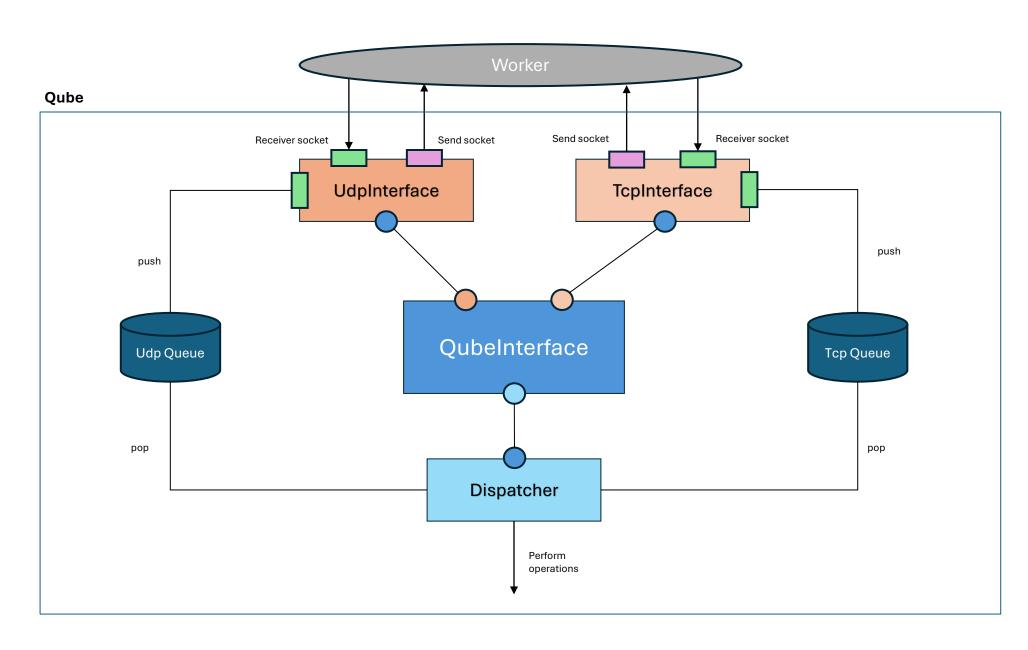
Qube Interface Structure



Qube Manager State Machine Load the configuration file given as input, creates the UDP and TCP communication interface and the dispatcher It depends if the Qube is a through the QubeInterface manager or a worker. In case of Launch the manager waits for JOB executable REQUESTS from a client and INIT There are performs JOB POSTING on If discover flag is available workers available workers. In case of disabled by conf worker, performs the jobs and and Qube is ready sends back results. If discover flag is enabled by conf and Qube is ready **OPERATIVE** No more available workers **SHUTDOWN** Searching for active workers Every X Min number of **DISCOVERING** seconds active workers Report discovered Metrics Given the subnet address and subnet mask discover active Qube workers in the subnet. Check if workers are still active, **SHUTDOWN** performs general diagnostic on MAINTENANCE the system, in particular for communication interfaces, log metrics and so on ... **SHUTDOWN**

Discover Protocol

- The Discover Protocol is used by the Qube Manager during the Discover State to search active Qube Worker in a subnet
- It consists of a "two-handshake" protocol:
 - 1. The Qube Manager sends to each address of the subnet a DISCOVER HELLO message
 - 2. A Qube worker, if active, response with a DISCOVER RESPONSE message (containing some useful information)
 - 3. When the Qube Manager has reached the maximum number of nodes the protocol ends
- DISCOVER HELLO and DISCOVER RESPONSE are both UDP Messages
- The Qube Manager enters this protocol whenever the total number of active worker is below a threshold

