

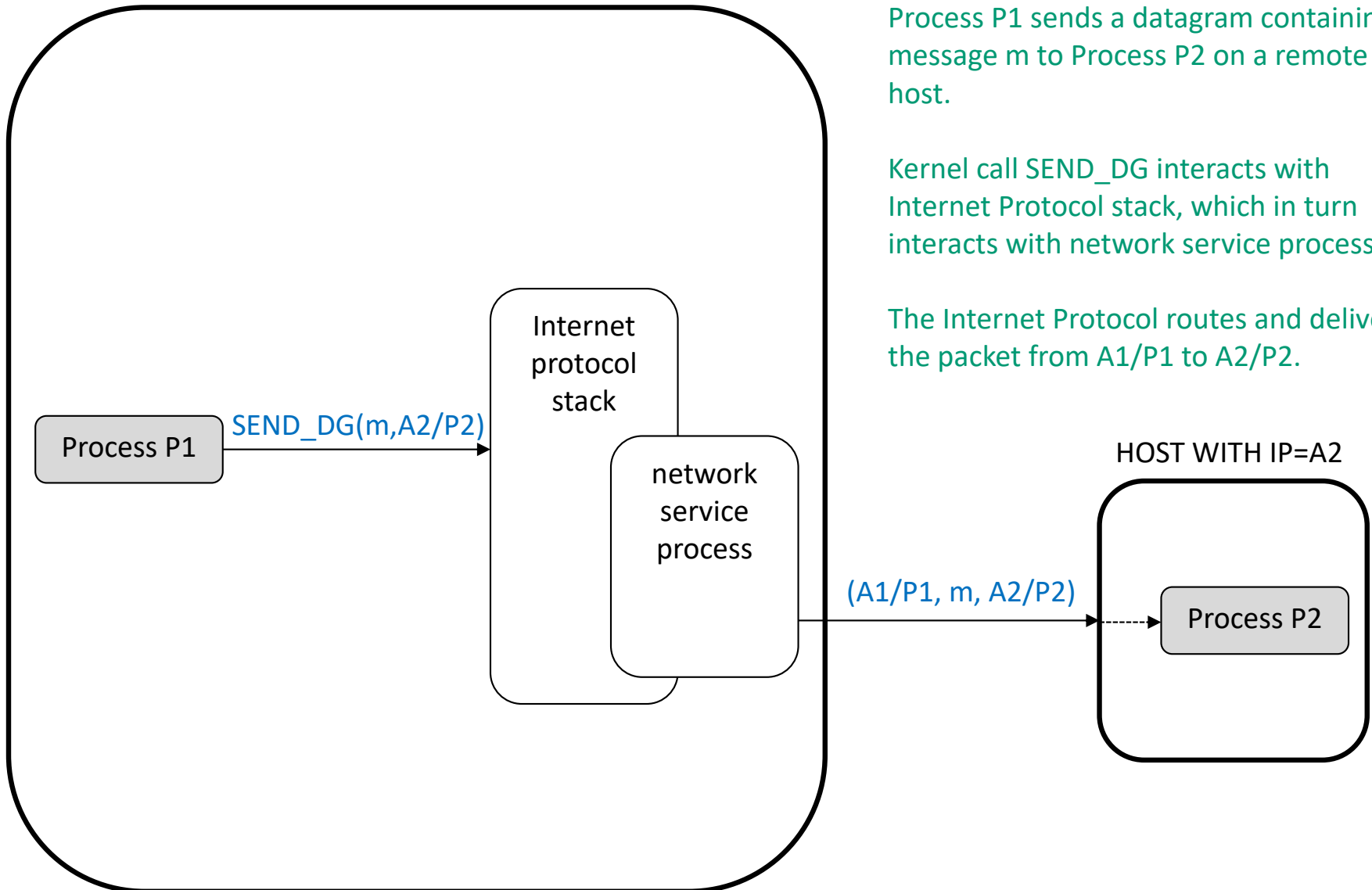
Internet Model

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The Internet Datagram

- The Internet datagram is universally available to send a message from one host to another in the Internet
- Datagram is a single packet containing a message sent to a remote host
 - If datagram received, remote host acts on message and responds with another datagram
 - If either datagram is lost, timers in the protocol can resend
 - Recipients must watch for duplicate datagrams

HOST WITH IP=A1

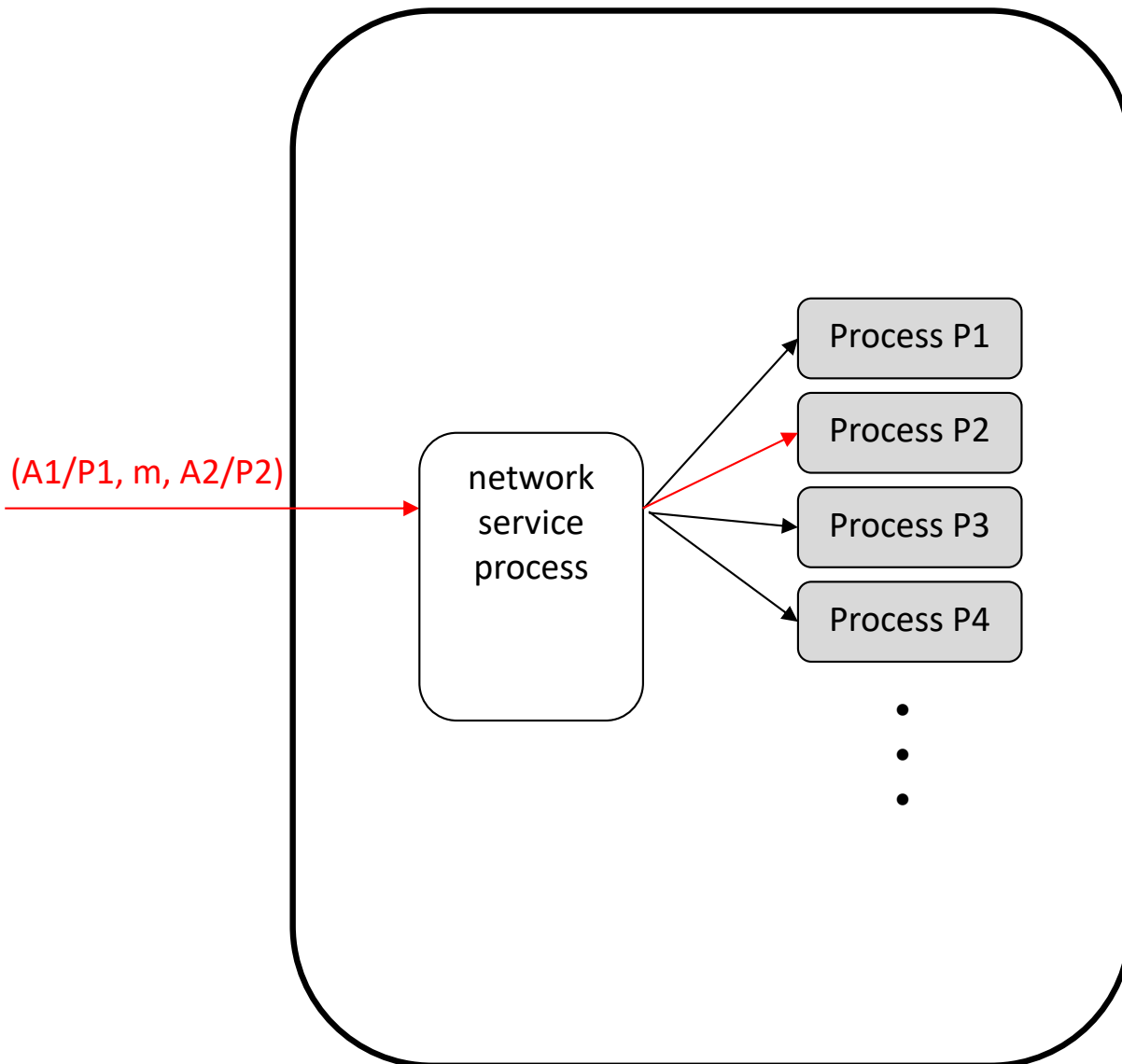


Process P1 sends a datagram containing message m to Process P2 on a remote host.

Kernel call `SEND_DG` interacts with Internet Protocol stack, which in turn interacts with network service process.

The Internet Protocol routes and delivers the packet from $A1/P1$ to $A2/P2$.

HOST WITH IP=A2



All incoming packets are delivered to the host's network service process. The service process routes the packet to the input queue of the service process P2 named in the packet. In other words, the protocol's port number is equivalent to a service process connected to that port.

When P2 has finished responding to the message m from A1/P1, it sends a return packet (A2/P2, r, A1/P1) containing its response r. The return packet is received by the network service process on A1 and delivered to the input queue of P1.

Some Details

- Sender maintains timer that triggers resending a packet if no acknowledgement comes back in a reasonable time
- Receivers monitor for duplicate packets in case the original packet was delivered late
- IP protocol uses name servers to get host addresses and port numbers of services the host offers
- Consult your networking class for more details