

Routerkonfiguration: OSPF (Open Shortest Path First)

Grundkonfiguration

OSPFv2 für IPv4

```
Router(config)# router ospf 10                                Process-ID: 1-65535
Router(config-router)# router-id 1.2.3.4
Router(config-router)# network 1.0.0.0 0.0.0.3 area 0          Netz Wildcard
oder
Router(config-if)# ip ospf 10 area 0                          Schnittstelle statt network-Befehl
```

OSPFv3 für IPv6

```
Router(config)# ipv6 unicast-routing                          IPv6-Routing aktivieren
Router(config)# ipv6 router ospf 10                           OSPFv3 aktivieren
Router(config-rtr)# router-id 1.2.3.4

Router(config-if)# ipv6 ospf 10 area 0                        Schnittstelle aktivieren statt network-Befehl
```

Troubleshooting

| | |
|--------------------------------------|--|
| Router# show ip protocols | Router# show ipv6 protocols |
| Router# show ip route ospf | Router# show ipv6 route ospf |
| Router# show ip ospf | Router# show ipv6 ospf |
| Router# show ip ospf neighbor | Router# show ipv6 ospf neighbor |
| Router# show ip ospf interface | Router# show ipv6 ospf interface |
| Router# show ip ospf interface brief | Router# show ipv6 ospf interface brief |
| Router# clear ip ospf process | Router# clear ipv6 ospf process |

Metrik

Die Metrik einer Route ist die Summe der Kosten (cost) aller Netze der Route (incl. Zielnetz).

Kosten eines Netzes

$$\text{cost} = \frac{(\text{auto-cost reference-bandwidth}) * \text{Mbit/s}}{\text{Bandbreite}}$$

Ändern der Referenzbandbreite (auf allen Routern gleich!)

```
Router(config-router)# auto-cost reference-bandwidth 1000    default=100, → 100Mbit/s = 1
bzw.
Router(config-rtr)# auto-cost reference-bandwidth 1000
```

Bandbreite einer Schnittstelle

```
Router(config-if)# bandwidth 1000000    kbit/s
```

Senden von Updates unterbinden

```
Router(config-router)# passive-interface G0/0
bzw.
Router(config-rtr)# passive-interface G0/0
```

Default-Route weiterleiten

```
Router(config-router)# default-information originate  
bzw.  
Router(config-rtr)# default-information originate
```

DR/BDR in Multiaccess-Netzen

```
Router(config-if)# ip ospf priority 255    0-255, je höher, desto DR  
Router(config-if)# ipv6 ospf priority 255
```

DR/BDR-Wahl deaktivieren

```
Router(config-if)# ip ospf network point-to-point  
Router(config-if)# ipv6 ospf network point-to-point
```

Timer

```
Router(config-if)# ip ospf hello-interval 5  
Router(config-if)# ip ospf dead-interval 20  
bzw.  
Router(config-if)# ipv6 ospf hello-interval 5  
Router(config-if)# ipv6 ospf dead-interval 20
```

Authentication

```
Router(config-if)# ip ospf authentication message-digest  
Router(config-if)# ip ospf message-digest-key 1 md5 PASSWORT  
oder  
Router(config-router)# area 0 authentication message-digest  
Router(config-if)# ip ospf message-digest-key 1 md5 PASSWORT
```