

Purpose
 Interface
 Reliable data-delivery
 WAN best-effort [Interdomain]
 LAN best-effort packet delivery [Intra-]
 Physical transfer of bits

★ max hosts = add

Assets - 2 [0 & 25% reserve]

Gao - Renford

<u>Export</u>	<u>Import</u>
→ What to advertise	→ What to use
→ Controls who enters	→ Controls how leaves
• Export customer to all	• Choose customer
• Export peer/provider to customers	→ peer → provider

customer

peer

provider

- Fields:
 - Version (4b) = 4 = IPv4, 6 = ...
 - Header length (4b): IP options, ~5 words
 - Type of Service (8b): Enable special treatment
 - Data gram Length (16b): # bytes in packet
max of $2^{16}-1$
 - Identifier (16b): recognize group of Frag.
 - Flags (3b): Reserved, Don't Frag., More ↓
 - Frag. offset (13b): 8-byte unit offset
 - TTL (8b): Avoids loops, decrement each hop
 - (Upper-Layer) Protocol (8b): L4 [6=TCP, 17=UDP]
 - Header checksum (16b):
 - Source IP (32b): Sender of Packet
 - Destination IP (32b):
 - Options + # specified in header!
 - Options: ~ [Payload: ~]

.....

• CIDR: a.b.c.0/23 $\rightarrow 2^{23}$ network
 $2^{23-1} = 2^{22} = 2^9$ addresses
 \rightarrow Scaled & # internal hosts + # external routes
 * wrt IPv4, net v6
 max hosts = addresses - 2 [0 & 255 reserved]

<p>→ Hot - ports → assign. ports</p>	<p>border ports to 2+ different ASes</p>
<p>a Priori, to lowest</p> <ul style="list-style-type: none"> • Local 	<ul style="list-style-type: none"> • Priority, to lowest • New Local

$$\begin{array}{r} 1480 \\ 0:0 \end{array} \quad \begin{array}{r} 1200 \\ 0: \frac{1480}{8} \end{array} \quad \begin{array}{r} 1300 \\ 0: \frac{2480}{8} \end{array} \quad \begin{array}{r} 80 \\ 0: \end{array}$$