DSL modem

NAT

192.168.1.1
DNS: 192.168.1.1

NAT

192.168.1.x ...
DNS: 192.168.x.1
IPv6

128 bit addr.

- Fixed length headers (40 bytes)
  - source/dest addr.
  - version
  - next header - (upper level proto.)
  - data length
  - hop limit (#1)
  - no checksum
Routing Algorithms

- Global v. Decentralized
  - all routers know the network topology, connections, costs
  - each router has info. about neighbors

Static v. Dynamic
Link State Routing (Dijkstra's shortest path)

Global Static

cost

\[ c(x,y) \]

Routing Table for A

<table>
<thead>
<tr>
<th>Dest</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>(A,B)</td>
</tr>
<tr>
<td>C</td>
<td>(A,D)</td>
</tr>
<tr>
<td>D</td>
<td>(A,D)</td>
</tr>
<tr>
<td>E</td>
<td>(A,D)</td>
</tr>
</tbody>
</table>

\[
\sum_{i=1}^{n} i = \frac{n(n+1)}{2}
\]

\[ O(n^2) \]
Distance Vector Alg.
Each node knows
- neighbors
- links
  \text{transmit to neighbors}