

General note on [U]EFI x86_64 support

The nomenclature EFI and UEFI are used interchangeably in this document.

Although the tools below are not needed for building the kernel, the needed bootloader support and associated tools for x86_64 platforms with EFI firmware and specifications are listed below.

1. UEFI specification: <http://www.uefi.org>
2. Booting Linux kernel on UEFI x86_64 platform requires bootloader support. Elilo with x86_64 support can be used.
3. x86_64 platform with EFI/UEFI firmware.

Mechanics

- Build the kernel with the following configuration:

```
CONFIG_FB_EFI=y
CONFIG_FRAMEBUFFER_CONSOLE=y
```

If EFI runtime services are expected, the following configuration should be selected:

```
CONFIG_EFI=y
CONFIG_EFI_VARS=y or m          # optional
```

- Create a VFAT partition on the disk
- Copy the following to the VFAT partition:

elilo bootloader with x86_64 support, elilo configuration file, kernel image built in first step and corresponding initrd.
Instructions on building elilo and its dependencies can be found in the elilo sourceforge project.

- Boot to EFI shell and invoke elilo choosing the kernel image built in first step.
- If some or all EFI runtime services don't work, you can try following kernel command line parameters to turn off some or all EFI runtime services.

```
noefi                turn off all EFI runtime services
reboot_type=k        turn off EFI reboot runtime service
```

- If the EFI memory map has additional entries not in the E820 map, you can include those entries in the kernels memory map of available physical RAM by using the following kernel command line parameter.

```
add_efi_memmap
include EFI memory map of available physical RAM
```