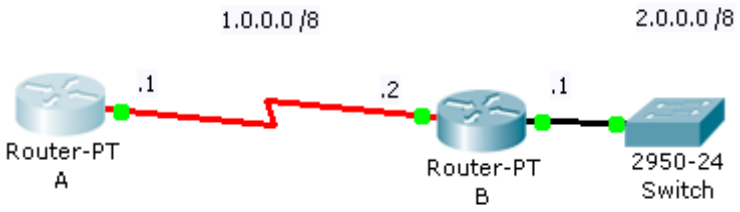
Metrik

Ganzzahliges Maß für die Güte einer Route. Je **größer** die Metrik, umso **schlechter** die Route.




```
A#show interfaces S 2/0
Serial2/0 is up, line protocol is up (connected)
  Hardware is HD64570
  Internet address is 1.0.0.1/8
  MTU 1500 bytes, BW 4000 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255

B#show interfaces Fa0/0
FastEthernet0/0 is up, line protocol is up (connected)
  Hardware is Lance, address is 00e0.8f4b.e169 (bia 00e0.8f4b.e169)
  Internet address is 2.0.0.1/8
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
     reliability 255/255, txload 1/255, rxload 1/255
```

RIP

Metrik einer Route = Hop-Count (Zahl der Router, die bis ins Zielnetz übersprungen werden müssen)

Beispiel:

```
R    2.0.0.0/8 [120/1] via 1.0.0.2, 00:00:09, Serial2/0
```

OSPF

Kosten eines Netzes = 10^8 bps / bandwidth

Metrik einer Route = Summe der Kosten aller Netze der Route (incl. Zielnetz)

Beispiel:

$$\text{Metrik} = \frac{10^8 \text{bps}}{4000 \text{kbps}} + \frac{10^8 \text{bps}}{100000 \text{kbps}} = 25 + 1 = 26$$

```
O    2.0.0.0/8 [110/26] via 1.0.0.2, 00:01:14, Serial2/0
```

EIGRP

Metric = 256 * ([K_1 * Bw + K_2 * Bw / (256 - Load) + K_3 * Delay] * [K_5 / (Reliability + K_4)])

Standardwerte: K_1 = 1, K_2 = 0, K_3 = 1, K_4 = 0, K_5 = 0, letzter Faktor fällt weg, falls 0

=> Metric = 256 * [Bw + Delay]

$$\text{Metrik} = 256 * \left(\frac{10^{10} \text{ bps}}{\text{Bw}} + \frac{\text{Delay}}{10^{-5} \text{ s}} \right)$$

Bw = kleinste Bandbreite aller Netze der Route, Delay = Summe der Delays aller Netze der Route (incl. Zielnetz)

Beispiel:

$$\text{Metrik} = 256 * \left(\frac{10^{10} \text{bps}}{4000 \text{kbps}} + \frac{20000 \mu\text{s} + 100 \mu\text{s}}{10 \mu\text{s}} \right) = 256 * (2500 + 2010) = 1154560$$

```
D    2.0.0.0/8 [90/1154560] via 1.0.0.2, 00:00:13, Serial2/0
```