

Serial ATA si RAID sub Linux

SerialATA

- Prezentare
- Avantaje fata de ATA/IDE
- Suport sub Linux

RAID

- Prezentare
- Metode de implementare sub Linux

Serial ATA si RAID sub Linux

SerialATA

- Interfata seriala de transfer
- Comunicare punct cu punct bidirectionala
- Semnale diferite prin fire torsadate
- Cabluri mult mai subtiri, mufe mult mai mici
- Dezvoltat cu cerinte de modificare in mers (hot-plug)

Serial ATA si RAID sub Linux

SerialATA

	Serial ATA	IDE
Tip de comunicatie	Seriala	Paralela
Numar contacte	7	40
Numar fire	7	80
Voltaj pe cablu	0.125V	5V/3.3V
Frecventa atinsa	1500MHz	133MHz
Rata de transfer	150MB/s	133MB/s
Metoda de conectare	Punct-cu-punct	master/slave

Serial ATA si RAID sub Linux

SerialATA

Suport sub Linux:

- Emulare SCSI
- kernel 2.4.x:
 - Suport prin patch libata dezvoltat de Jeff Garzik
- kernel 2.6.x:
 - Suport nativ in kernel (libata este inclus in kernel)

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SerialATA

Linux Kernel v2.4.28-pre3 Configuration

SCSI low-level drivers

Arrow keys navigate the menu. <Enter> selects submenus --->.
Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes,
<M> modularizes features. Press <Esc><Esc> to exit, <?> for Help.
Legend: [*] built-in [] excluded <M> module < > module capable

+^(-)

| [] AMI MegaRAID2 support

| [*] Serial ATA (SATA) support

| [*] ServerWorks Frodo / Apple K2 SATA support (EXPERIMENTAL)

| [*] Intel PIIX/ICH SATA support

| [*] NVIDIA SATA support (EXPERIMENTAL)

| [*] Promise SATA TX2/TX4 support (EXPERIMENTAL)

| [*] Promise SATA S~~X~~4 support (EXPERIMENTAL)

| [*] Silicon Image SATA support (EXPERIMENTAL)

| [*] SiS 964/180 SATA support (EXPERIMENTAL)

| [*] VIA SATA support (EXPERIMENTAL)

| [*] Vitesse USC-7174 SATA support (EXPERIMENTAL)

+v(+)

<Select>

<Exit >

<Help >

Serial ATA si RAID sub Linux

RAID

- Redundand Array of Independend Disks
- Mai multe discuri hardware=1 disc software
- Diferite nivele
 - 0 (striping): $\Rightarrow N * D$
 - 1 (mirroring): $\Rightarrow D$
 - 4/5: $\Rightarrow (N-1) * D$
 - 6: $\Rightarrow (N-2) * D$

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RAID

Nivel	nr. discuri de risc	Viteza de citire	Viteza de scriere
0	0	$N * R_c$	$N * R_s$
1	$N - 1$	$N * R_c (1)$	R_s
4/5	1	$(N - 1) * R_c$	$(N - 1) * R_s$
6	2	Exp.	Exp.

Serial ATA si RAID sub Linux

RAID

Suport Linux:

- 3 variante:
 - Hardware RAID
 - Software RAID
 - Configurat de Linux
 - Specificat de producator

Serial ATA si RAID sub Linux

RAID

RAID configurat de linux

- Suporta nivelele
0,1,4,5,01
- Recomandat sistemelor
“pure” linux
- Configurate prin
“/etc/raidtab”

```
raiddev /dev/md0
raid-level          0
nr-raid-disks      2
persistent-superblock 0
chunk-size         8
```

```
device /dev/hda1
raid-disk 0
device /dev/hdb1
raid-disk 1
```

```
raiddev /dev/md1
raid-level          1
nr-raid-disks      2
persistent-superblock 0
```

```
device /dev/sda1
raid-disk 0
device /dev/sdb1
raid-disk 1
```

Serial ATA si RAID sub Linux

RAID

RAID software implementat de producator

- Suport scazut de la producatori si kernel
- Recomandat pe sisteme Windows/Linux
- Modulul folosit detecteaza automat configuratia

Serial ATA si RAID sub Linux

RAID

Suport in caz de erori:

- RAID hardware: rezolvat de cip, transparent
- RAID software (linux): pachetul raidtools
- RAID software (prod.): nu exista/programe separate