Open Shortest Path First (OSPF)
- Link State
- IP packets
- Security
- multiple same cost paths
Hierarchical OSPF

- Backbone
- Area 1
- Area 2
- Area 3

Boundary Routers

Area Border Routers
Border Gateway Protocol (BGP)

- inter AS
- each AS has a number 16 bit up to 2007
  now 32 bit

- advertise: "I'm here"
- peers communicate via TCP connection
- send paths

**AS 3 subnets**
- 128.16.68/24
- 128.16.69/24
- 128.16.70/24
- 128.16.71/24

```
1000 0000 . 0001 0000 . 0100 0100 . 01000101
01000110
01000111
```

advertise 128.16.68/22
route:
prefix:
attributes:
AS-PATH - list of AS #s
NEXT-HOP: IP addr. of router at start of path
Stubs all traffic either originated or ends at AS