

# Installing Slackware Using GPT with a BIOS motherboard

It is possible to install Slackware to a disk that uses a GUID Partition Table (GPT), even on a machine that uses BIOS (i.e. you do not need a UEFI-based machine). Using GPT allows you to install Slackware onto very large disk drives (the theoretical maximum addressable disk size is 2 ZiB). As always, partitioning should be done prior to starting the 'setup' script, however you must use a GPT aware partitioning tool, e.g. gdisk, cgdisk or parted (all of which are included with Slackware). The main sections below explain how to setup various popular boot loaders.

## LILO

LILO should be configured by the installer and just work. However some people have reported issues with liloconfig not detecting GPT partitions. If you encounter this issue skip automatic LILO configuration. Then after installation is complete, [enter your local Slackware install](#). From here, customize /etc/lilo.conf\_example and save it as /etc/lilo.conf. You will need to set LILO to install to the protective MBR of your primary disk and add entries for your chosen kernel(s), in addition to any other changes you see fit. Once you have done this, issue the 'lilo' command.



Whilst LILO works well with any file system format that is compatible with the FIBMAP ioctl (required to map files to block numbers), you are likely to have issues when /boot is located on XFS, Btrfs or Nilfs2. You can avoid this by making an ext2 /boot partition or using a different bootloader.

## Grub 2

If you want to use Grub 2, make sure you have a 'BIOS boot partition' (partition type EF02 in gdisk or cgdisk). This can be anywhere on disk though putting it at the start seems sensible. It is recommended that it be at least 1MiB. Skip the bootloader (LILO) section during install. After installation is complete, [enter your local Slackware install](#). Finally, issue the following to actually install Grub 2 as your bootloader:

```
# grub-install --modules=part_gpt /dev/sda
# grub-mkconfig -o /boot/grub/grub.cfg
```



This assumes you are using the disk /dev/sda, adjust if this is not the case.

## Extlinux (Syslinux)

The final alternative is to use Extlinux (part of the Syslinux package included with Slackware). It is

also capable of booting a system with GPT and like LILO, it doesn't need a 'BIOS boot partition'. To use Extlinux, the partition containing `/boot` must be formatted to ext2, ext3, ext4, or btrfs.

Before you begin Slackware installation, set one of the partitions as the boot partition. For example, presuming that `/boot` was on `/dev/sda`, you could issue the following from the shell prompt of the install media, after partitioning is complete:

```
# sgdisk /dev/sda --attributes=1:set:2
```

You can also use `sgdisk` to confirm it was indeed set correctly:

```
# sgdisk /dev/sda --attributes=1:show  
1:2:1 (legacy BIOS bootable)
```

During actual Slackware installation, skip the bootloader (LILO) section. After installation is complete, [enter your local Slackware install](#). You can then install Extlinux as your bootloader as follows:

```
# mkdir -p /boot/extlinux  
# extlinux --install /boot/extlinux  
# cat /usr/share/syslinux/gptmbr.bin > /dev/sda
```



All of the above assumes you are using the disk `/dev/sda`, adjust if this is not the case.

Assuming you wanted a simple boot menu, copy `menu.c32` over into `/boot/extlinux/` as well:

```
# cp /usr/share/syslinux/menu.c32 /boot/extlinux/
```

Finally create a `/boot/extlinux/extlinux.conf` file along the following lines:

```
UI menu.c32  
PROMPT 0  
MENU TITLE Boot options  
TIMEOUT 50  
DEFAULT huge  
  
LABEL huge  
    MENU LABEL Slackware (Huge)  
    KERNEL /boot/vmlinuz-huge-smp-3.10.17-smp  
    APPEND root=/dev/sda1 ro  
  
LABEL generic  
    MENU LABEL Slackware (Generic)  
    KERNEL /boot/vmlinuz-generic-smp-3.10.17-smp  
    APPEND root=/dev/sda1 ro  
    INITRD /boot/initrd.gz
```



The assumes Slackware is installed on your `/dev/sda1` partition and you are using the **3.10.17-smp** kernels, adjust as needed.

## Accessing the Slackware install, prior to bootloader installation

In all of the bootloader installation examples above, final installation of the bootloader is done from *within* the installed Slackware system. There are two ways to get into your Slackware install, prior to the installation of the bootloader. You can use `chroot ('chroot /mnt')` from the shell prompt provided by the install media, after you have finished the basic installation, i.e. after the message "Installation of Slackware Linux is complete". Alternatively Slackware's install media 'boot: ' prompt includes help text explaining how to boot the installed Slackware system, rather than the install environment (i.e. at the boot prompt type something like '**hugesmp.s** root=`/dev/sda1` rdinit= ro').



The final example assumes Slackware is installed on your `/dev/sda1` partition and you wish to boot with the **hugesmp.s** kernel, adjust as needed.

## Sources

- Originally written by [ruario](#)
- LILO tips from jtsn on LQ:  
<http://www.linuxquestions.org/questions/slackware-14/fresh-install-64-14-1-with-gpt-without-efi-in-a-bios-motherboard-4175484184/#post5062475>

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