Model | macOS / Apple Silicon |
| Document Version | 1.00, Apr 2025 |
| Author | Stuart Winter <mozes@slackware></mozes@slackware> |

Video Tutorial

This tutorial is also available in video form.

Other Virtualization Platforms

If you'd prefer to use VMWare Fusion, follow the Installation Guide.

Supporting the Slackware ARM Project

If you like what we're doing here, please consider becoming a patron.

Download the Slackware Linux AArch64 Installer ISO image



The '\$' prefixes in the commands indicates the shell prompt - it's not to be typed/copied

Open a shell/terminal on the Mac:

• The Terminal application can be found within Applications \rightarrow Utilities



The default interactive shell is now zsh. To update your account to use zsh, please run `chsh -s /bin/zsh`. For more details, please visit https://support.apple.com/kb/HT208050. lon-mpwtb:~ stwinter\$

Prepare a directory to hold the downloaded assets

We'll download the Slackware Linux distribution into a directory named 'slackware'.

```
$ cd ## this returns to the root of your home directory
$ mkdir slackware
$ cd slackware
```

Set the version of Slackware AArch64 to download

At the time of writing, the only version available is 'current'.

\$ SLKVER=current

Set the Internet media distribution server

If you are using a mirror server rather than the master Slackware ARM server, set it here. The format is: <hostname>::<rsync module name>

```
$ SLKSRV=ftp.arm.slackware.com::slackwarearm
```

Download the Slackware Linux Installer

```
$ rsync -PavL $SLKSRV/platform/aarch64/bootware/installer-
aio/slackwareaarch64-${SLKVER}/aarch64_generic.iso.asc slk-
aarch64_generic.iso.asc
$ rsync -PavL $SLKSRV/platform/aarch64/bootware/installer-
aio/slackwareaarch64-${SLKVER}/aarch64_generic.iso.md5 slk-
aarch64_generic.iso.md5
$ rsync -PavL $SLKSRV/platform/aarch64/bootware/installer-
aio/slackwareaarch64-${SLKVER}/aarch64_generic.iso slk-aarch64_generic.iso
```

The Slackware Installer images are approximately 5 GBytes in size.

Verify the Slackware Installer image

Since GPG is not provided on MacOS by default, the easiest way to verify the images is using the MD5 hash.

Hash method

These MD5 sums are examples - the images you download will have different hashes

```
$ openssl md5 -r slk-aarch64_generic.iso ; cat slk-aarch64_generic.iso.md5
380d7a8a06dc575e2d4e3140725f7a12 *slk-aarch64_generic.iso
380d7a8a06dc575e2d4e3140725f7a12
```

Manually verify that the MD5 sums match.

GPG method



GnuGPG is not installed in MacOS by default

If you have GPG installed, verify the digital signature of the Slackware Installer.

Installing the Slackware ARM GPG key

The Slackware ARM GPG key can be used to verify your downloads.

If you are able to verify the GPG signatures, you can download and import the GPG key like this:

```
$ curl -sSL https://www.slackware.com/infra/keys/arm/GPG-KEY | gpg --import
```

\$ gpg --verify slk-aarch64_generic.iso.asc

As the images are large, verification may take a minute or two.

The output will be similar to this. You are looking for 'Good signature from Slackware ARM...'

```
gpg: assuming signed data in `slk-aarch64_generic.iso'
gpg: Signature made Mon 24 Mar 2025 06:07:44 PM GMT
gpg: using RSA key F7ABB8691623FC33
gpg: Good signature from "Slackware ARM (Slackware ARM Linux Project)
<mozes@slackware.com>" [unknown]
gpg: WARNING: This key is not certified with a trusted signature!
gpg: There is no indication that the signature belongs to the
owner.
Primary key fingerprint: 36D3 7609 2F12 9B6B 3D59 A517 F7AB B869 1623 FC33
```



note

If you see 'BAD signature' you should re-download as it may have become corrupt. If this doesn't help, drop a note to the Slackware ARM forum

Download and Install UTM

If you do not already have UTM installed, Download UTM for MacOS and install it.

Version of UTM tested: 4.6.4 (107)

Creating the Virtual Machine within UTM

• Click Create a new Virtual Machine



• Click Virtualize

Start

Custom

Virtualize

Faster, but can only run the native CPU architecture.



Existing

🕒 Open...

Download prebuilt from UTM Gallery...

• Click Linux

Cancel

Operating System

Preconfigured



Custom



Cancel

Go Back

• Tick Use Apple Virtualization

| Linux | |
|---|-------------------------|
| Virtualization Engine | |
| Use Apple Virtualization | |
| Apple Virtualization is experimental and only for ad- unchecked to use QEMU, which is recommended. | vanced use cases. Leave |
| | |
| Boot Image Type | |
| Boot from kernel image | |
| 🔗 Debian Install Guide | |
| Additional Options | |
| Enable Rosetta (x86_64 Emulation) | |
| Installation Instructions | |
| Boot ISO Image | |
| Path | Clear Browse |
| Cancel | Go Back Continue |

• Select the Slackware ISO image that you downloaded

| 2025/05/23 02:13 (UT | TC) 9/44 | Installing Slackware: Paravi | rtualization on Apple Silicon within UTM hypervisor |
|---|--|------------------------------|---|
| Locations | <> | slackware 😌 | Q Search |
| Ion-mpwtb Google Dri | Applications Desktop Desuments | sik-aarch64_generic.iso | |
| Favorites | Documents Docume | | |
| Stwinter | Learning Library Movies | | |
| Downloads Documents | Music Pictures | 2 | slk-aarch64 generic iso |
| Tags Media | scripts | | ISO Disk Image - 4.67 GB |
| ∬ Music ② Photos | New Folder | , U | Cancel Open |
| Movies | | | Control Coper |

• Click Continue

| Virtualization Engine | |
|--|--------------------------------------|
| Use Apple Virtualization | |
| Apple Virtualization is experimental and only for unchecked to use QEMU, which is recommend | or advanced use cases. Leave led. |
| Boot Image Type | |
| Boot from kernel image | |
| 🔗 Debian Install Guide | |
| Additional Options | |
| Enable Rosetta (x86_64 Emulation | n) |
| Installation Instructions | |
| Boot ISO Image | |
| slk-aarch64_generic.iso | Clear Browse |
| Cancel | Go Back Continue |

• Adjust the amount of RAM allocated to 6GB. The installation will hang when only 4GB of RAM is allocated (despite working fine in VMware Fusion and on bare metal, where the installer can even run with as little as 1GB of RAM).

Hardware





• The default allocation for storage is 64G, but 35GB is sufficient unless you plan on housing large amounts of data.



Storage

Size

Specify the size of the drive where data will be stored into.



1



• You may configure some shared directories if you wish. This is optional. In this guide we will not configure any.

Shared Directory

Shared Directory Path

| Photo: La construction of the second s | 01 | D |
|---|-------|--------|
| Path | Clear | Browse |
| | | |

Optionally select a directory to make accessible inside the VM. Note that support for shared directories varies by the guest operating system and may require additional guest drivers to be installed. See UTM support pages for more details.



• Pick a name for your VM and click Continue

Summary

| Name | Slackware AArch64 |
|-----------------|---|
| | Open VM Settings |
| Engine | Apple Virtualization |
| | Use Virtualization |
| | Legacy Hardware |
| RAM | 4 GB |
| CPU | Default Cores |
| Storage | 35 GB |
| perating System | Linux |
| Boot Image | /Users/stwinter/slackware/slk-aarch64_generic |
| Kernel | |
| Initial Ramdisk | |
| Poot Image | |



UTM VM Settings

There are some other settings for UTM that you may wish to configure at this point. However:



Do not select 'Use NVME' interface' for the hard disk because the system will hang under load

| 2025/05/23 02:13 (UTC | C) 15/44 | Installing Slackware: Paravirtualization on Apple Silicon within UTM hypervisor |
|---|--------------------------|---|
| Information System | Removabl | e Drive 6243-4278-A473-3DE64CA39936.img |
| Boot Virtualization Sharing | Read Only Use NVM Do not | nterface use the NVME interface - the system will hang |
| Devices Display Network + New • | | |
| Drives | | |
| A New | Delete | Cancel Save |

Booting the Slackware Installer

The system will boot into a menu.

You may press e to edit any of the boot loader settings if you wish - which may be useful if using the Installer as a rescue environment



Press ENTER on the menu item Install Slackware on all supported Hardware Models

| | GNU GRUB | version | 2.12 |
|---------------------------|-----------|----------|--------|
| / | | | |
| *Install Slackware on all | supported | Hardware | Models |
| Install Slackware on the | HoneyComb | LX2 | 1 |
| [UEFI Firmware Settings |] | | 1 |
| [Reboot] | | | 1 |
| 1 | | | 1 |
| 1 | | | 1 |
| 1 | | | 1 |
| 1 | | | 1 |
| 1 | | | 1 |
| 1 | | | 1 |
| 1 | | | 1 |
| 1 | | | |
| \ | | | / |
| | | | |

The system will boot within a couple of seconds, and will attempt to acquire an IP address via DHCP. If no DHCP server is available, this will take a little longer to time out.



Networking is not required to install Slackware - the packages are contained within the ISO

Select a Key Map

If you are not using a US key map, select the appropriate key map for you:

<OPTION TO LOAD SUPPORT FOR NON-US KEYBOARD>

If you are not using a US keyboard, you may now load a different keyboard map. To select a different keyboard map, please enter 1 now. To continue using the US map, just hit enter.

Enter 1 to select a keyboard map: 1

-KEYBOARD MAP SELECTION-

You may select one of the following keyboard maps. If you do not select a keyboard map, 'us.map' (the US keyboard map) is the default. Use the UP/DOWN arrow keys and PageUp/PageDown to scroll through the whole list of choices.

| qwerty/us.map |
|----------------------------|
| <mark>qwerty/uk.map</mark> |
| azerty/azerty.map |
| azerty/be-latin1.map |
| azerty/fr-latin0.map |
| azerty/fr-latin1.map |
| azerty/fr-latin9.map |
| azerty/fr-old.map |
| azerty/fr-pc.map |
| azerty/fr.map |
| azerty/wangbe.map |
| |
| |
| < OK > <cancel></cancel> |

OK, the new map is now installed. You may now test it by typing anything you want. To quit testing the keyboard, enter 1 on a line by itself to accept the map and go on, or 2 on a line by itself to reject the current keyboard map and select a new one.

1

Beginning the Setup

You will be presented with a shell prompt:

_inux 6.12.20-armv8.

If you're upgrading an existing Slackware system, you might want to remove old packages before you run 'setup' to install the new ones. If you don't, your system will still work but there might be some old files left laying around on your drive.

Just mount your Linux partitions under /mnt and type 'pkgtool'. If you don't know how to mount your partitions, type 'pkgtool' and it will tell you how it's done.

To partition your hard drive(s), use 'cfdisk' or 'fdisk'. To start the main installation (after partitioning), type 'setup'.

oot@slackware:/#

Creating the Partition Table

You need to create the partition table for the OS and your data to live on.

Open the fdisk Tool



fdisk /dev/vda

```
root@slackware:/# fdisk /dev/vda
```

```
Welcome to fdisk (util-linux 2.41).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.
Device does not contain a recognized partition table.
Created a new DOS (MBR) disklabel with disk identifier Øx9956db8a.
```

```
Command (m for help):
```

Create a GPT Disk Label

As we're using an EFI system, we'll create a 100MB EFI partition first

Type g and press ENTER:

Command (m for help): g Created a new GPT disklabel (GUID: 265980B6-D57A-452E-<u>83B6-12336F0FEFB7)</u>

Create a 100MB UEFI Partition

- Type n and press ENTER
- Press ENTER for both the "partition number" and "First sector"
- For the "Last sector" enter +100M

```
Command (m for help): [n]
Partition number (1–128, default 1): Press ENTER
First sector (2048–73400286, default 2048): Press ENTER
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048–73400286, default 73398271): +100M
Created a new partition 1 of type 'Linux filesystem' and of size 100 MiB.
```

Set the partition type to uefi:

- Type t and press ENTER
- Type uefi and press ENTER

```
Command (m for help): t
Selected partition 1
Partition type or alias (type L to list all): uefi
Changed type of partition 'Linux filesystem' to 'EFI System'.
```

Create the Swap Partition

For the 2nd partition we'll create a 4GB Swap partition.

- Type n and press ENTER
- Press ENTER for the "partition number"
- Press ENTER for the "First sector"
- For the "Last sector" enter +4G

```
Command (m for help): n
Partition number (2–128, default 2): Press ENTER
First sector (206848–73400286, default 206848): Press ENTER
Last sector, +/-sectors or +/-size(K,M,G,T,P) (206848–73400286, default 73398271): +4G
Created a new partition 2 of type 'Linux filesystem' and of size 4 GiB.
```

Set the partition *type* to Swap:

- Type t and press ENTER
- Press ENTER for the "partition number"
- Type swap and press ENTER

 2025/05/23 02:13 (UTC)
 19/44
 Installing Slackware: Paravirtualization on Apple Silicon within UTM hypervisor

 Command (m for help): [t]
 Partition number (1,2, default 2): Press ENTER

 Partition type or alias (type L to list all): swap

 Changed type of partition 'Linux filesystem' to 'Linux swap'.

Create the root Partition

This partition will house the OS and your data and will fill the remainder of the allocated storage:

- Type n and press ENTER
- Press ENTER for the "partition number"
- Press ENTER for the "First sector"
- Press ENTER for the "Last sector"

```
Command (m for help):[n]
Partition number (3–128, default 3): Press ENTER
First sector (8595456–73400286, default 8595456): Press ENTER
Last sector, +/-sectors or +/-size(K,M,G,T,P) (8595456–73400286, default 73398271):
Created a new partition 3 of type 'Linux filesystem' and of size 30.9 GiB.
```

Save the Partition Layout

The partition layout must now be saved.

• Type w and press ENTER

```
Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.
```

Begin the Installation

You may now begin the Slackware installation process.

At the shell, type the command $\verb|setup||$ and press $\verb|ENTER||$



Installation Essentials

We'll now perform the initial setup steps:

• Scroll down to ADDSWAP and press ENTER

| Welcome to Sla | -Slackware Linux Setup (version 15.0+) ackware Linux Setup. |
|----------------------------------|--|
| Select an opti Alternate keus | ion below using the UP/DOWN keys and SPACE or ENTER. |
| | |
| HELP | Read the Slackware Setup HELP file |
| KEYMAP | Remap your keyboard if you're not using a US one |
| ADDSWAP | Set up your swap partition(s) |
| TARGET | Set up your target partitions |
| SOURCE | Select source media |
| SELECT | Select categories of software to install |
| INSTALL | Install selected software |
| CONF I GURE | Reconfigure your Linux sustem |
| EXIT | Exit Slackware Linux Setup |
| | |
| | |
| | |
| | |

• Press ENTER to accept the default offered



Choose No to scanning for bad blocks

CHECK SWAP PARTITIONS FOR BAD BLOCKS? Slackware Setup will now prepare your system's swap space. When formatting swap partitions with mkswap you may also check them for bad blocks. This is not the default since nearly all modern hard drives check themselves for bad blocks anyway. Would you like to check for bad blocks while running mkswap? < Yes >

| Your swapspace h be added to your | SWAP SPACE as been configur /etc/fstab: | CONFIGURED ed. This inf | ormation will | | |
|--------------------------------------|---|----------------------------|---------------|---|---|
| LABEL=SLKswap0 | ѕшар | swap | defaults | 0 | 0 |
| | K | <u>o</u> k > | | | |

• Press ENTER to accept the default partition suggested for use as the root partition.

| Please select a root (/) Linux | elect Linux installation partition: partition from the following list to use for your partition. |
|-----------------------------------|--|
| /dev/vda3 | Linux 316 (done adding partitions, continue with setup) (done adding partitions, continue with setup) (done adding partitions, continue with setup) (done adding partitions, continue with setup) 837 |
| | <pre></pre> |

• Press ENTER to format the partition

| If this partitio | FORMAT PARTITION /dev/vda3 |
|------------------|--|
| NOTE: This will | In has not been formatted, you should format it. |
| this partition? | erase all data on it. Would you like to format |
| Format | Quick format with no bad block checking |
| Check | Slow format that checks for bad blocks |
| No | No, do not format this partition |
| | K OK > KCancel> |

• Press ENTER to pick the suggested file system type:



| SE | LECT FILESYSTEM FOR /dev/vda3 |
|---|--|
| Please select the ty Here are description traditional Linux fi journaling version of the ext3 filesystem. Btrfs is a B-tree co File System. JFS is enterprise servers. on IRIX. | ppe of filesystem to use for the specified device. It is of the available filesystems: Ext2 is the le system and is fast and stable. Ext3 is the of the Ext2 filesystem. Ext4 is the successor to Bcachefs is a B-tree copy-on-write filesystem. ppy-on-write filesystem. F2FS is a Flash-Friendly IBM's Journaled Filesystem, currently used in IBM XFS is SGI's journaling filesystem that originated |
| | |
| ext2 | Standard Linux Ext2 Filesystem |
| _ext3 | Ext3 Journaling Filesustem |
| ext4 | Ext4 Journaling Filesustem |
| ifs | IBM's Journaled Filesustem |
| beachafe | Reschefe Convern-Unite Retrop Filosystem |
| btothers | Diachers Copy-on-write b-tree rifesystem |
| DIFTS | Btrts Lopy-on-write B-tree Filesystem |
| f2fs | Flash-Friendly File System |
| xfs | SGI's Journaling Filesystem |
| L | |
| | |
| | < <u>OK</u> > <cancel></cancel> |

• Press ENTER to close the information dialog box:

| | DONE ADDING | LINUX P | ARTITIONS TO | /etc/fstab | 1 |
|--------------|-------------|---------|--------------|------------|---|
| Adding this | information | to your | /etc/fstab: | | |
| LABEL=SLKroo | ot / | | ext4 | defaults | 1 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | < | <u>o</u> k > | | |

• Press ENTER to format the EFI partition:

| FORMAT EFI PARTITE An EFI System Partition was it is not formatted as FATS format this partition? | ION /dev/vda1? s found on /dev/vda1, but 32. Would you like to |
|--|--|
| < Yes > | < No > |

• Press ENTER to close the information dialog box:

| | EFI SYSTEM PR | RTITION RECO | IGN I ZED | |
|---------------|-------------------|---------------|-----------|-----|
| Adding this i | nformation to you | ır /etc/fstab | 11 | |
| /dev/vda1 | /boot/efi | vfat | defaults | 1 0 |
| | | | | |
| | | | | |
| | | | | |

Selecting the Installation Media

This edition of the Slackware AArch64 Installer contains the full set of Slackware packages.

Whilst other media installation (locally mounted directory, NFS, HTTP and others) can be selected by choosing No, the recommendation is to accept the defaults, installing the packet set bundled with the Slackware Installer.



Selecting the Packages

Slackware packages are organised into loose groups called "series." If you're an experienced Slackware user, you can customize which series to install. However, to keep things simple and avoid potential issues with dependencies (as Slackware does not manage them automatically), it's recommended to install all packages—at least for the initial setup.



• Press ENTER to proceed



Press ENTER to accept the suggested prompting mode

Installation begins

The packages will now install. This takes approximately 10 minutes.

| dcron-4.5-aarch64-13: Dillon's Cron daemon | [200K] |
|--|---------|
| devs-2.3.1-aarch64-2: system device files | [5.0M] |
| dialog-1.3_20250116-aarch64-1: display dialog boxes from shell scripts . | [570K] |
| dosfstools-4.2-aarch64-2: tools for working with FAT filesystems | [310K] |
| dracut-106-aarch64-1: creates an initrd for the kernel | [2.7M] |
| e2fsprogs-1.47.2-aarch64-1: ext2/3/4 filesystems utilities | [7.2M] |
| ed-1.21-aarch64-1: text editor | [150K] |
| efibootmgr-18-aarch64-1: tool to modify UEF1 boot entries | [190K] |
| efivar-20201015_cff88dd-aarch64-1: library and utilities to handle UEFI | [430K] |
| elogind-255.17-aarch64-1: logind extracted from systemd | [5.4M] |
| elvis-2.2_0-aarch64-7: ex/vi text editor | [3.0M] |
| etc-15.1-aarch64-14: system configuration files | [140K] |
| eudev-3.2.14-aarch64-2: dynamic device directory system | [9.5M] |
| exfatprogs-1.2.8-aarch64-1: exFAT filesystem utilities | [460K] |
| f2fs-tools-1.16.0-aarch64-2: Flash-Friendly File System | [1010K] |
| file-5.46-aarch64-2: a utility to determine file type | [2.9M] |
| findutils-4.10.0-aarch64-1: utilities to locate files | [2.1M] |
| floppy-5.6-aarch64-1: floppy disk utilities | [630K] |
| gawk-5.3.1-aarch64-1: pattern scanning and processing language | [4.3M] |
| gettext-0.24-aarch64-1: internationalization framework | [2.0M] |

In-built Entertainment

If you're short of things to occupy yourself whilst the packages install, you can play the bundled bricktick game!

• Hold down the alt key and press the RIGHT arrow key.





• Type bricktick and press ENTER

Read the on-screen instructions and begin playing!

```
Welcome to Bricktick v0.9!

Charms:

% is +1,000 score.

@ is +1 lives,

# is 10 second slow ball.

is 3 second nuke mode.

Ingame, press 's' to save a game and 'o' to load it.

Press space to start a game, 'o' to load one, or ESC to exit._
```



When you've had enough, and would like to check on the status of the installation:

• Hold down the alt key and press the LEFT arrow key.

Post Installation Configuration

Once the packages have completed installing, there are some post configuration actions:

Mouse Configuration

• Select USB mouse and press ENTER

| | MOUSE CONFIGURATION |
|----------------|---|
| This part of t | the configuration process will create a /dev/mouse link |
| pointing to yo | our default mouse device. You can change the /dev/mouse |
| link later if | the mouse doesn't work, or if you switch to a different |
| type of points | ing device. We will also use the information about the |
| mouse to set t | the correct protocol for gpm, the Linux mouse server. |
| Please select | a mouse type from the list below: |
| ps2 | PS/2 port mouse (most desktops and laptops) |
| usb | USB connected mouse |
| imps2 | Microsoft PS/2 Intellimouse |
| exps2 | Intellimouse Explorer PS/2 |
| bare | 2 button Microsoft compatible serial mouse |
| ms | 3 button Microsoft compatible serial mouse |
| mman | Logitech serial MouseMan and similar devices |
| msc | MouseSystems serial (most 3 button serial mice) |
| ↓(+) | 38% |
| | < OK > <cancel></cancel> |

• Choose Yes to load the mouse driver for the Linux virtual console



Network Configuration

• Press ENTER to configure the network

| CONFIGURE NETWORK? Would you like to configure your network? |] |
|---|---|
| <pre></pre> | |
| | |

• Enter a host name for this machine

| ENTER HOS First, we'll need the name you' Only the base hostname is neede For example: darkstar | TNAME d like to give your host. d right now – not the domain. |
|--|---|
| Enter hostname: slackbox | |
| <mark>< ОК ></mark> | < Exit > |

• Enter a domain name for this machine. If you don't have a local domain, pick example.com

| ENTER DOMAINNAME FOR 'slackbox' Now, we need the domain name for this machine, such as: example.org Do not supply a leading '.' Enter domain name for slackbox: |
|---|
| example.com |
| K OK X K Exit X |

• Choose No in response to configuring a VLAN ID:

| CONNECT VIA VLAN Some advanced networking set ups require a VLAN ID in order to connect to the network. Do you wish to configure a VLAN ID now? |
|---|
| Unless you are sure you require a VLAN ID, select 'No'. |
| < Yes > K No > |

• Pick the default suggestions to configure the network using Network Manager

| CON Now we need to kn If you have an in and DNS, use the address is assign DSL services), so to have the Network wireless network networks may also assign an address network card, se Which type of ne | FIGURATION TYPE FOR 'slackbox.example.com' now how your machine connects to the network. nternal network card and an assigned IP address, gateway, 'static IP' choice to enter these values. If your IP ned by a DHCP server (commonly used by cable modem and elect 'DHCP'. Select 'NetworkManager' if you would like orkManager daemon automatically handle your wired and interfaces (this is simple and usually works). IPv6 o use SLAAC (Stateless Address Autoconfiguration) to s based on Router Advertisments. If you do not have a lect the 'loopback' choice. twork setup would you like? |
|--|--|
| static IP DHCP | Use a static IPv4 or IPv6 address to configure ethernet Use a DHCP (IPv4 or IPv6) server to configure ethernet |
| NetworkManager | Autoconfigure network using NetworkManager |
| loopback | Set up a loopback connection (modem or no pet) |
| Toopback | |
| | |
| | |

• Press ENTER on both dialog boxes to proceed



Automatically starting Services

Slackware uses the System-V init system, which uses a collection of rc (run control) scripts to control which daemons (services) start at boot time.

You can use the UP and DOWN arrow keys to move through the menu and press SPACE bar to select or de-select any services. In this example, we're selecting the rc.rpc service as we want to mount NFS shares.

| CONFIR | M STARTUP SERVICES TO RUN | | | |
|--|--|--|--|--|
| The selected services will be started at boot time. If you don't need them, you may unselect them to turn them off (which may improve overall system security). You may also choose to start services that are not rup by default, but be aware that more services means less security. | | | | |
| Use the spacebar to selec | t or unselect the services you wish to run. | | | |
| Recommended choices have | been preselected. Press the ENTER key when you | | | |
| are finished. | | | | |
| <u>^(-)</u> | | | | |
| []rc.ntpd | The network time server | | | |
| []rc.openldap | OpenLDAP server | | | |
| | OpenVPN daemon | | | |
| []rc.pcscd | PC/SC API smartcard libraru/daemon | | | |
| []rc.postfix | The Postfix mail server | | | |
| | RPC (NFS) daemons | | | |
| L rc samba | The Samba file/print server | | | |
| | 82% | | | |
| | | | | |
| K OK | > <cancel></cancel> | | | |
| | | | | |

You can run this script again within the OS

Virtual Console Font Configuration

While optional, selecting a console font is recommended—otherwise, the default text may appear quite small and hard to read.

It's generally best to choose the font currently used by the installer, though you're free to select any font you prefer.

• Use the LEFT arrow key to move the selection to Yes and press ENTER

| CONSOLE Would you like to try | FONT CONFIGURAT | ION screen fonts? |
|----------------------------------|-----------------|----------------------|
| K <u>Y</u> es | > < No | > |

• Press t to jump to the fonts named 't', and the DOWN arrow to locate the font ter-728b



If you like this font, type 1 and press ENTER. If you'd prefer to use a different font, type 2 and press ENTER to return to the font selection menu.

OK, the new font is now installed. You may now test it by typing anything you want. To quit testing the font, enter 1 on a line by itself to accept the font and go on, or 2 on a line by itself to reject the current font and select a new one. 1

Time Zone Configuration

If you'd like to select a specific time zone (rather than UTC), select NO and press ENTER



Select the appropriate time zone for your locale:



You can jump sections within the menu by pressing the letter that corresponds to your region. For example, to select Europe/London, I can press e then use the DOWN arrow keys to locate the final entry

- Use the arrow keys to select your appropriate time zone
- Press ENTER to select the time zone



Configure the Default "vi" Editor

Select the implementation of the vi editor that you prefer. This is the default that will be used to edit crontabs and so forth.



You can override the default editor by setting the environment variable EDITOR within your shell profile

• Unless you have a preference, press ENTER to choose the default of vim

| CHOOSE DEFAULT EX/VI EDITOR This part of the configuration process will create ex and vi symlinks in /usr/bin pointing to your default ex/vi editors. On a fresh installation, these will point to vim by default as it is the de facto standard. You may choose a different default if you prefer, but please note that elvis does not support UTF8. | | | |
|--|--|--|--|
| elvis Slackware's traditional ex/vi, no UTF8 support nvi Classic BSD ex/vi, supports UTF8 | | | |
| Vim Vi improved - top rated ex/Vi clone, supports UIF8 | | | |
| K OK > Cancel> | | | |

Configure the Window Manager for X

Select the window manager of your choice. KDE and Xfce are both solid options when running under paravirtualization, but you may prefer one of the classic lightweight window managers if you're looking for a more minimal setup.

| SELECT DEFRULT WINDOW MANAGER FOR X Please select the default window manager to use with the X Window System. This will define the style of graphical user interface the computer uses. KDE provides the most features, and people with Windows or MacOS experience will find it easy to use. Other window managers are easier on system resources, or provide other unique features. | | | |
|--|--|--|--|
| xinitrc.kde xinitrc.xfce xinitrc.fluxbox xinitrc.blackbox xinitrc.umaker xinitrc.fvum2 xinitrc.tum xinitrc.mum | KDE: KDE Plasma DesktopThe Cholesterol Free Desktop EnvironmentThe fluxbox window managerThe blackbox window managerWindowMakerF(?) Virtual Window Manager (version 2.xx)Tab Window Manager (very basic)Motif WM | | |
| K | OK > <cancel></cancel> | | |

Set the root Password

• Press ENTER to set the root password



- Type the password in once, press ENTER
- Re-enter the password to confirm it, and press ENTER



Complete the Setup

• Press ENTER to proceed



- Select EXIT from the menu
- Press ENTER

| Welcome to Sla Select an opti Alternate keys | -Slackware Linux Setup (version 15.0+) ackware Linux Setup. on below using the UP/DOWN keys and SPACE or ENTER. a may also be used: '+', '-', and TAB. | |
|---|---|--|
| HELP KEYMAP ADDSWAP TARGET SOURCE SELECT INSTALL CONFIGURE | Read the Slackware Setup HELP file Remap your keyboard if you're not using a US one Set up your swap partition(s) Set up your target partitions Select source media Select categories of software to install Install selected software Reconfigure your Linux system Exit Slackware Linux Setup | |
| | K OK > <cancel></cancel> | |

- Select Power Off
- Press ENTER

| -Slackware Linux Setup is complete Slackware Linux setup is complete. |
|---|
| You may now reboot your machine into the Slackware OS. |
| If you have some post-installation tweaks you'd like to make manually, you can open a shell. |
| If you want to make some changes to the hardware before booting the Slackware OS, you may wish to power off computer. |
| Shell Reboot Power Off |
| Cancel> |

Configure UTM to boot the Operating System

Now that the Slackware OS has been installed, there are a couple of final changes to make within UTM:

• Close the VM window:



• Clear the Slackware Installer ISO so that the OS will boot:

| ③ Status | Stopped |
|------------------|-------------------------|
| C Architecture | aarch64 |
| C Machine | Linux |
| Memory | 5.86 GB |
| 🖨 Size | 132 KB |
| 🖨 External Drive | Slk-aarch64_generic.iso |
| Browse | 15C-D855A2368A53.img |
| Clear | New Shared Directory |



• Right-click on the VM and select Edit

| ••• | + UTM Slackware AArch64 |
|-------------------|----------------------------------|
| Slackware AArch64 | |
| S | how in Finder |
| E | dit Modify settings for this VM. |
| R | un |
| S | hare |
| M | love |
| с | lone |
| N | ew from template |
| D | elete |

- Click on the Network settings
- Choose Bridged (Advanced) as the Network Mode
- Click Save

| 2025/05/23 02:13 (UT | TC) 37/44 | Installing Slackware | e: Paravirtualization on Apple Silicon with | in UTM hypervisor |
|---------------------------------|--------------|----------------------|---|-------------------|
| Information | Network Mode | Bridged (Advanced) | 0 | |
| System | MAC Address | c6:4f:39:d9:4f:2b | Random | |
| () Boot | | Bridged Settings | | |
| 💥 Virtualization | Interface | Automatic | ٢ | |
| Sharing | | | | |
| Devices | | | | |
| C Display | | | | |
| Retwork | | | | |
| + New • | | | | |
| Drives | | | | |
| 😑 Zero KB Im | | | | |
| 😑 35 GB Image | | | | |
| A New | Remove | | Cancel Save | |
| | | | | |

Boot Slackware

You can now boot the Slackware Operating System.

• Click on the Play icon



• Press ENTER on the Slackware menu option





Login as root

You can now login as root and perform some post installation tasks.



Post Installation Configuration

There are a few post-installation configuration tasks to complete.

Add a plebeian user

You should add a plebeian (non-root) user using the adduser tool.

This is documented here.

Starting X

Once you have added your plebeian user, you can login to another virtual console:

• Hold down the ALT key and press the RIGHT arrow key



- Login with your plebeian user
- Type startx and press ENTER



Managing Slackware

Setting up UTM shared directories

If you've created any shared directories (such as UTM sharing directories on the host macOS computer, made available within the Slackware guest), you can set them up now:

As the root user, within Slackware:

Make a mount point

\$ mkdir /mnt/utm

Add the mount point to /etc/fstab

| <pre>\$ echo "share >> /etc/fstab</pre> | /mnt/utm | virtiofs | rw,nofail | 0 | 0" |
|---|----------|----------|-----------|---|----|
| | | | | | |

Mount it

\$ mount /mnt/utm

Verify

You can see theslackware and Desktop directories shared from the macOS host:

root@apple-utm:~# ls /mnt/utm/

Desktop/ slackware/

Keeping the Slackware OS up to date

One of the preferred tools to keep your system up to date is slackpkg.

Upgrading the Kernel: In Slackware AArch64, you simply upgrade the Kernel packages and reboot - no manual steps are required

Loading Additional Linux Kernel Modules within the OS Proper

Often Kernel modules for discovered hardware will be automatically loaded, but occasionally you will need to manually configure the loading of some modules.

/etc/rc.d/rc.modules.local

This file is a shell script that is run as one of the last steps before the OS has fully booted. You can enter modprobe commands here to load the specific modules you require.

Configuration files within the directory /lib/modprobe.d/ can be used to configure the parameters of the modules. Existing files within that directory serve as reference examples should you need them.

Loading Additional Linux Kernel Modules early in the boot sequence

There are a number of peripherals that may require Kernel modules loading early on in the boot sequence. An example of this would be RTCs (Real Time Clocks) or storage controllers that are required to access the file systems on which the OS lives.



Usually you won't need to load modules early in the boot sequence. See the previous section about loading modules from within the OS Proper.

To load Kernel modules during the early boot sequence, read:

/boot/local/README.txt

As root, the easiest way to begin is by renaming the example script:

mv /boot/local/load_kernel_modules.post.sample

/boot/local/load_kernel_modules.post

Then add the appropriate module loading commands to:

/boot/local/load_kernel_modules.post You can also add shell code here to initialise a
peripheral - writing something to the peripheral's Kernel interface, for example.

Starting Services at Boot Time

During the installation, you configured which services to start at boot time.

You can start or disable other services either manually or by using pkgtool

Manually change the permissions

As root:

root@slackware:# cd /etc/rc.d

To enable CUPS:

root@slackware:/etc/rc.d# chmod +x rc.cups

To disable CUPS:

root@slackware:/etc/rc.d# chmod -x rc.cups

Use "pkgtool"

root@slackware:# pkgtool

Select Setup from the menu and press ENTER

| S1 | ackware Package Tool (pkgtool version 15.0) |
|----------------|--|
| Welcome to the | Slackware package tool. |
| Which option w | nuld unu like? |
| | |
| Current | Install packages from the current directory |
| Other | Install packages from some other directory |
| Remove | Remove packages that are currently installed |
| View | View the list of files contained in a package |
| Setup | Choose Slackware installation scripts to run again |
| Exit | Exit Pkgtool |
| L | |
| | |
| | < OK > <cancel></cancel> |
| | |

• Select services and press ENTER

| SELECT | SYSTEM SETUP SCRIPTS | 1 |
|---|---|-------|
| Please use the spacebar to select the | setup scripts to run. Hit enter when you are | done |
| selecting to run the scripts. | | |
| <pre>() 11.bootloader-flash-lx2160acex7 () 11.cacerts () 12.bootloader-flash-rk3399 () cups-genppdupdate () htmlview () mouse () netconfin (*) services () setconsolefont((+)</pre> | 1x2160acex7 Firmware flashing tool Rebuild SSL certificate database. RK3399 Boot Loader flashing tool Update Gutenprint PPD files for CUPS. Set a default browser link. Configure the console mouse support (GPM). Configure basic network settings Select/deselect system daemons (services) Select a font for the console | 31% |
| < OK > | <cancel></cancel> | ····· |
| | | |

• Choose the service you want and press ENTER



Starting a Graphical Login Manager by Default

If you prefer to use a graphical login manager, you can configure the default runlevel as 4:

```
su -
sed -i 's?id:3:?id:4:?g' /etc/inittab
reboot
```

Customising the Slackware Linux Kernel

If you'd like to customise the Linux Kernel, the easiest way is to follow the HOWTO guide and use the Slackware AArch64 Kernel build script to create new packages.

Reducing Boot Time

This section isn't relevant for virtualized platforms, as the OS boots extremely quickly. However, it's included here for completeness, as it appears in the guides for other hardware models.

Slackware AArch64 ships with a generic OS InitRD (Operating System Initial RAM Disk - the environment that prepares the machine to boot the Operating System Proper), so as to support a wide range of Hardware Models.

However, this isn't the optimal setup once the Slackware OS has been installed because the generic OS InitRD typically exceeds 40MB, which in some cases can add a couple of seconds to the boot time whilst it's loaded from the SD card.

The os-initrd-mgr (Operating System Initial RAM Disk Manager) tool has an option to synchronize the OS InitRD's Kernel modules with *only* those presently loaded within the Operating System.

To do this:

```
$ su -c 'os-initrd-mgr --sync-loaded-kmods' - # note the final -
```

This option isn't the default, but you can make it so by following the instructions within /etc/os-initrd-mgr.conf.sample

This way when you upgrade the Kernel packages in the order described above, it'll automatically synchronize the modules.

os-initrd-mgr has a safety check to only proceed when the running Kernel and incoming Kernel are at the same major version and patch level.

For example, when running Linux 5.17.1, upgrading to 5.17.2 will work; but an upgrade of Linux 5.17.1 \rightarrow 5.18.1 will require a reboot then to run os-initrd-mgr again to re-sync.



Installing extra Software

Slackware comes with a good base of software applications, but there are plenty more available in the Open Source Ecosystem.

The best way to add new software is to use the build scripts from SlackBuilds.org.

Useful Guides and Resources

• Slackware ARM Support Forum

Known Issues and Feature Gaps

• No currently known issues.

More details on the development Road Map here.

From: https://docs.slackware.com/ - **SlackDocs**

Permanent link: https://docs.slackware.com/slackwarearm:inst_sa64_virt

Last update: 2025/04/22 14:00 (UTC)

