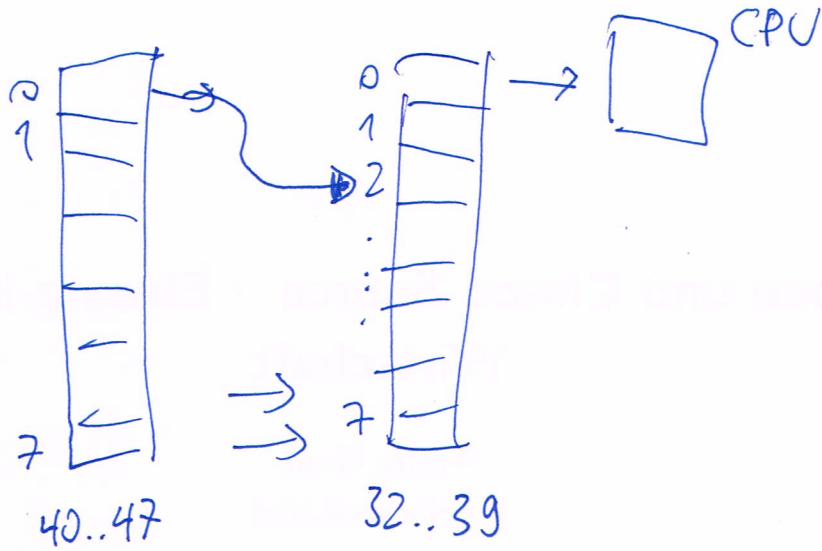
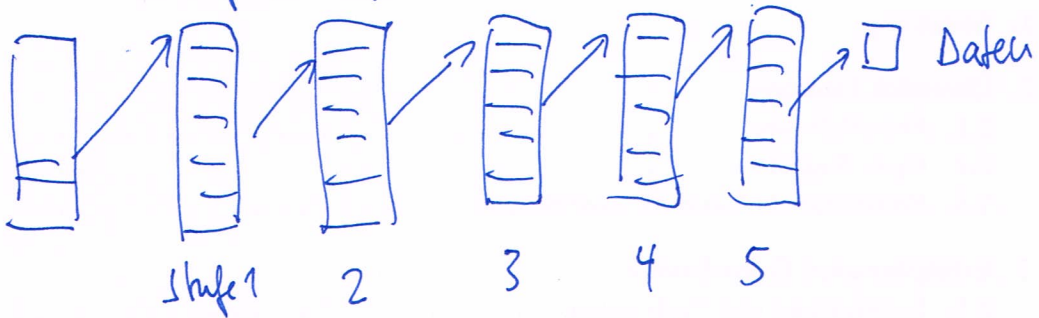
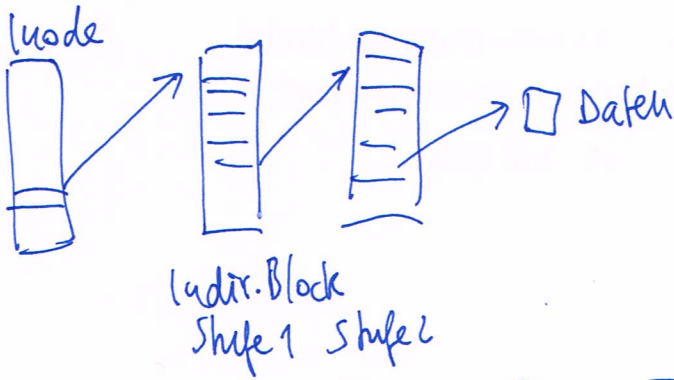


32)



GdRS
 1. Gruppe, 1/2
 12.06.21

35)



1000 Blocknummern $\rightarrow 1000^3 \times$ so groß
 10^9

36

Dateisystemgröße 40 GB

Datenblockgröße 4 KB

Indirektion: 2x

Node: 5x direkt

2x 1-fach ind.

2x 2-fach ind.

$$\begin{aligned} 1 \text{ K} &= 2^{10} \\ 1 \text{ M} &= 2^{20} \\ 1 \text{ G} &= 2^{30} \\ 1 \text{ T} &= 2^{40} \end{aligned}$$

GoldBS

1. Gruppe (2/2)

$$\text{Größe einer Block-Nr.: } \frac{40 \text{ GB}}{4 \text{ KB}} = \frac{40 \cdot 2^{30} \text{ B}}{4 \cdot 2^{10} \text{ B}} = 10 \cdot 2^{20} < 2^{24}$$

⇒ 24 Bit pro Blockadresse reichen

aufzurunden ⇒ 32 Bit (= 4 Byte) pro Block-Nr.

$$\# \text{ Blocknr. pro Block} = \frac{4 \text{ KB}}{4 \text{ B}} = 1024 = 2^{10}$$

$$\text{Max. Dateigröße} = \# \text{ Blocknr.} \cdot \text{Blockgröße}$$

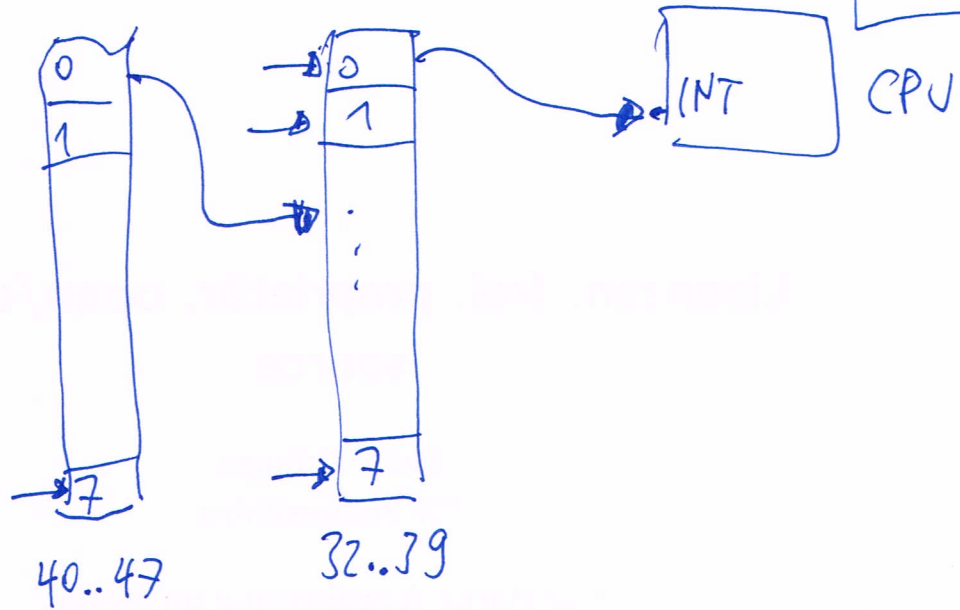
$$= (5 + 2 \cdot 2^{10} + 2 \cdot 2^{10} \cdot 2^{10}) \cdot 4 \text{ KB}$$

$$= (5 + 2^{11} + 2^{21}) \cdot 4 \text{ KB}$$

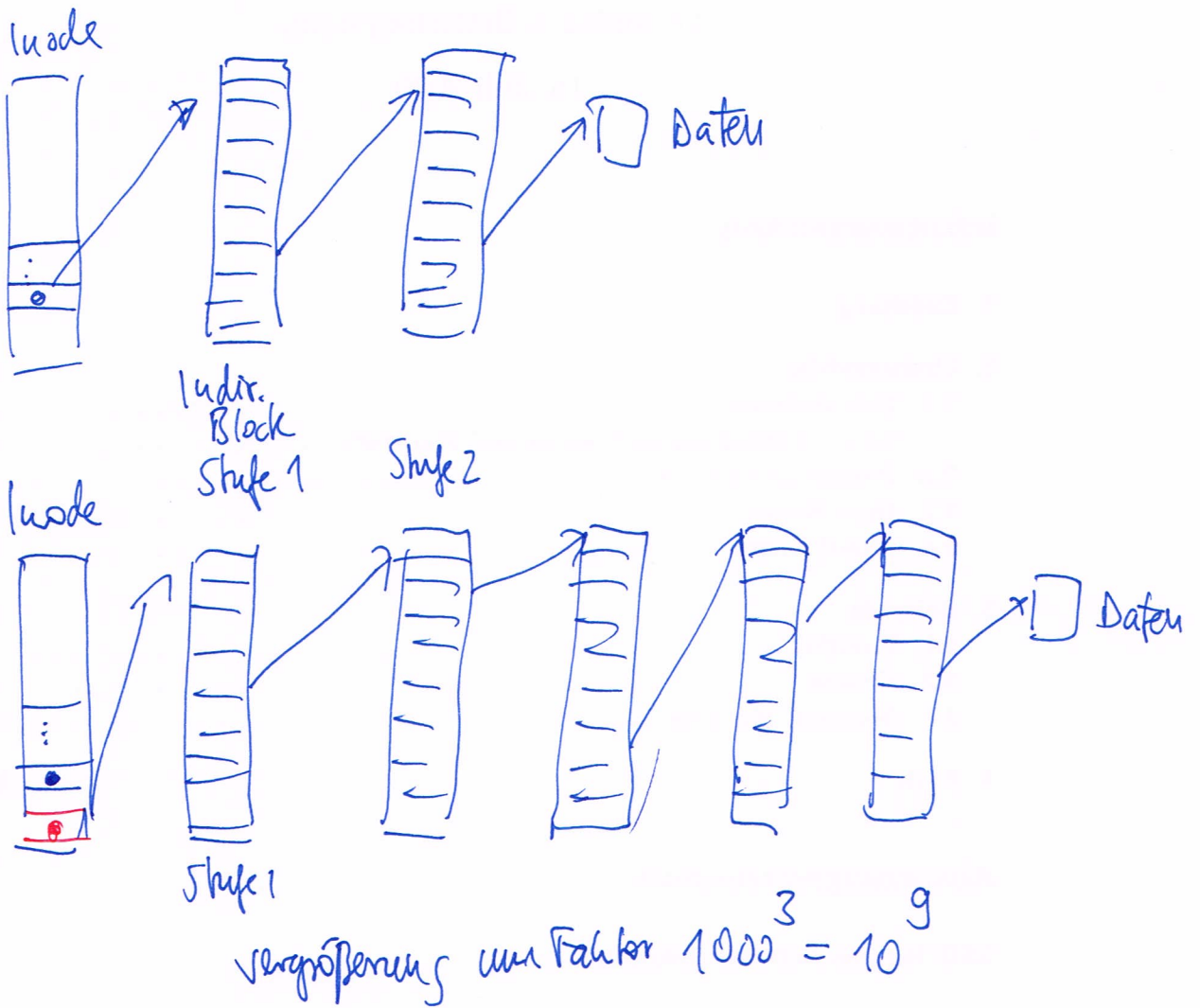
$$2^{12} \text{ B} \geq 2^{33} \text{ B} = 8 \text{ GB}$$

32

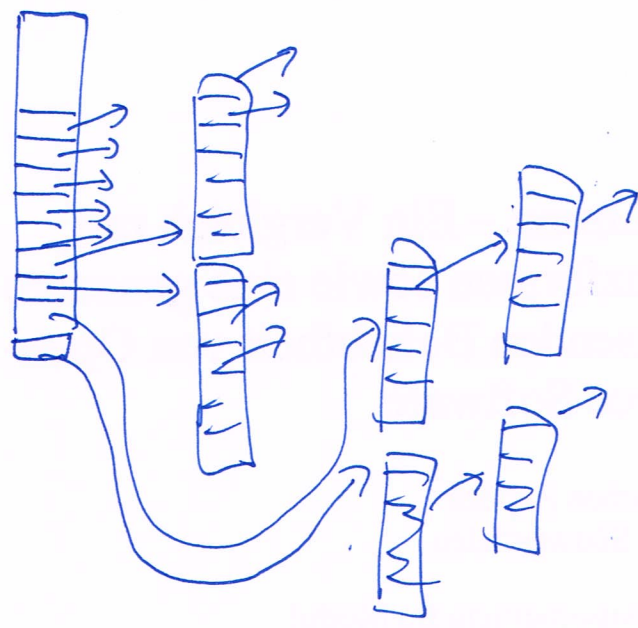
2. Gruppe 1/2



35



36]



$$\frac{40 \text{ GB}}{4 \text{ KB}} = 10 \text{ M} = 10 \cdot 2^{20}$$

$$\begin{aligned} \text{KB} &= 2^{10} \text{ B} \\ \text{MB} &= 2^{20} \text{ B} \\ \text{GB} &= 2^{30} \text{ B} \\ \text{TB} &= 2^{40} \text{ B} \end{aligned}$$

2. Gruppe
2/2

$$\begin{aligned} \frac{40 \text{ GB}}{4 \text{ KB}} &= \frac{40 \cdot 2^{30} \text{ B}}{4 \cdot 2^{10} \text{ B}} = 10 \cdot 2^{20} \\ &\leq 16 \cdot 2^{20} = 2^{24} \end{aligned}$$

24 Bit pro Block-Nr. nötig.
 ⇒ aufrunden auf 32 Bit (4 Byte)

$$4 \text{ KB} / 4 \text{ B} = 1024 = 2^{10} \text{ Block-Nr. pro Block}$$

$$\begin{aligned} &(\# \text{ Blocknummern}) \cdot \text{Blockgröße} \\ &= (5 + 2 \cdot 2^{10} + 2 \cdot 2^{20}) \cdot 4 \text{ KB} \\ &= (5 + 2^{11} + 2^{21}) \cdot 2^{12} \text{ B} = (5 \cdot 2^{12} + 2^{23} + 2^{33}) \text{ B} \\ &\geq 2^{33} \text{ B} = 8 \text{ GB} \end{aligned}$$