**Project 1 Reference**

* **[紀錄一下/proc/pid/maps的使用](http://gic4107.blogspot.tw/2013/08/procpidmaps.html)**
* [**KASAN**](https://www.kernel.org/doc/html/v4.12/dev-tools/kasan.html)
* Level2\_kernel\_pgt
  + “arch/x86/kernel/head\_64.s”
  + include/asm-generic/pgtable-nopud.h
  + include/asm-generic/pgtable-nopmd.h
  + arch/x86/include/asm/pgtable-2level\*.h
  + arch/x86/include/asm/pgtable-3level\*.h
  + arch/x86/include/asm/pgtable\_64\*.h
* Linux Kernel Image Size
  + Environment: Fedora 22
  + Kernel Version: 4.0.4-301
  + Kernel Size: 5.76171875MB (5900kB)

1@8kB 
121kB 
1@8kB 
138kB 
14@kB 
25kB 
128kB 
2@kB 
149kB 
1@7kB 
1@7kB 
112kB 
17@kB 
159kB 
42kB 
11@kB 
3361kB 
15539kB 
185kB 
ra 15 : 05 
root@localhost: 'boot 
/g rub2/10ca1e/ca . mo 
/g rub2/10ca1e/en@quot . mo 
/grub2/10ca1e/n1 . mo 
/g rub2/10ca1e/en@pig1atin . mo 
/g rub2/10ca1e/da . mo 
/g rub2/10ca1e/ ru . mo 
/g rub2/10ca1e/ja.mo 
/g rub2/10ca1e/fr.mo 
/grub2/10ca1e/ast . mo 
/g rub2/10ca1e/en@cyrillic . mo 
/grub2/10ca1e/it . mo 
/g rub2/10ca1e/de . mo 
/g rub2/10ca1e/es . mo 
/g rub2/10cale/en@heb rew . mo 
/g rub2/10cale/de@heb rew . mo 
/grub2/10ca1e/1t . mo 
/grub2/10ca1e/p1 . mo 
/g rub2/10ca1e 
/ g rub2 
. fc22 .x86 64 
/memtest86+-5.@1 
./vmlinuz @ rescue-7f9d@3c126f946368332c4ddec211acd 
108347kB 
[ root@localhost boot]# 
fedora 

* + 抓新版的 Fedora 實測 Linux Kernel Image 容量為
  + 4.13.16-200 7480kB
  + 4.11.8-300 7300kB

File Edit 
9kB 
13kB 
5kB 
13kB 
9kB 
5kB 
5kB 
41kB 
5kB 
5kB 
9kB 
9kB 
9kB 
2450kB 
16552kB 
3556kB 
189kB 
5kB 
5kB 
9kB 
7480kB 
7300kB 
View Search 
Terminal Help 
./grub2/i386- 
pc/ video_bochs . mod 
./grub2/i386- 
pc/gcry_rmd160. mod 
./grub2/i386- 
pc/sleep . mod 
./grub2/i386- 
pc/gfxterm.mod 
./grub2/i386- 
pc/jfs . mod 
./grub2/i386- 
pc/modinfo . sh 
./grub2/i386- 
pc/ reboot . mod 
./grub2/i386- 
pc/zfs . mod 
./grub2/i386- 
pc/memdisk.mod 
./grub2/i386- 
pc/usbserial_common . mod 
./grub2/i386- 
pc/cmp_test . mod 
./grub2/i386- 
pc/biosdisk.mod 
./grub2/i386- 
pc/exfat . mod 
./grub2/i386-pc 
. /grub2 
. /System. map 
-4.11.8-300.fc26.x86 64 
. /config-4.11.8-300. fc26. x86_64 
./.vmlinuz-4.11.8-300. fc26.x86 64. hmac 
./f3603cfae66044dda9d024b8fa5aéc6e/4.11.8-300. fc26.x86 64 
. /f3603cfae66044dda9d024b8fa5aec6e 
64 
./vm1inuz-4.11.8-300.fc26.x86 64 
'153248kB 
[gama@localhost boot]$ 

* Paging in Linux
  + Kernel 2.6 以前 使用 3 - level of page tables
  + Kernel 2.6 以後（包含）使用 4 -level of page tables
    - -single process was limited to 47bits of virtual address space (=128TB)
    - -Kernel只使用了實體位置內的46bits ＝ 64 TB
* [Code](http://fivelinesofcode.blogspot.tw/2014/03/how-to-translate-virtual-to-physical.html)