ELF Note PowerPC Namespace

The PowerPC namespace in an ELF Note of the kernel binary is used to store capabilities and information which can be used by a bootloader or userland.

Types and Descriptors

The types to be used with the "PowerPC" namespace are defined in [1].

1. PPC_ELFNOTE_CAPABILITIES

Define the capabilities supported/required by the kernel. This type uses a bitmap as "descriptor" field. Each bit is described below:

- Ultravisor-capable bit (PowerNV only).

```
#define PPCCAP_ULTRAVISOR_BIT (1 << 0)
```

Indicate that the powerpc kernel binary knows how to run in an ultravisor-enabled system.

In an ultravisor-enabled system, some machine resources are now controlled by the ultravisor. If the kernel is not ultravisor-capable, but it ends up being run on a machine with ultravisor, the kernel will probably crash trying to access ultravisor resources. For instance, it may crash in early boot trying to set the partition table entry 0.

In an ultravisor-enabled system, a bootloader could warn the user or prevent the kernel from being run if the PowerPC ultravisor capability doesn't exist or the Ultravisor-capable bit is not set.

References

[1] arch/powerpc/include/asm/elfnote.h