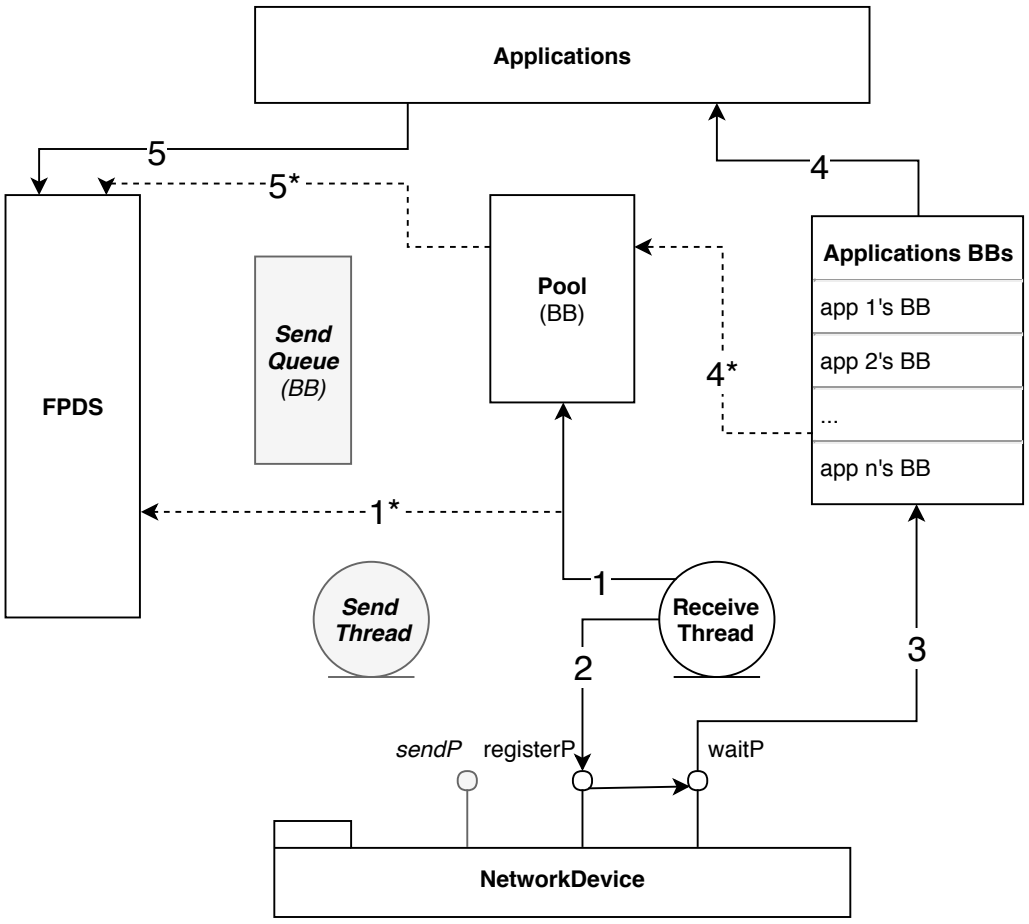
Application receiving packet from the network



*BB stands for Bounded Buffer

*FPDS stands for FreePacketDescriptorStore

*Send Queue is implemented with a Bounded Buffer (not a queue)

Application is any of the applications with PID 0-10 during the execution of the simulated network

1. The receive thread nonblocking gets a PacketDescriptor from the pool

    1*. If it cannot get a PD from the pool instantly, it blocking gets one from the FPDS

2. Receive thread registers the packet with the device, and then waits on a packet to arrive

3. Once a packet has arrived, the thread uses the PID field in the PacketDescriptor to find the appropriate application BB for storage

    * If there are no available packets in the pool or FPDS, the thread will reuse the current packet for the next iteration instead of putting it into an application BB

4. An application calls either blocking or non-blocking get with their PID, which looks inside their appropriate BB and returns a PacketDescriptor (or in the case of non-blocking, a return value of 0 or 1)

    4*. If the packet fails to go into an application BB, put it back into the pool

5. The application returns the packet to the FPDS after getting the data

    5*. If the packet fails to go into the pool, it is returned to the FPDS