Distributed Systems

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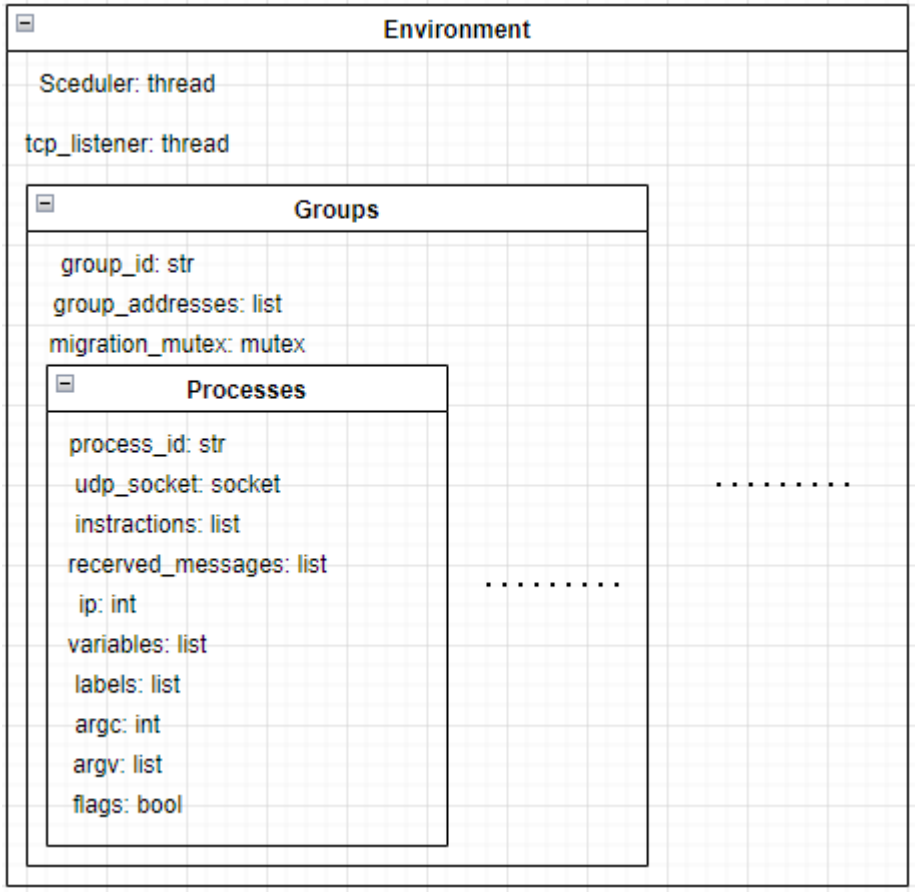
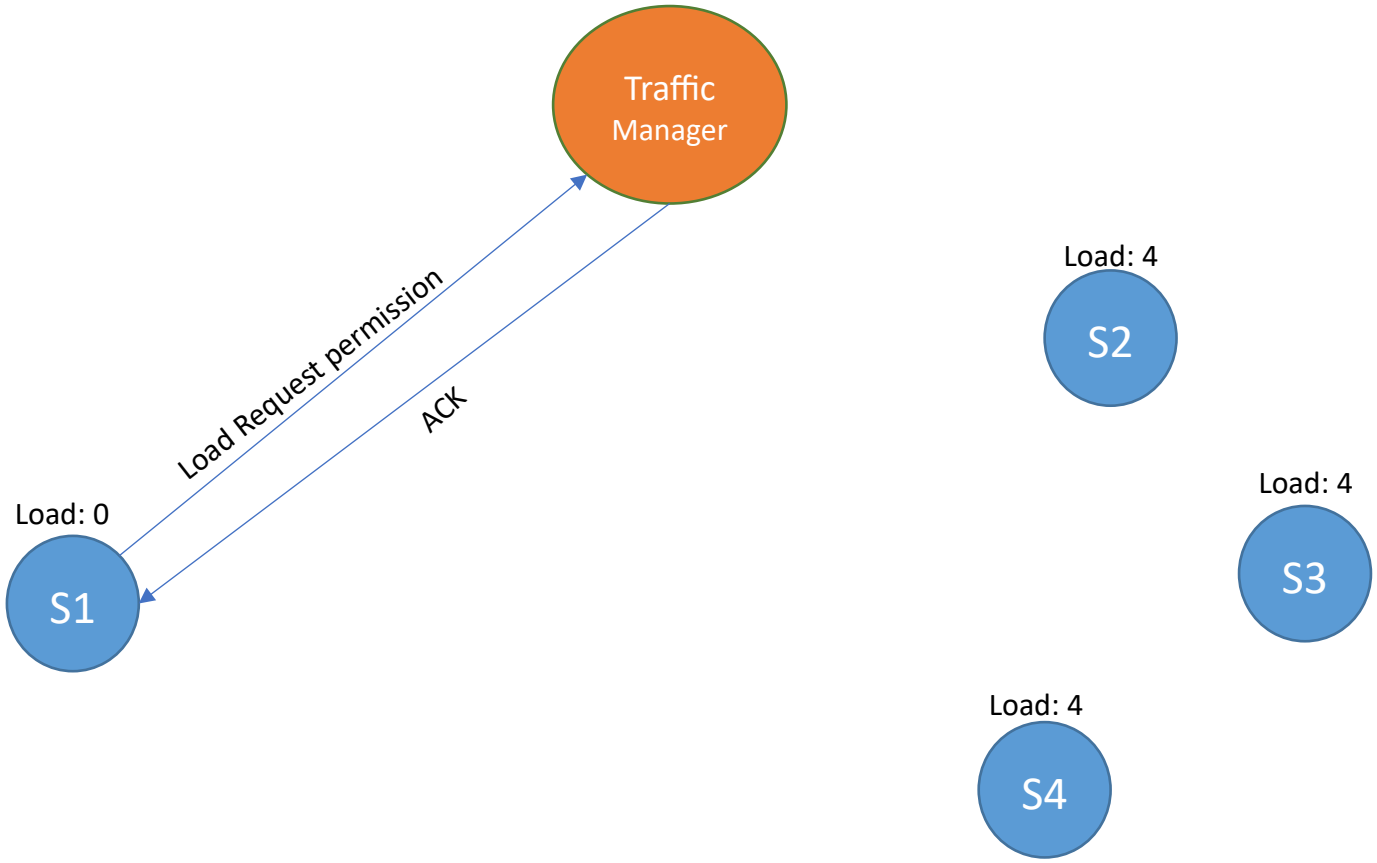
DEPARTMENT OF ELECTRICAL
& COMPUTER ENGINEERING

Files of the API

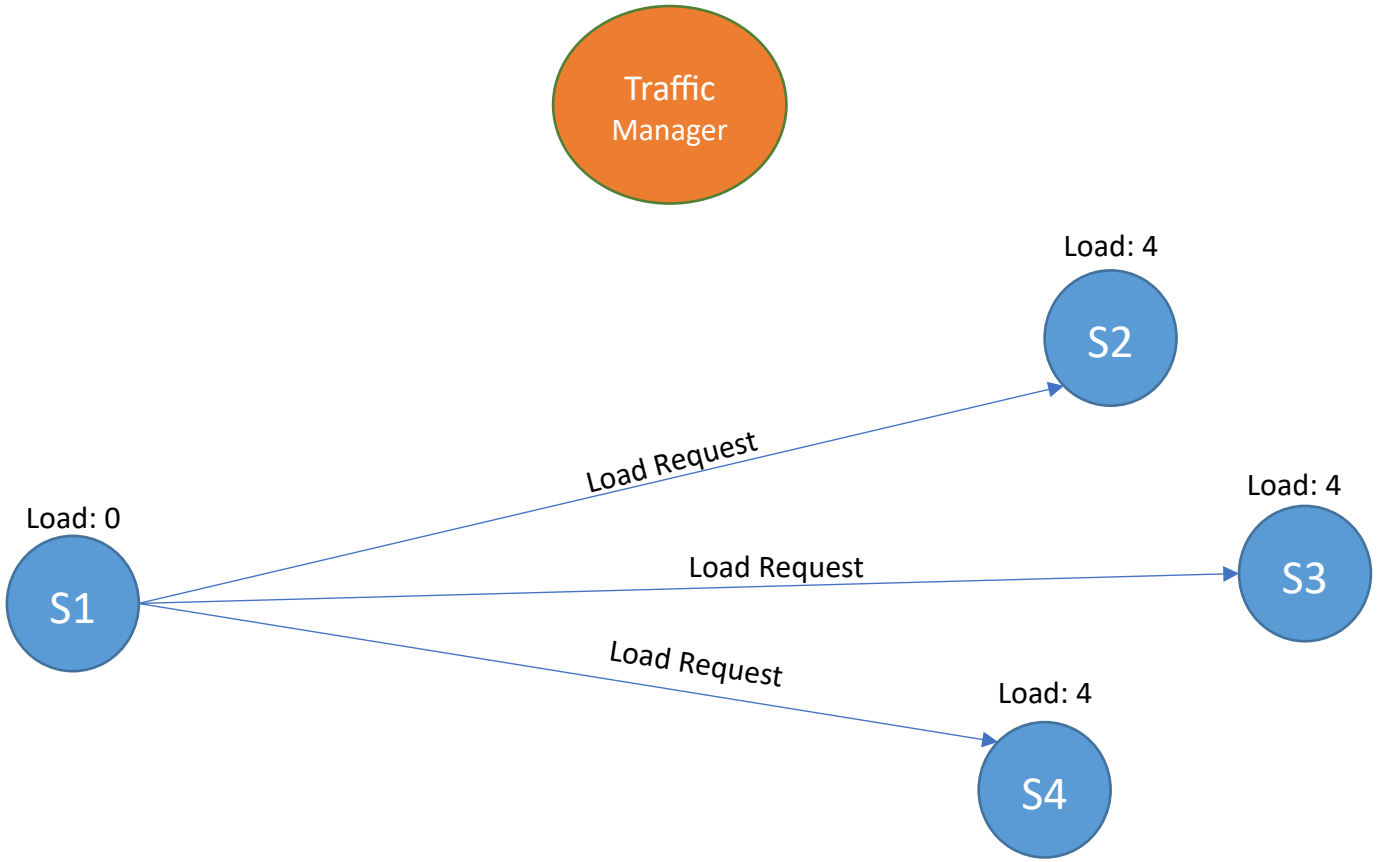


SCENARIO 1
(JOIN)

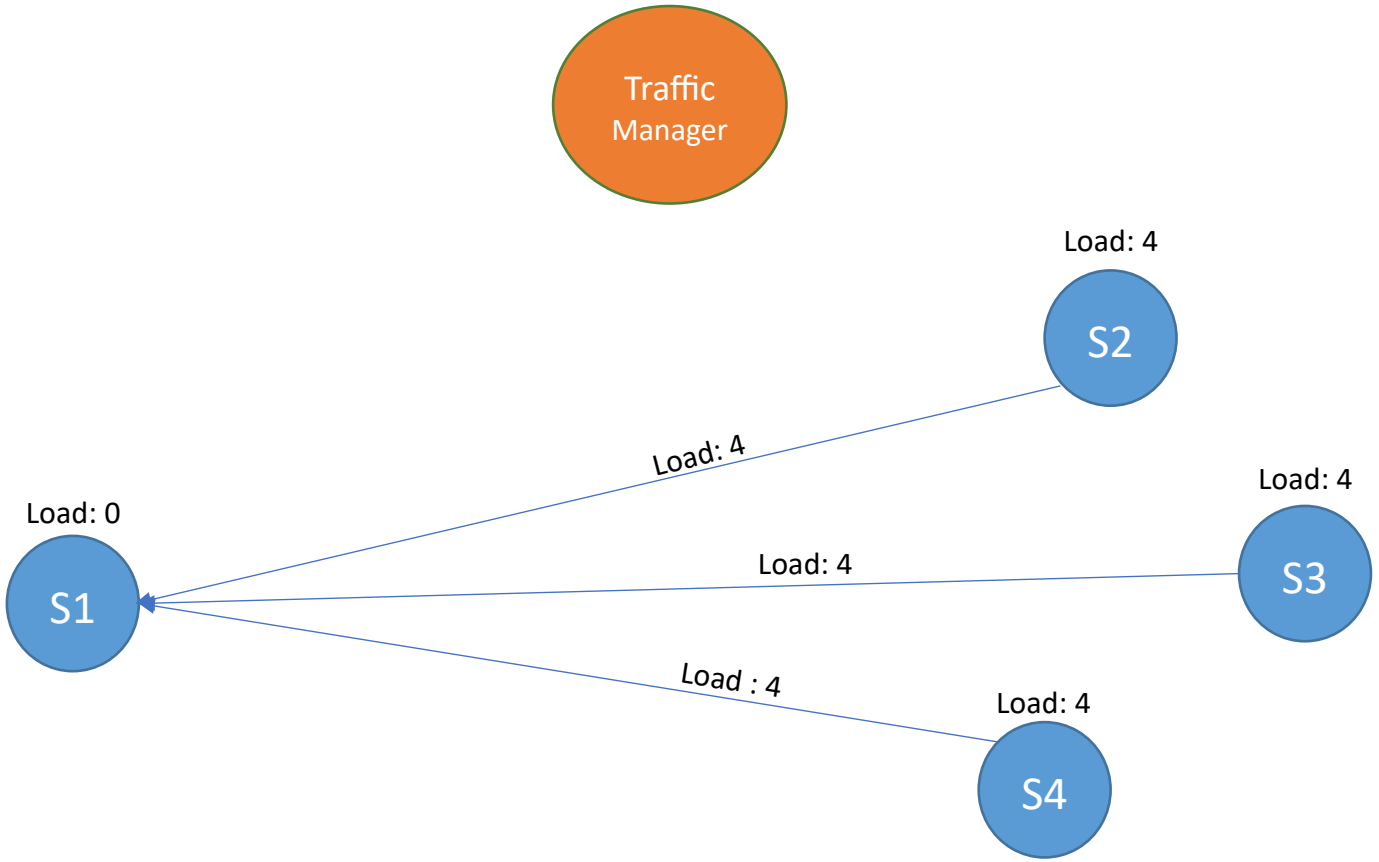
Join new Server



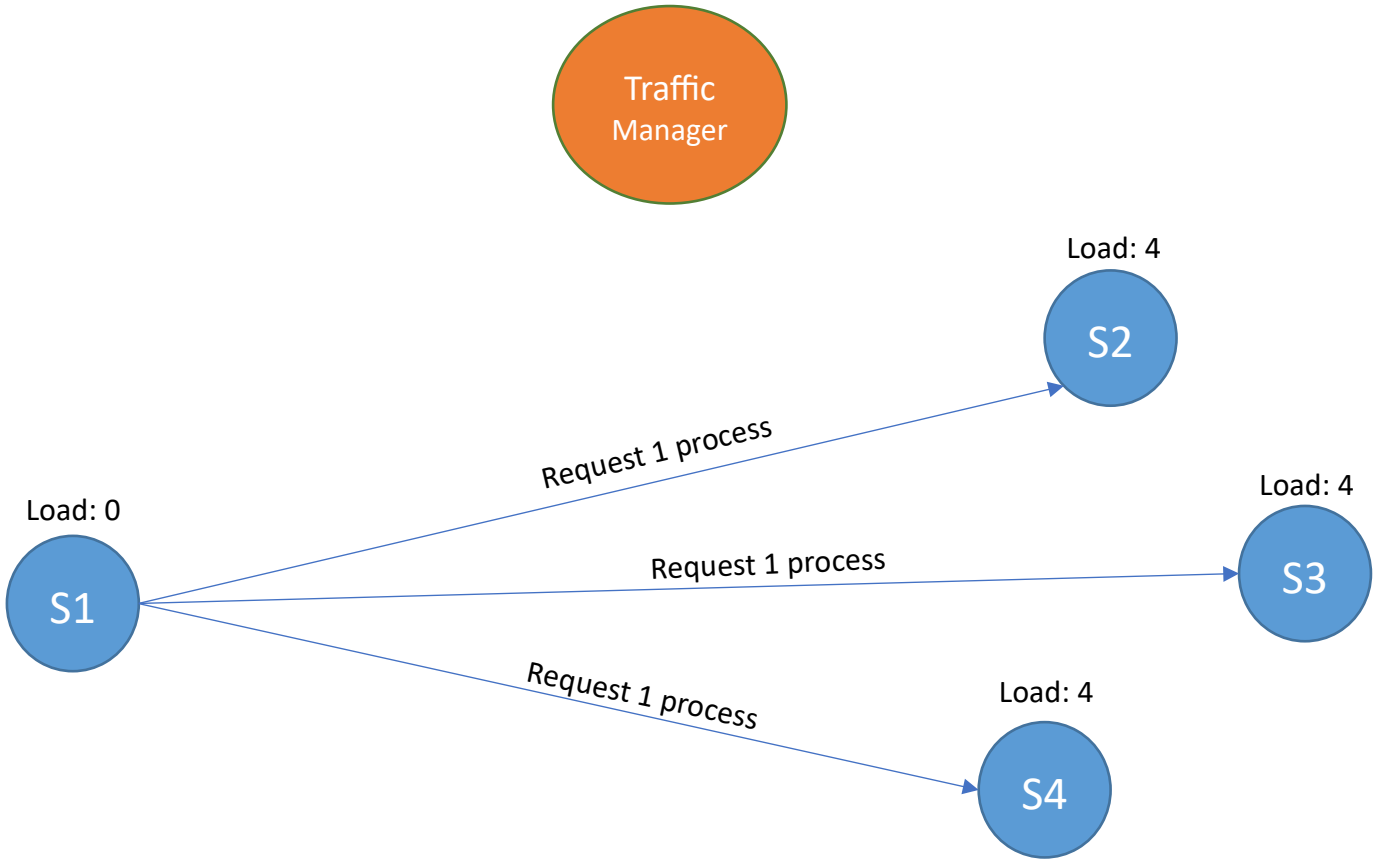
Join new Server



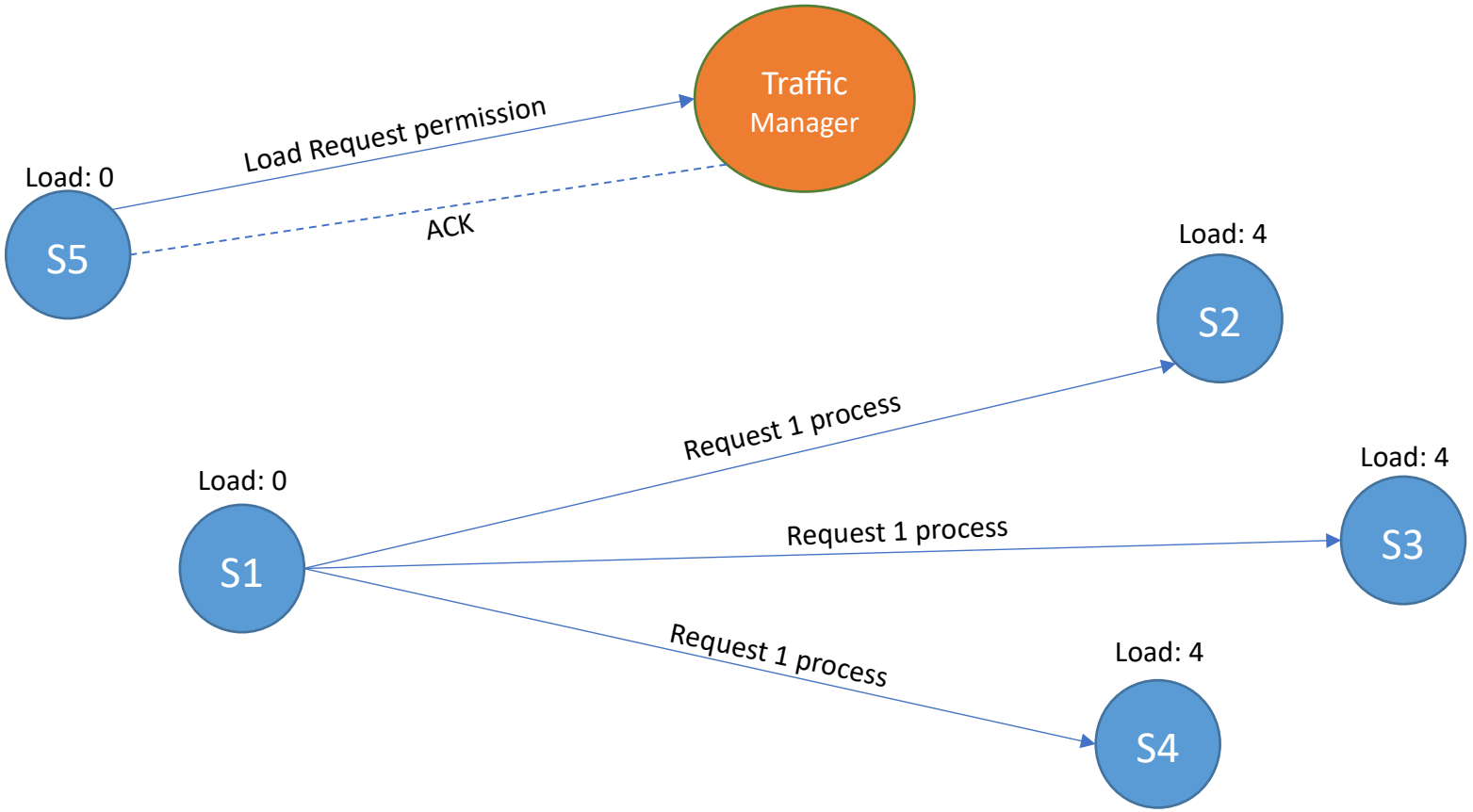
Join new Server



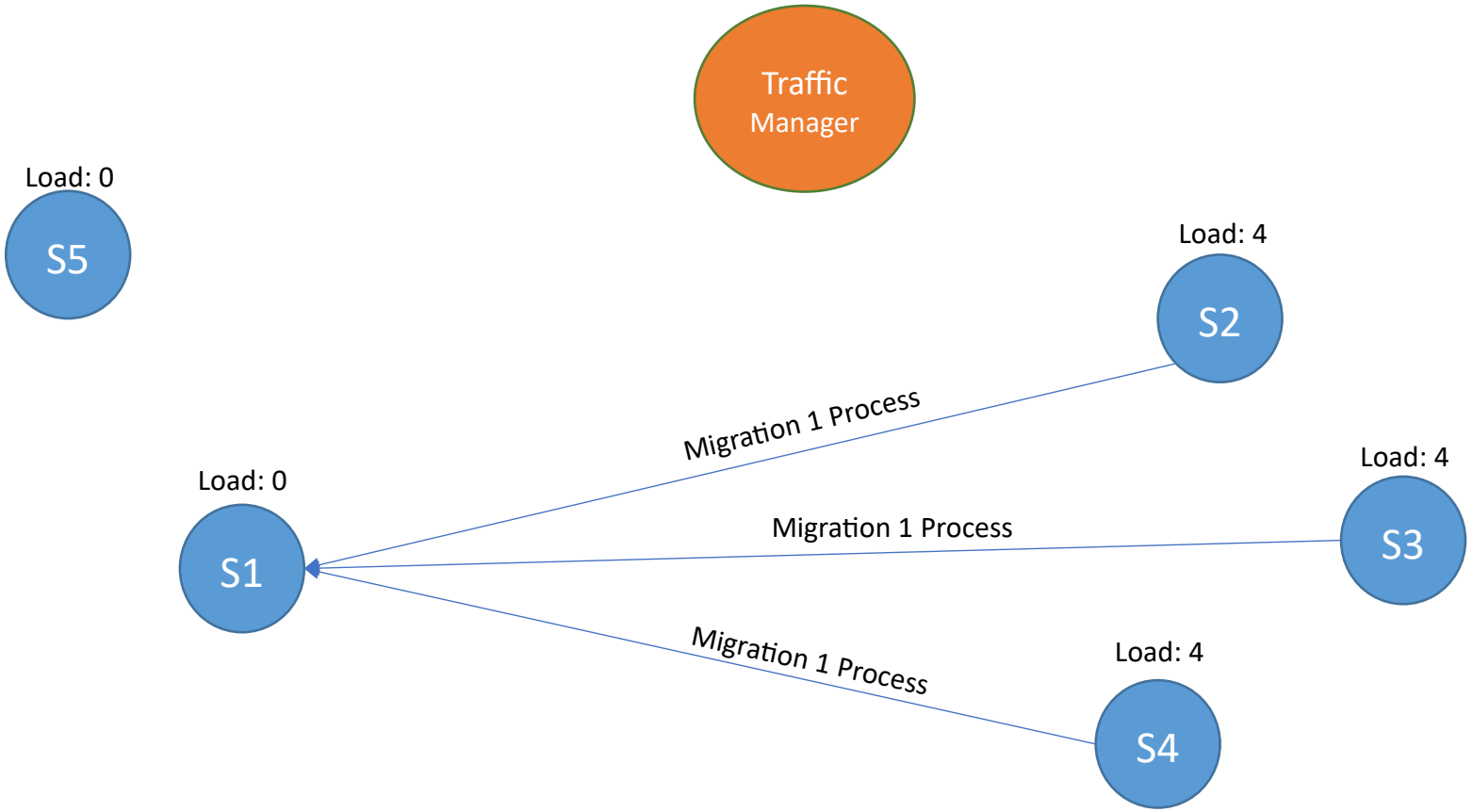
Join new Server



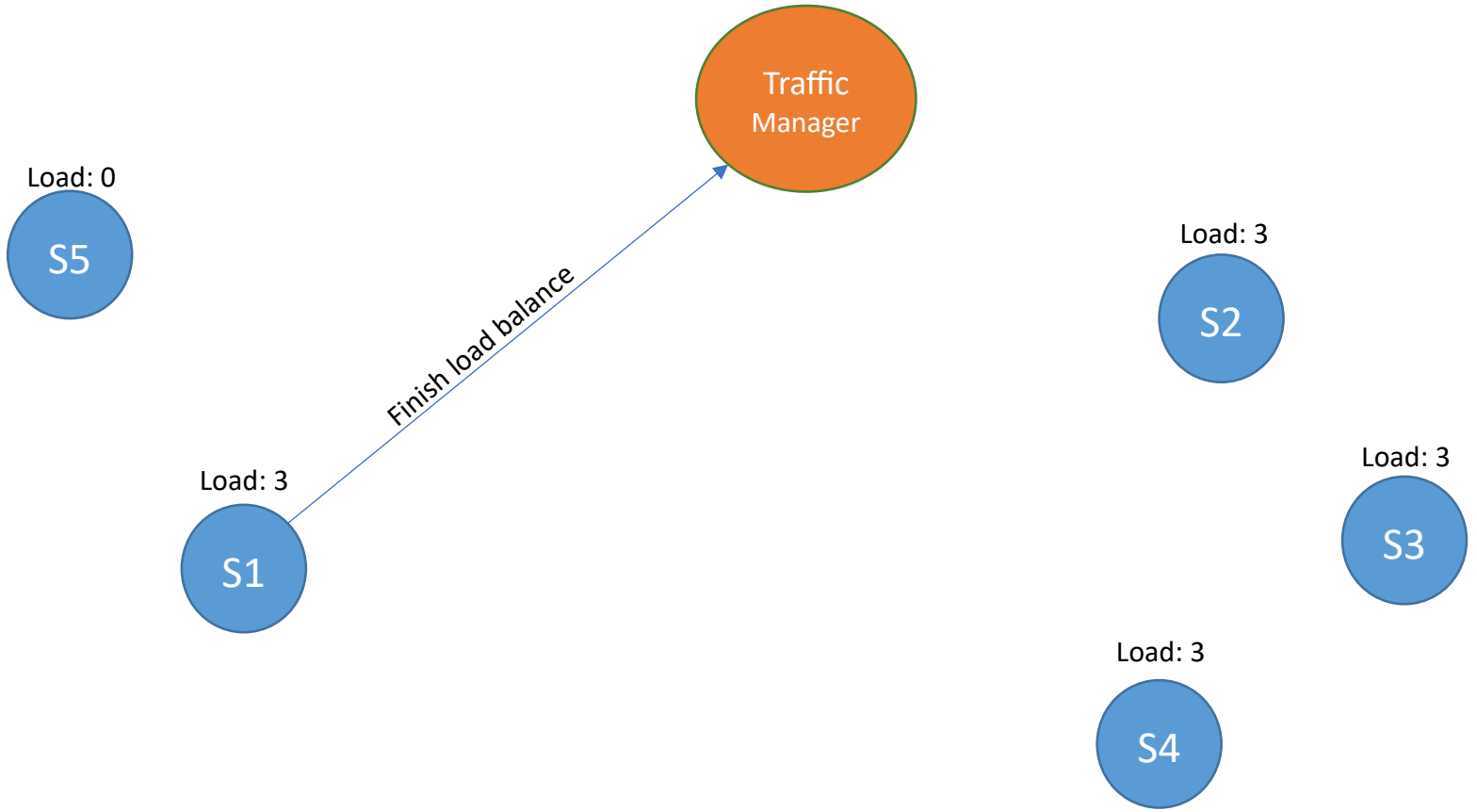
Join new Server



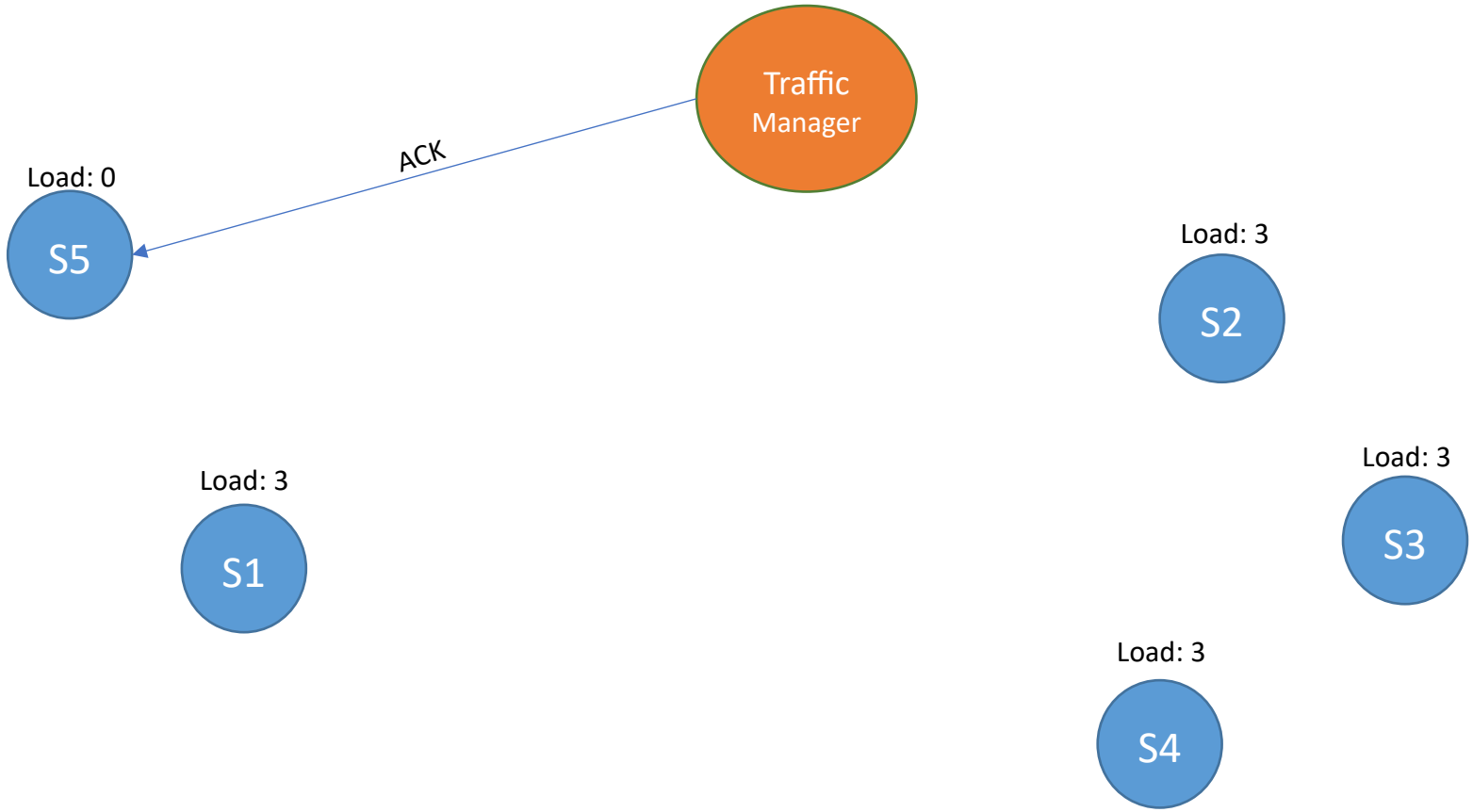
Join new Server



Join new Server

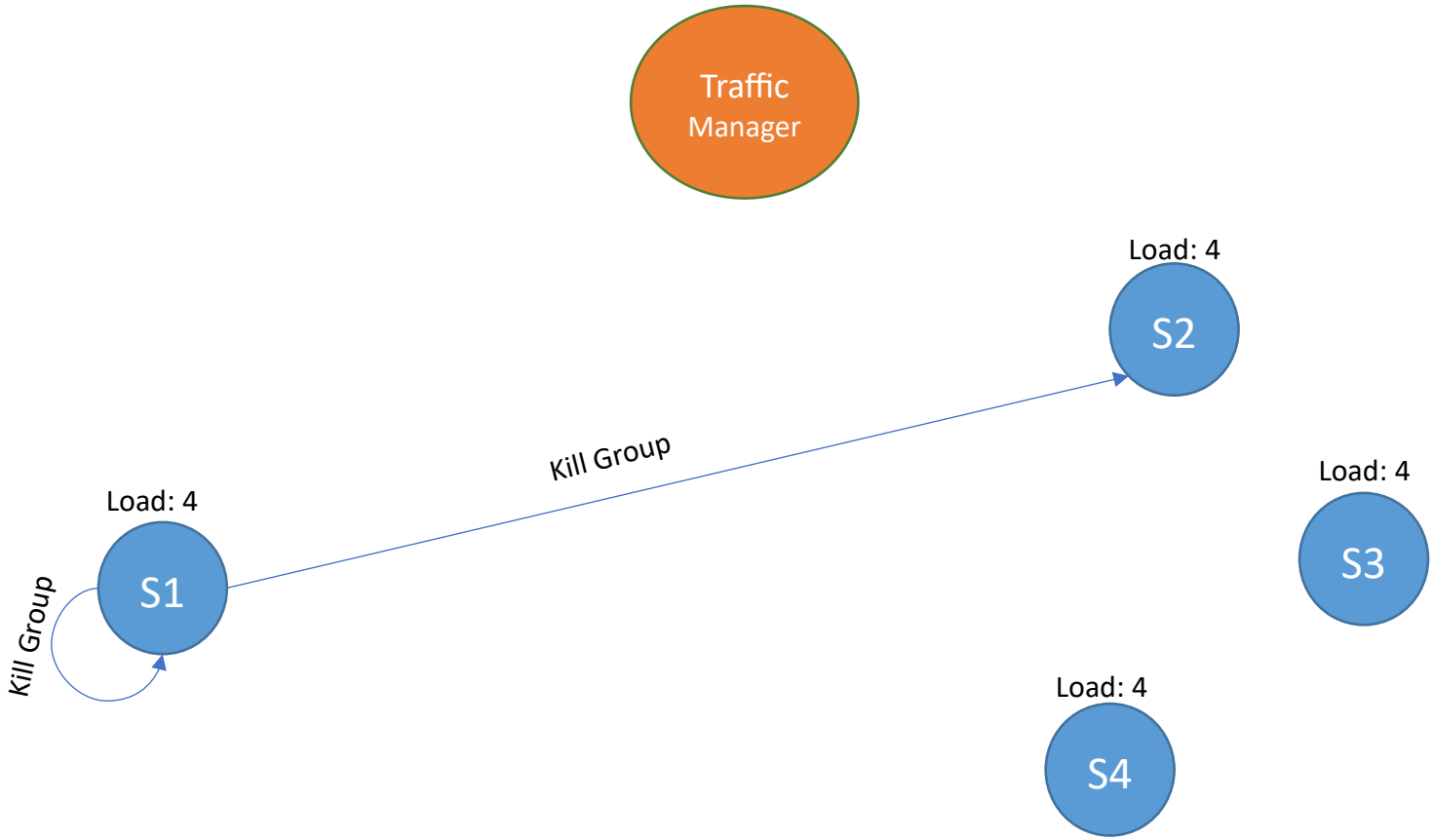


Join new Server

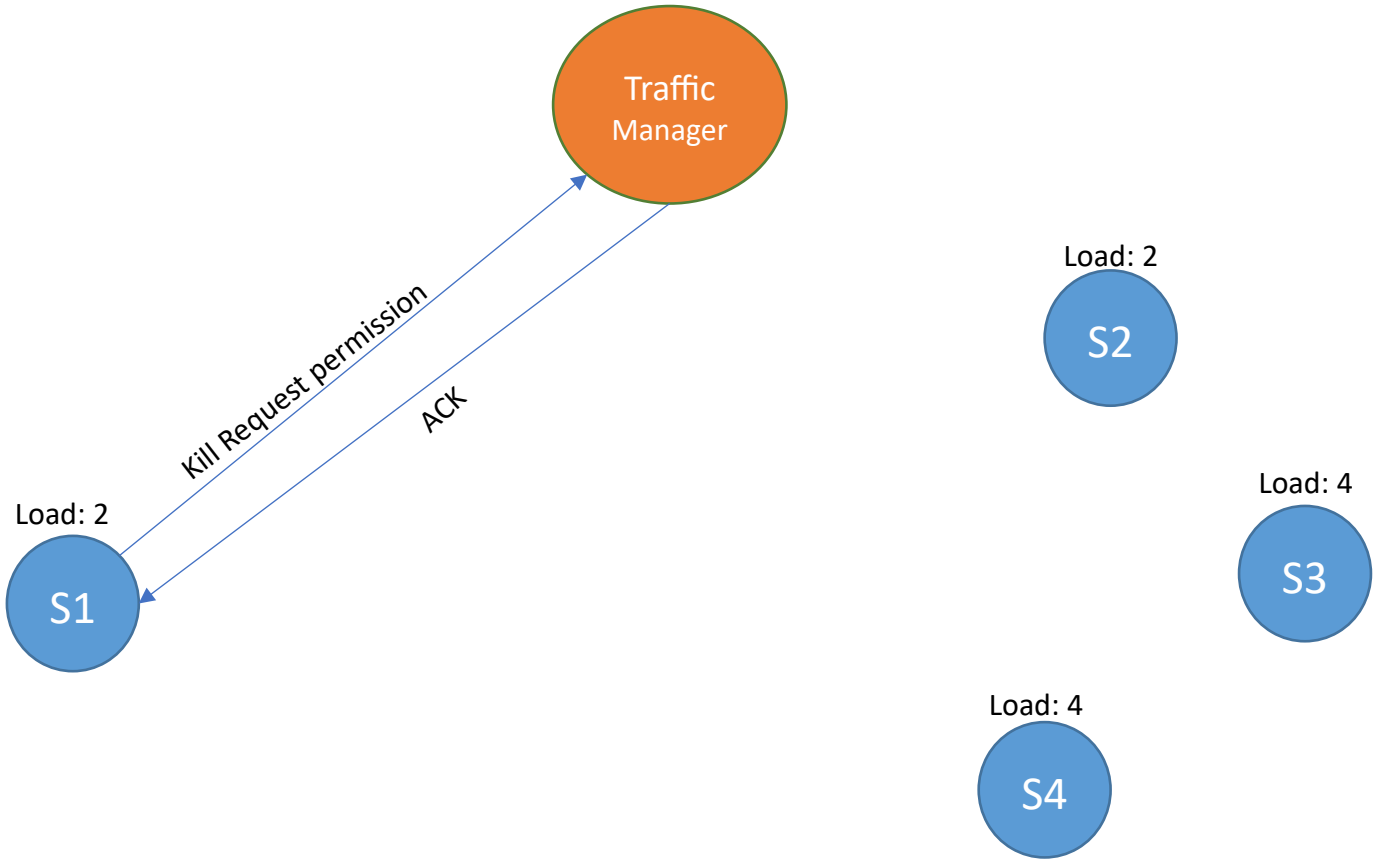


SCENARIO 2
(KILL GROUP)

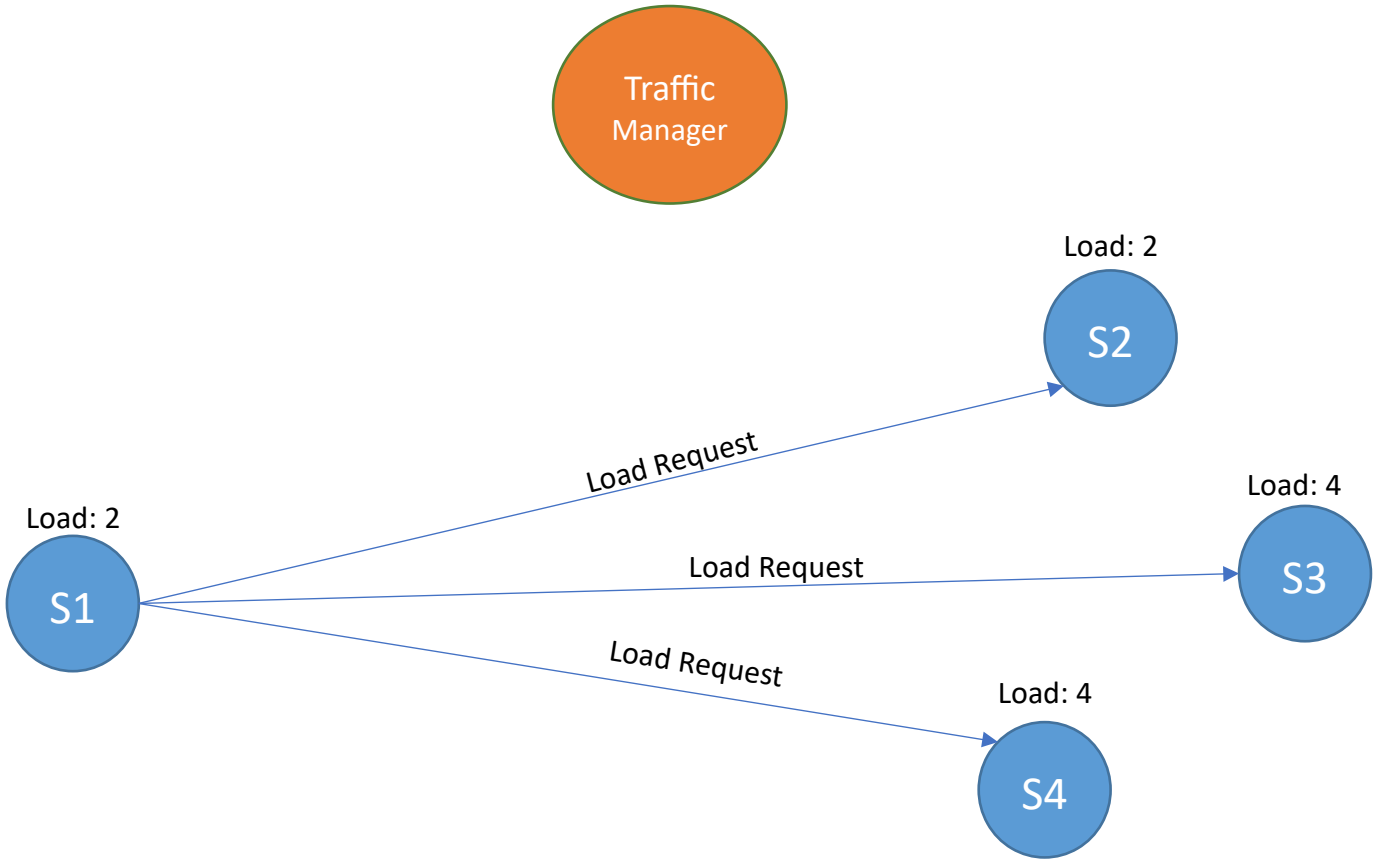
Kill Group


Traffic
Manager
Load: 4
S2
Kill Group
Load: 4
S1
Kill Group
Load: 4
S3
Load: 4
S4

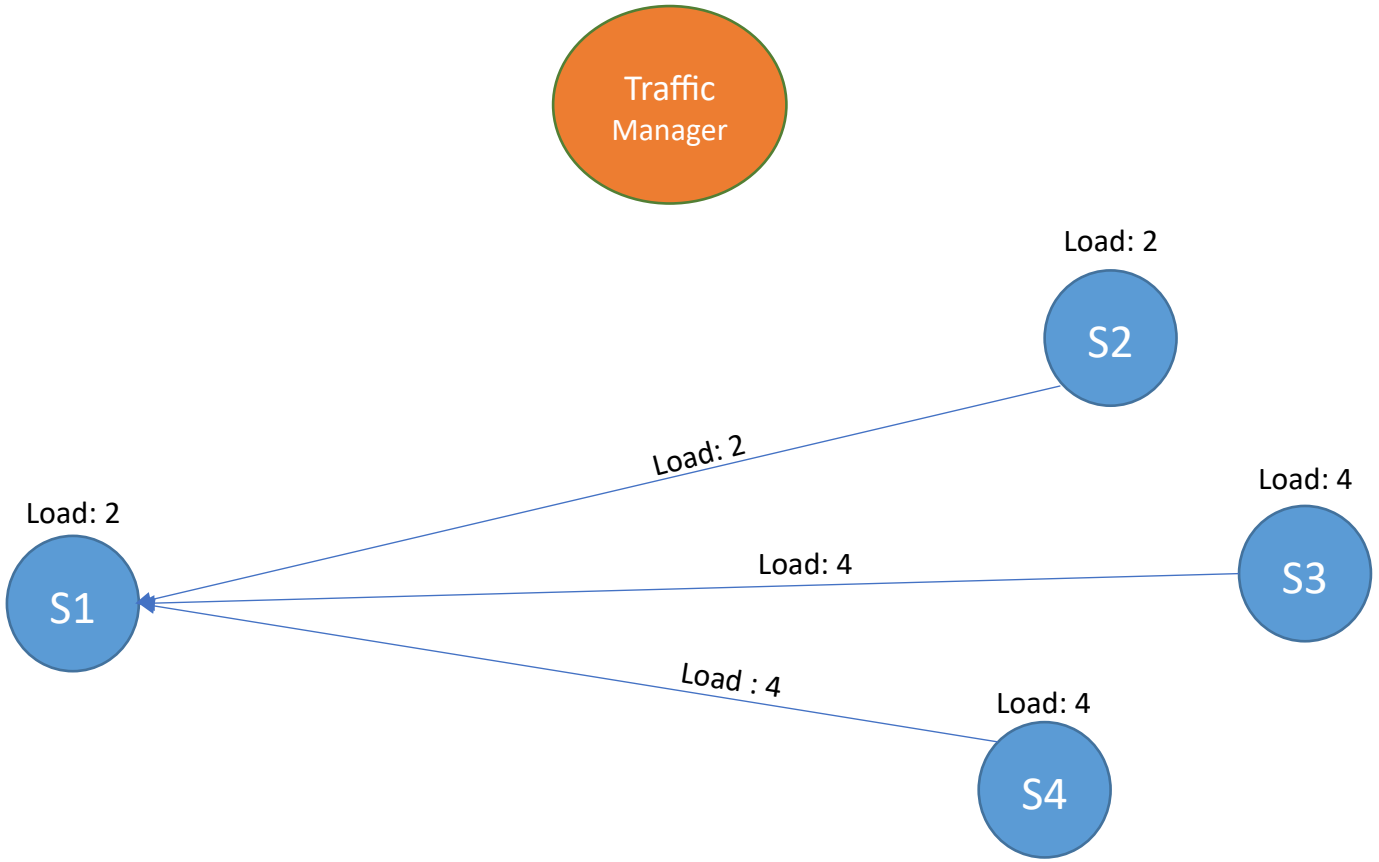
Kill Group


Traffic
Manager
Kill Request permission
ACK
Load: 2
S1
Load: 2
S2
Load: 4
S3
Load: 4
S4

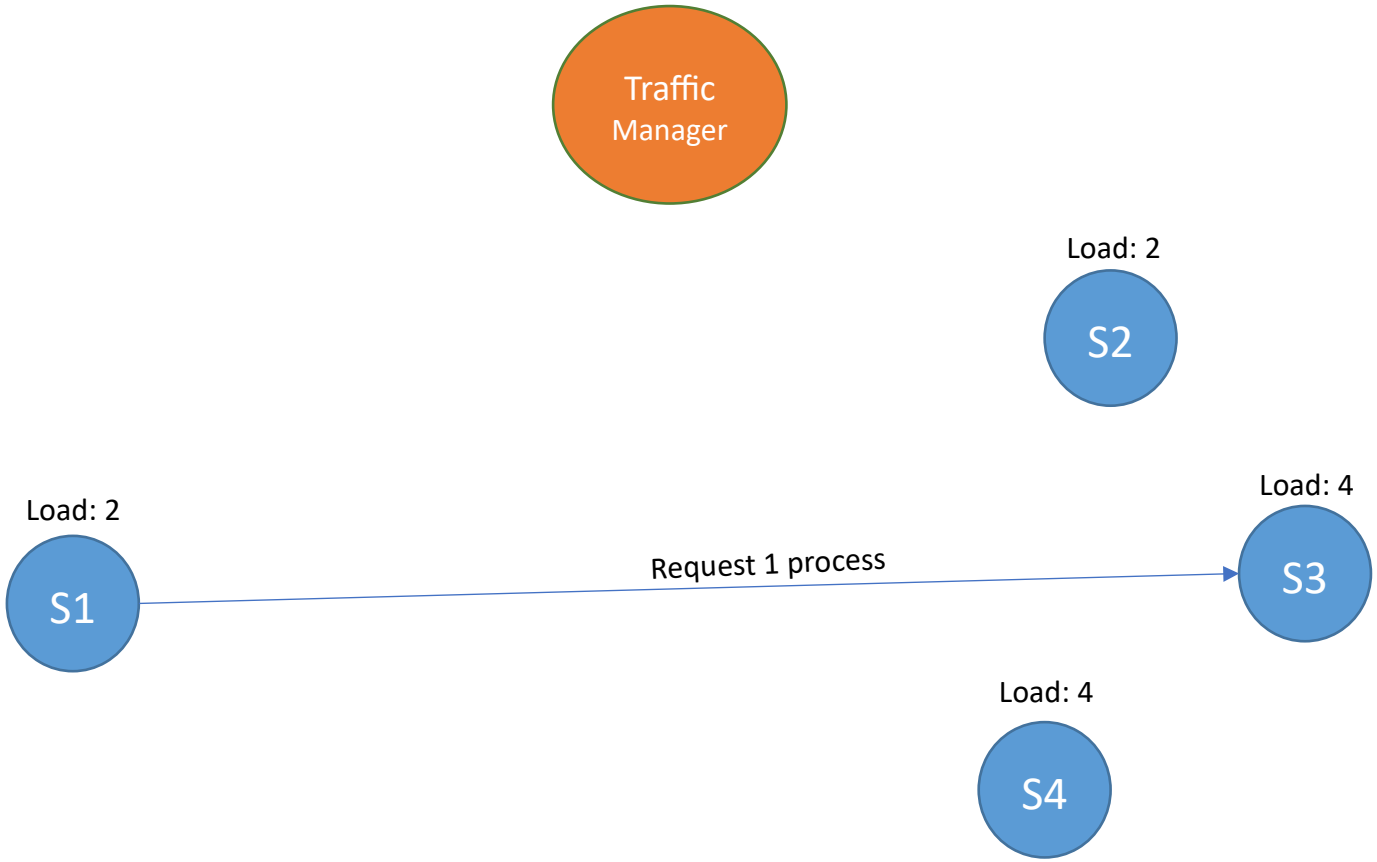
Kill Group


Traffic
Manager
Load: 2
S2
Load Request
Load: 2
S1
Load: 4
S3
Load Request
Load Request
Load: 4
S4

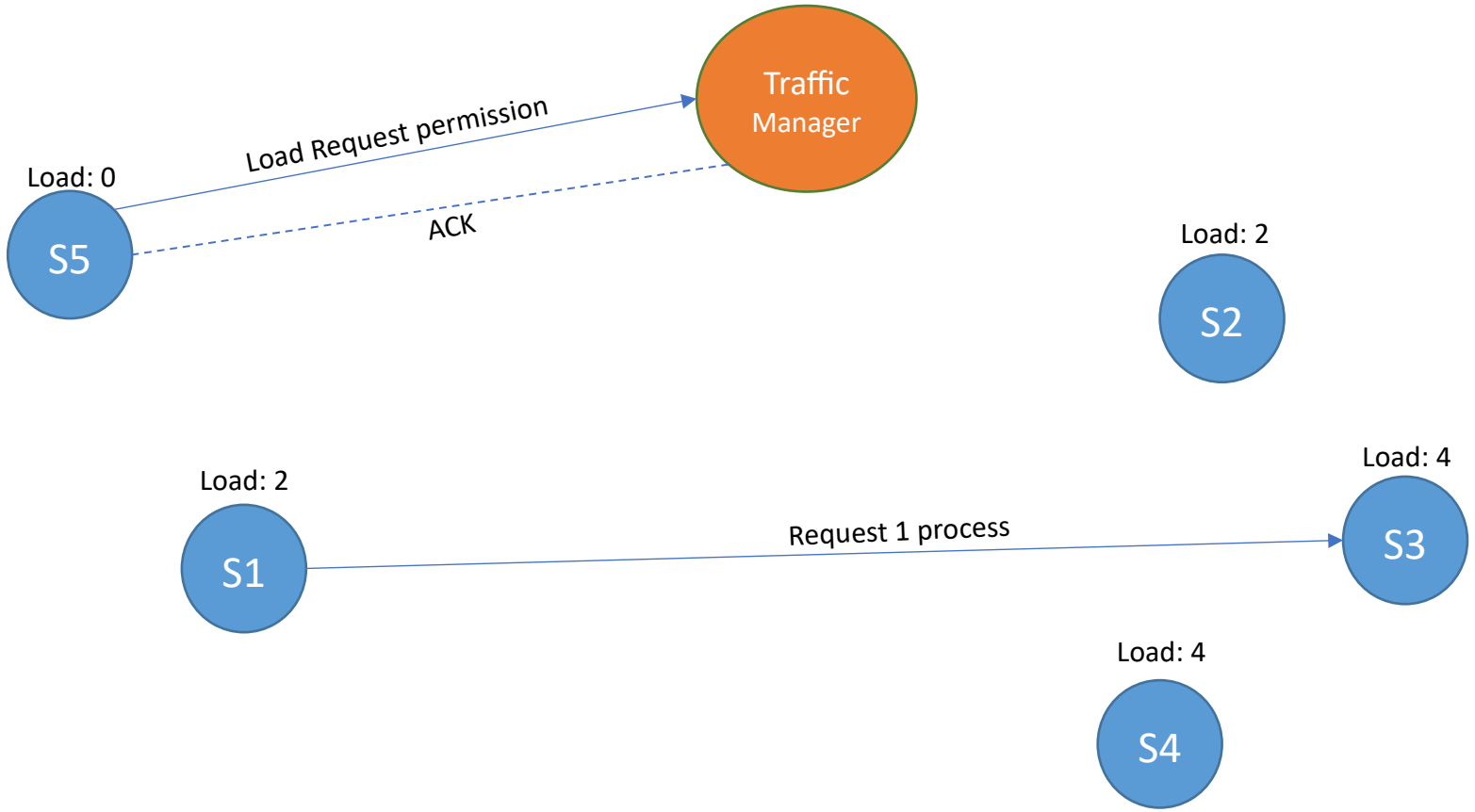
Kill Group


Traffic
Manager
Load: 2
S2
Load: 2
Load: 4
Load: 2
S1
Load: 4
S3
Load : 4
Load: 4
S4

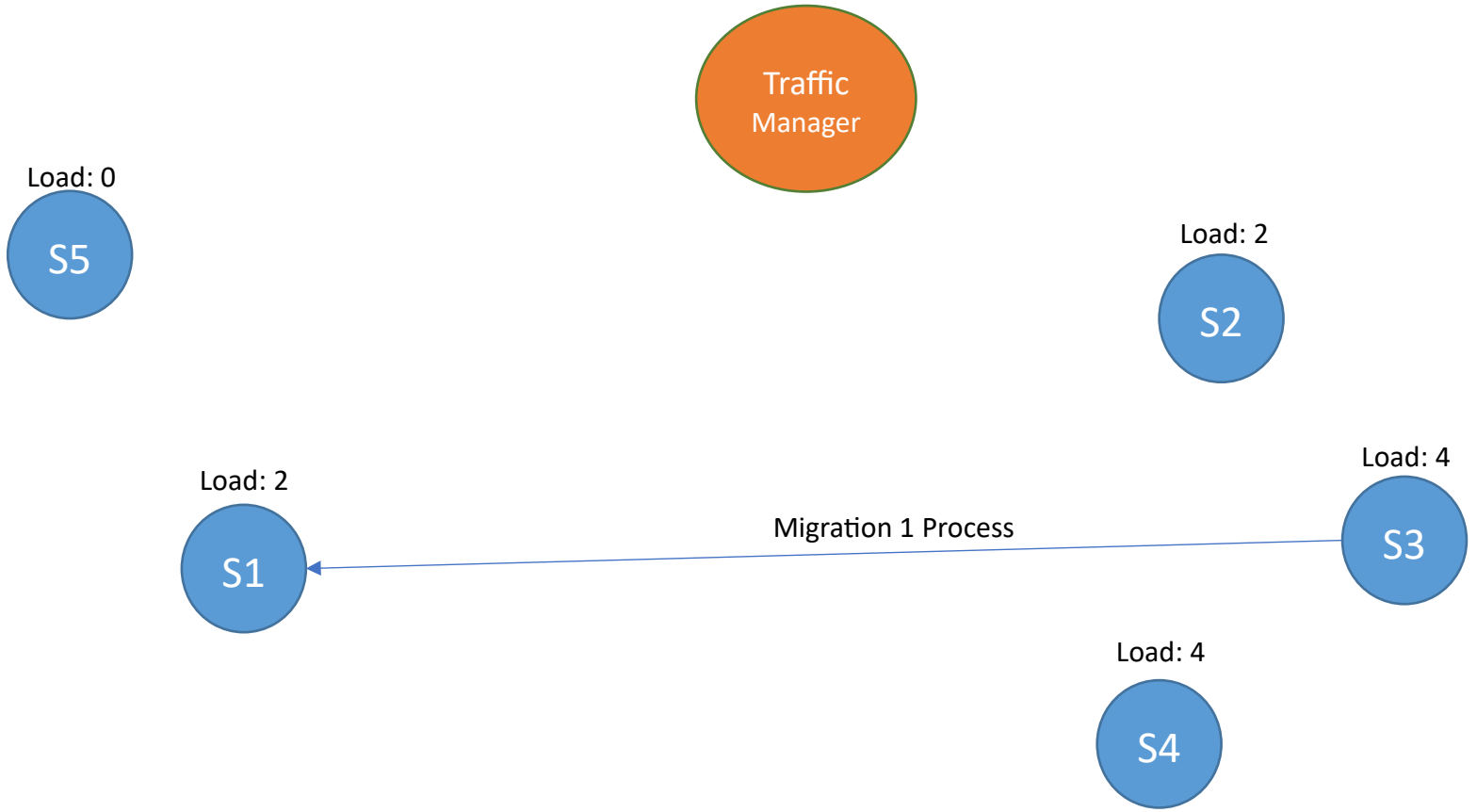
Kill Group


Traffic
Manager
Load: 2
S2
Load: 2
S1
Request 1 process
Load: 4
S3
Load: 4
S4

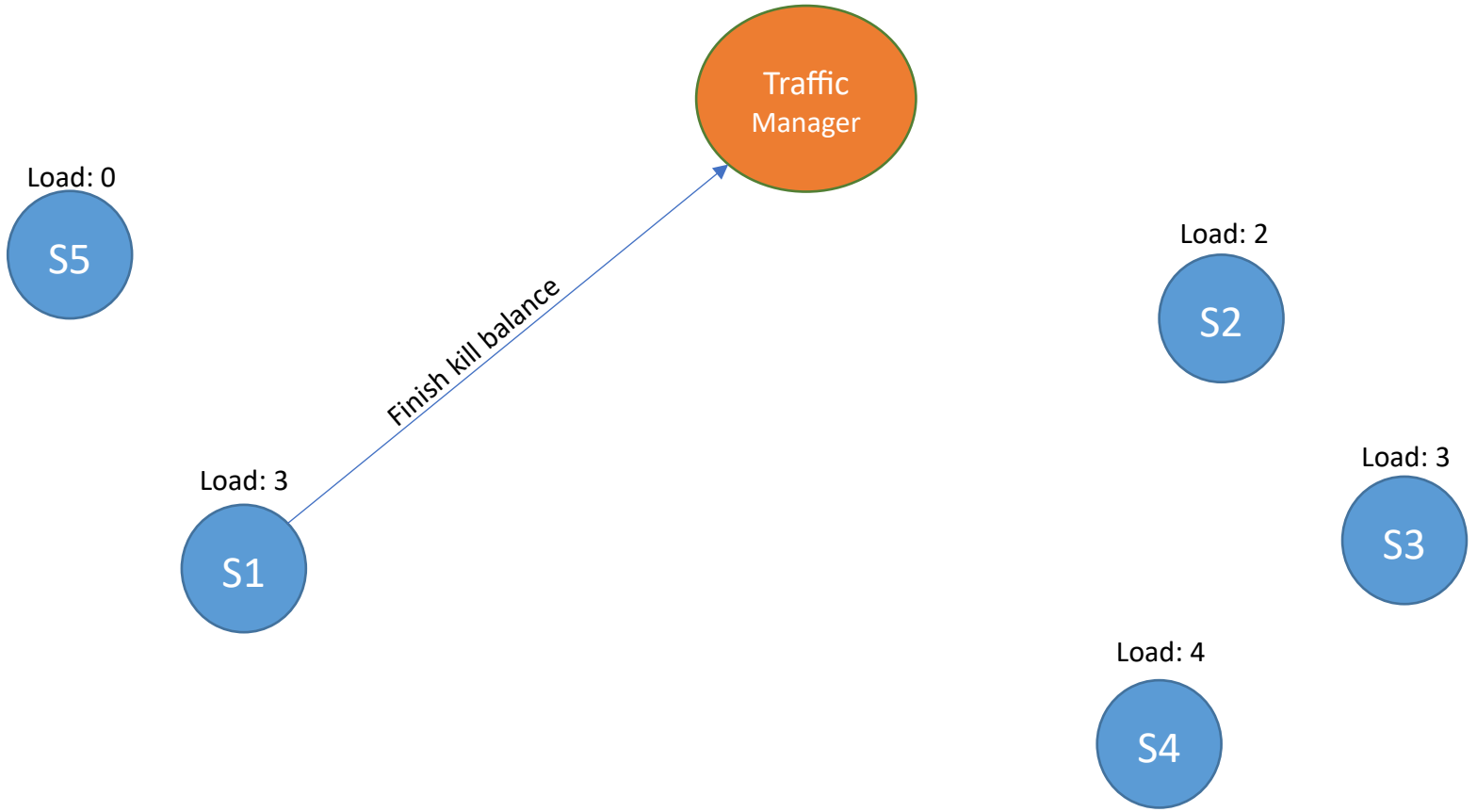
Kill Group


Traffic
Manager
Load Request permission
ACK
Load: 0
S5
Load: 2
S2
Load: 2
S1
Request 1 process
Load: 4
S3
Load: 4
S4

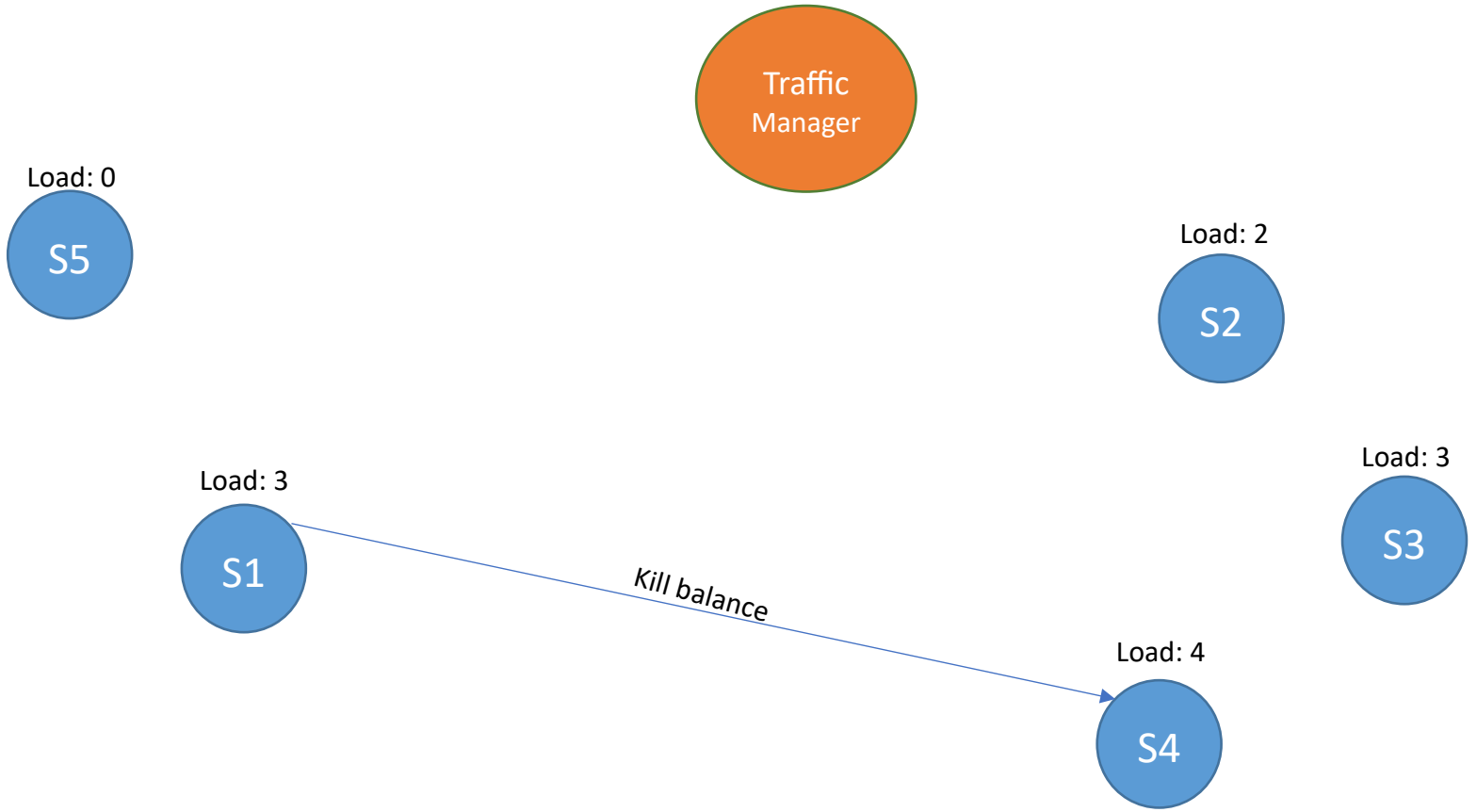
Kill Group


Traffic
Manager
Load: 0
S5
Load: 2
S2
Load: 2
S1
Migration 1 Process
Load: 4
S3
Load: 4
S4

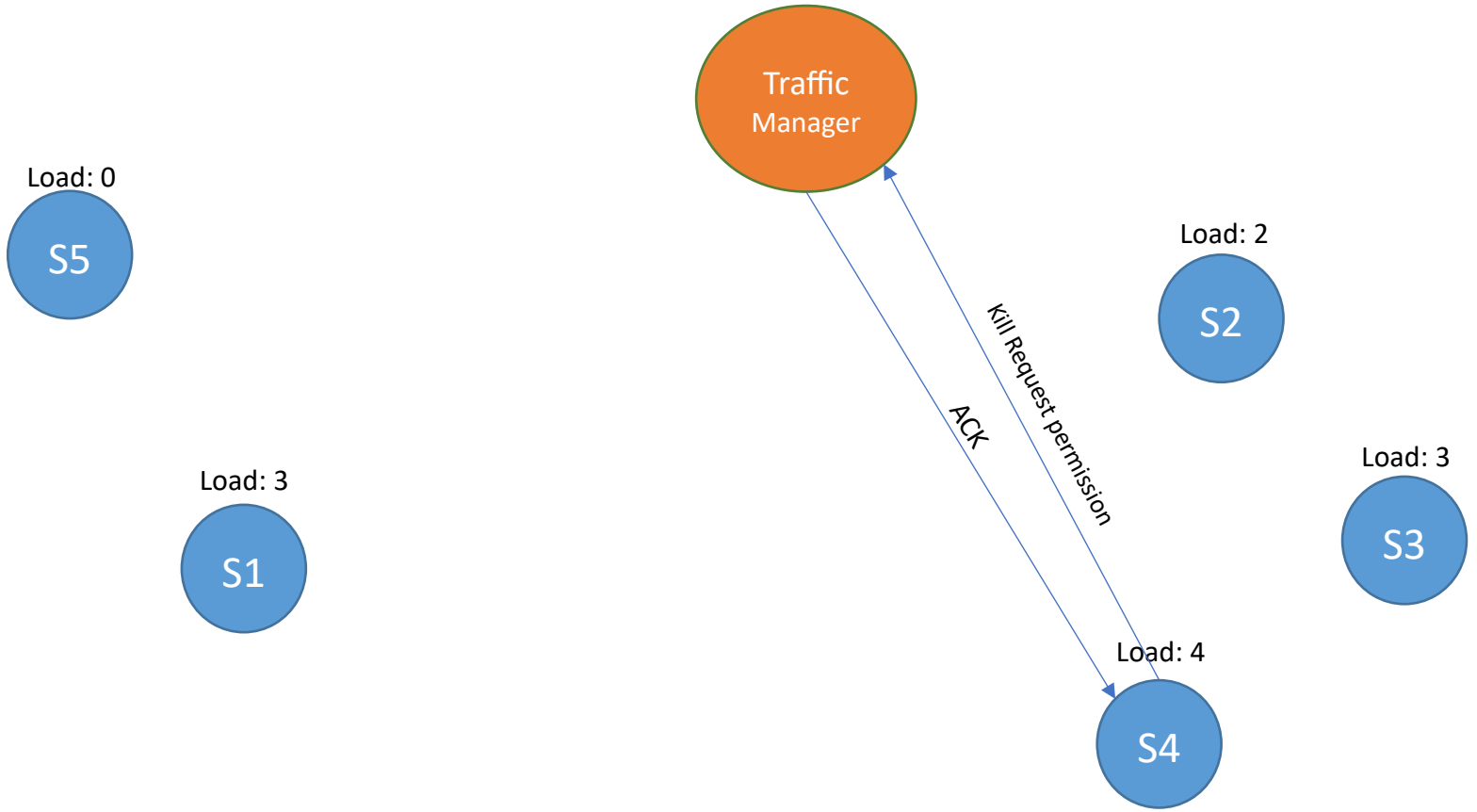
Kill Group


Traffic
Manager
Load: 0
S5
Finish kill balance
Load: 3
S1
Load: 2
S2
Load: 3
S3
Load: 4
S4

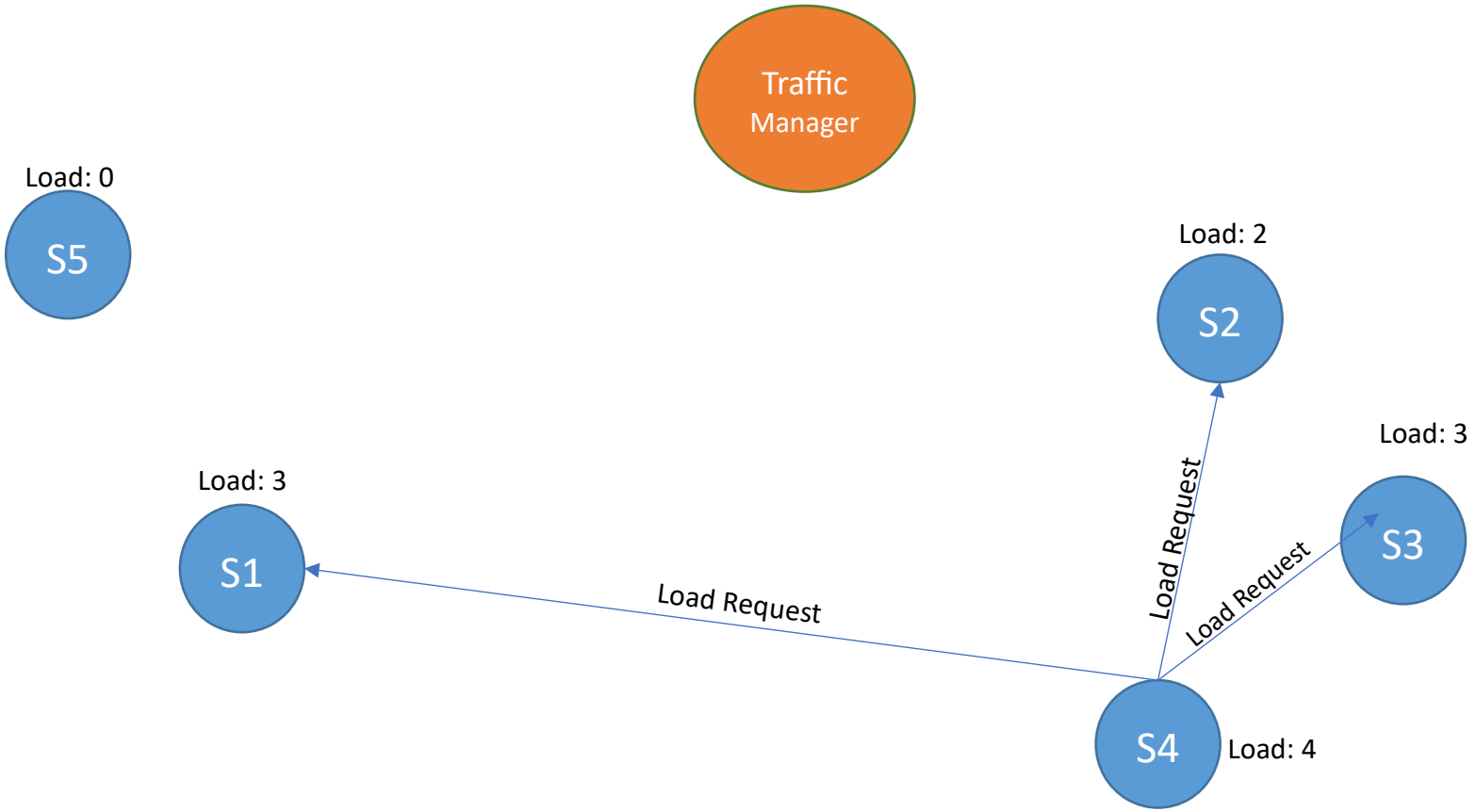
Kill Group


Traffic
Manager
Load: 0
S5
Load: 2
S2
Load: 3
S3
Load: 3
S1
Kill balance
Load: 4
S4

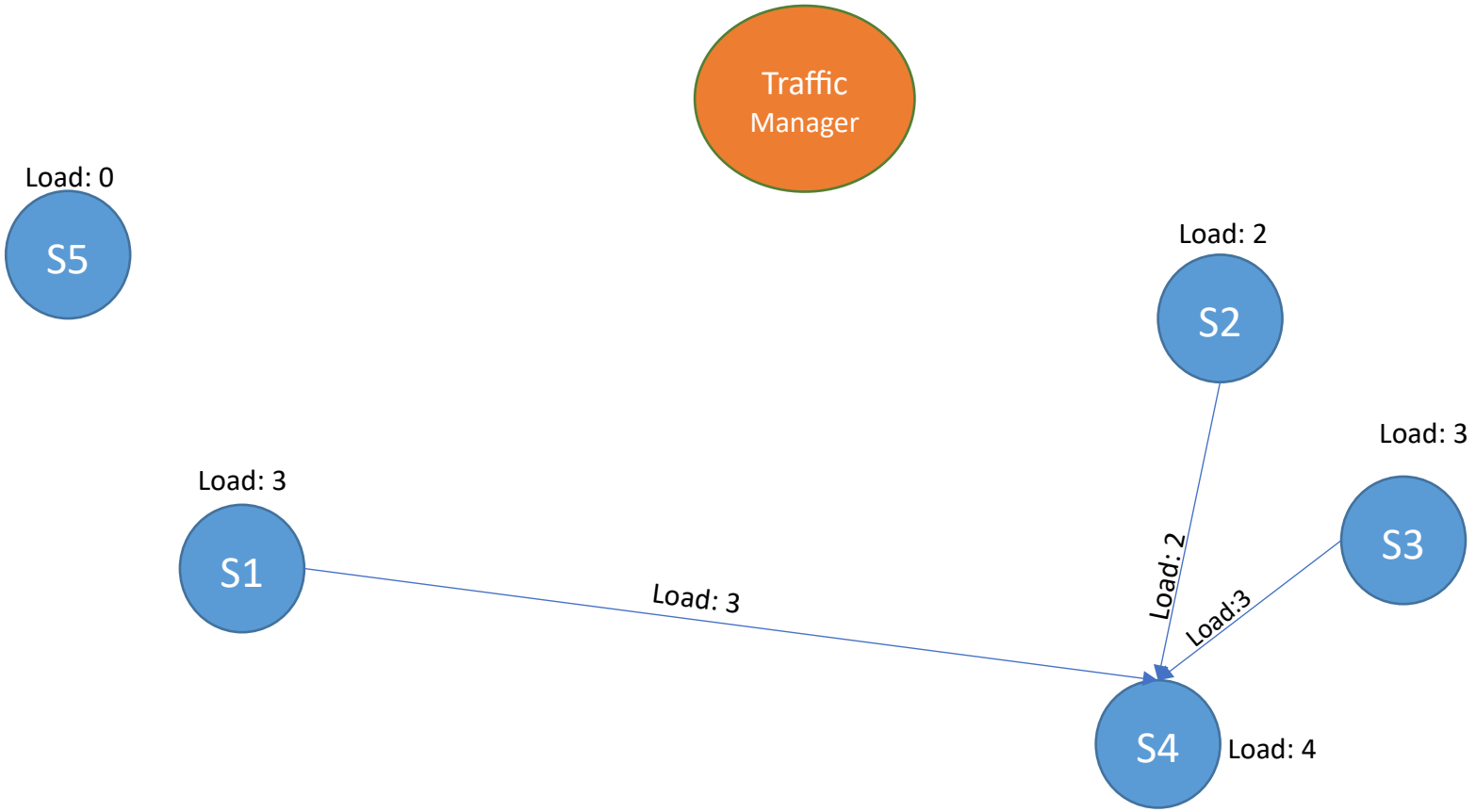
Kill Group


Traffic
Manager
Load: 0
S5
Load: 2
S2
Kill Request permission
ACK
Load: 3
S1
Load: 3
S3
Load: 4
S4

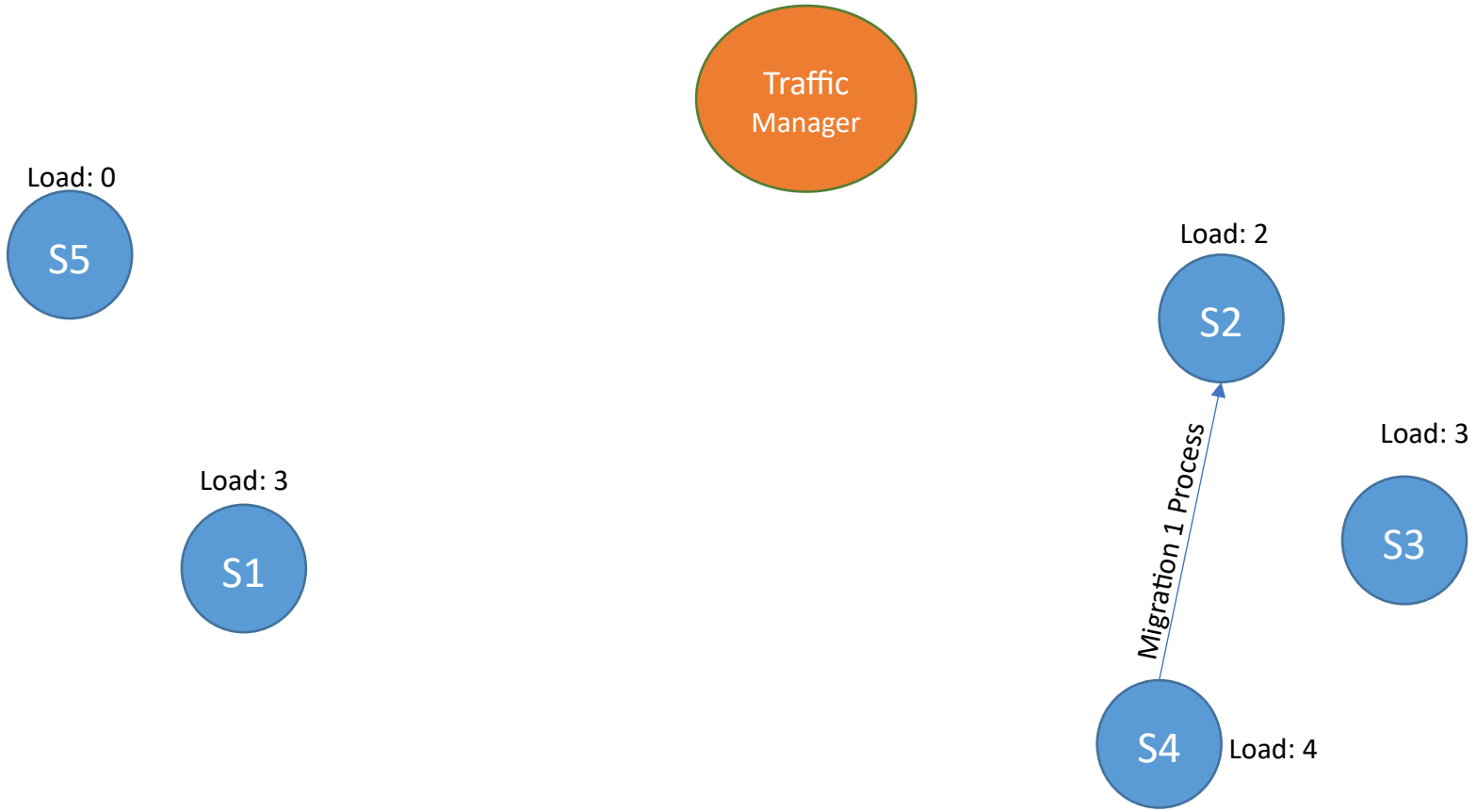
Kill Group


Traffic
Manager
Load: 0
S5
Load: 2
S2
Load: 3
S3
Load: 3
S1
Load Request
Load Request
Load Request
S4
Load: 4

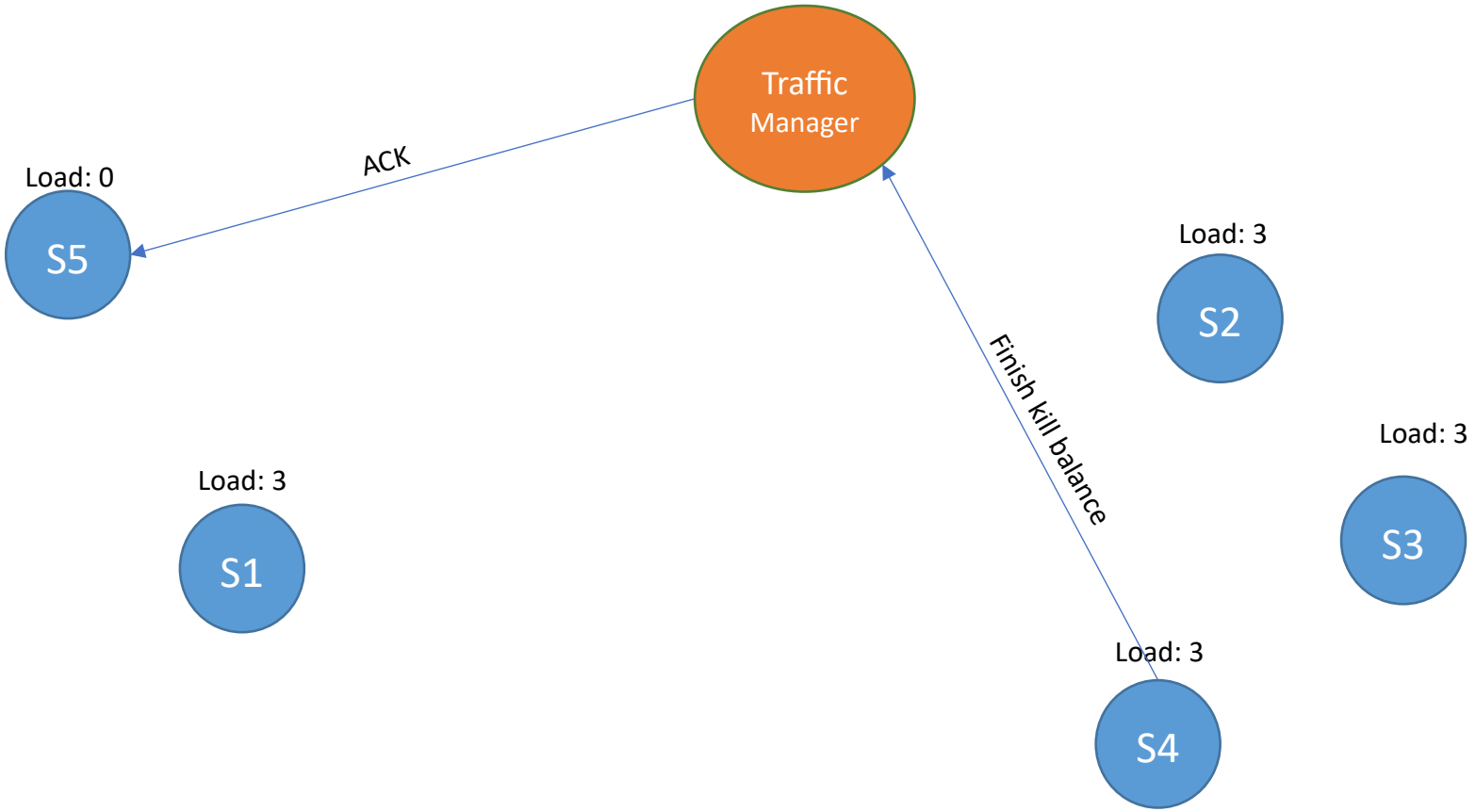
Kill Group


Traffic
Manager
Load: 0
S5
Load: 2
S2
Load: 3
S3
Load: 3
S1
Load: 3
Load: 2
Load:3
S4
Load: 4

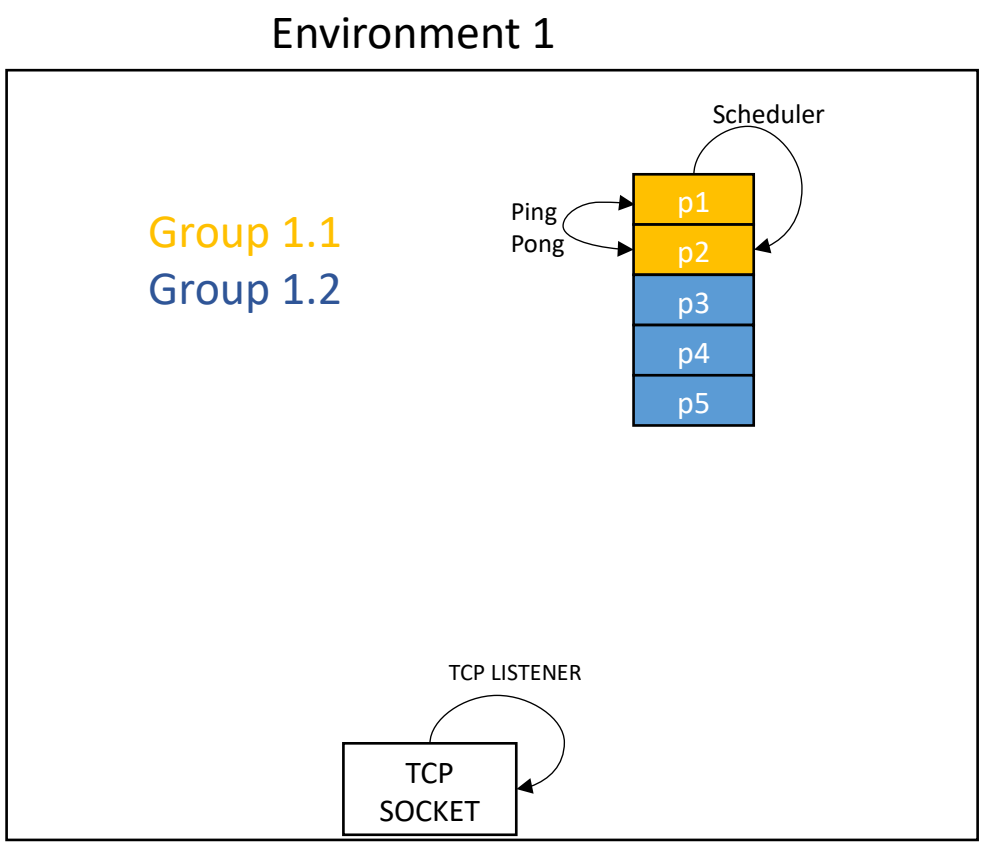
Kill Group

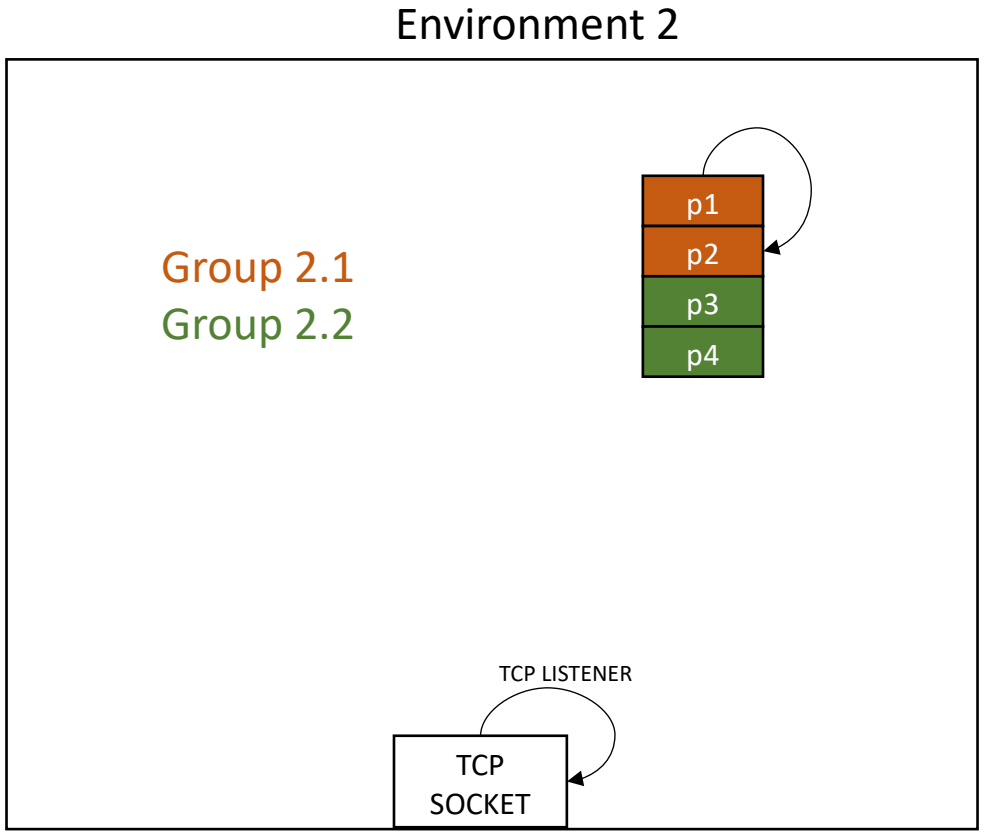

Traffic
Manager
Load: 0
S5
Load: 3
S1
Load: 2
S2
Migration 1 Process
Load: 3
S3
S4
Load: 4

Kill Group

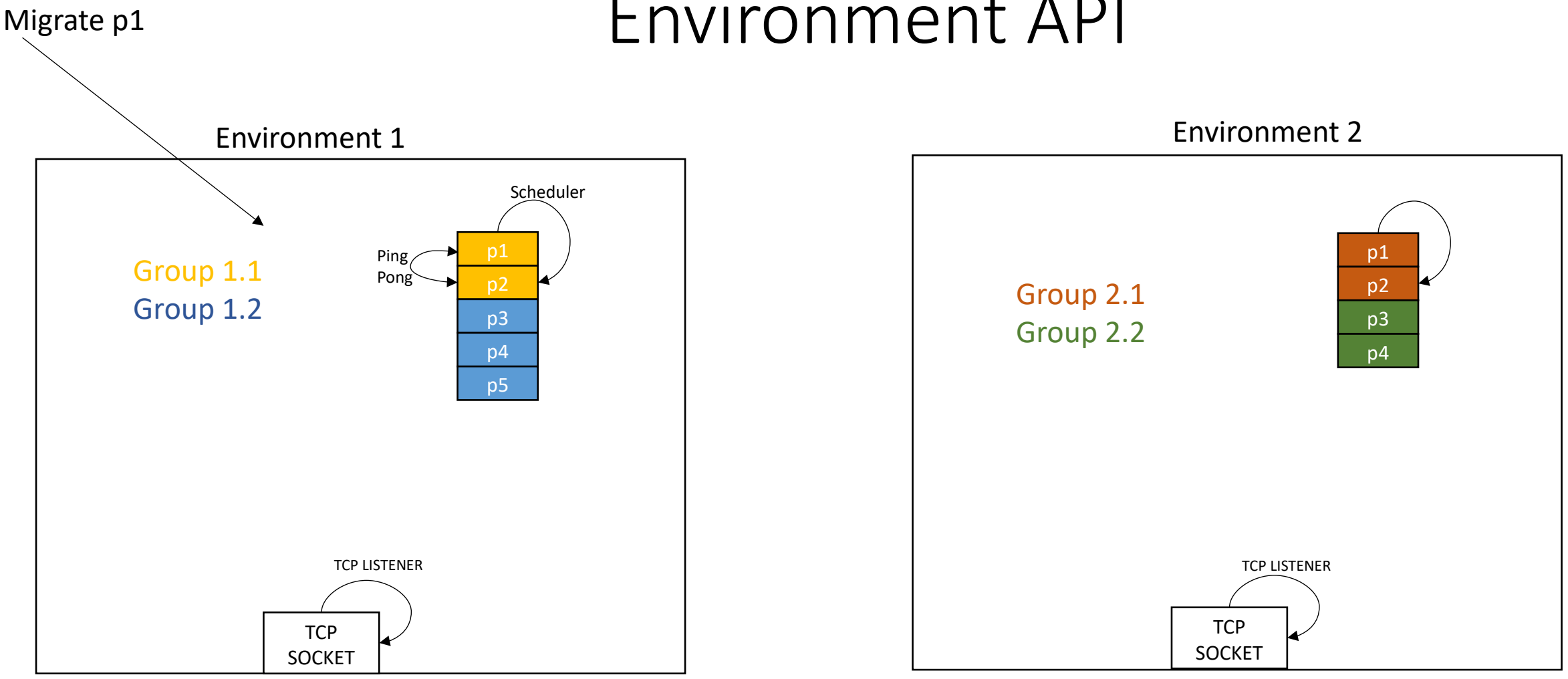

Traffic
Manager
ACK
Load: 0
S5
Load: 3
S2
Finish kill balance
Load: 3
S3
Load: 3
S1
Load: 3
S4

Environment API

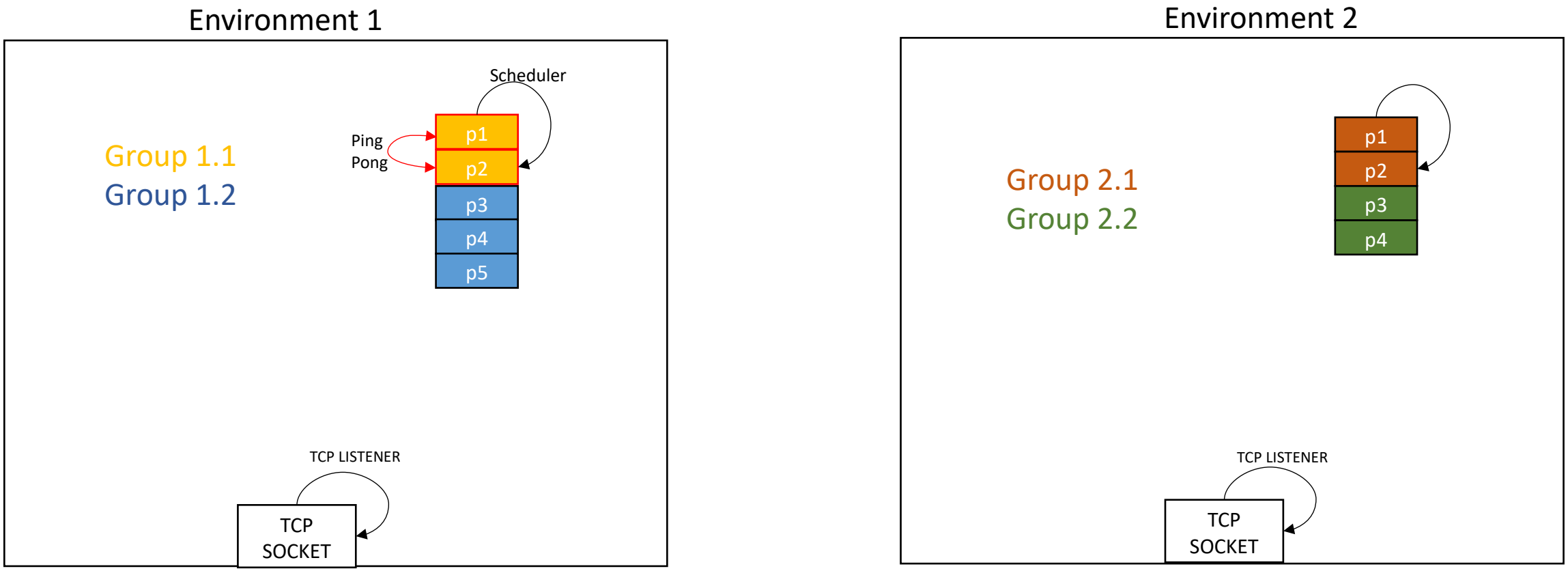




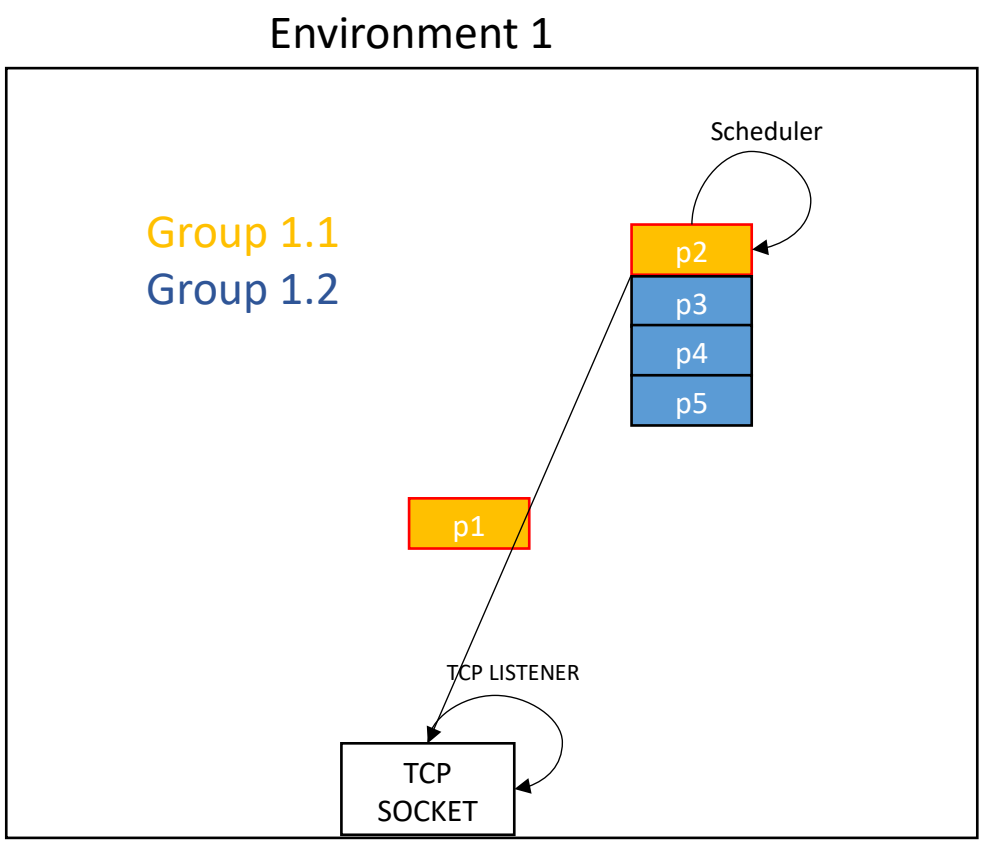
Environment API

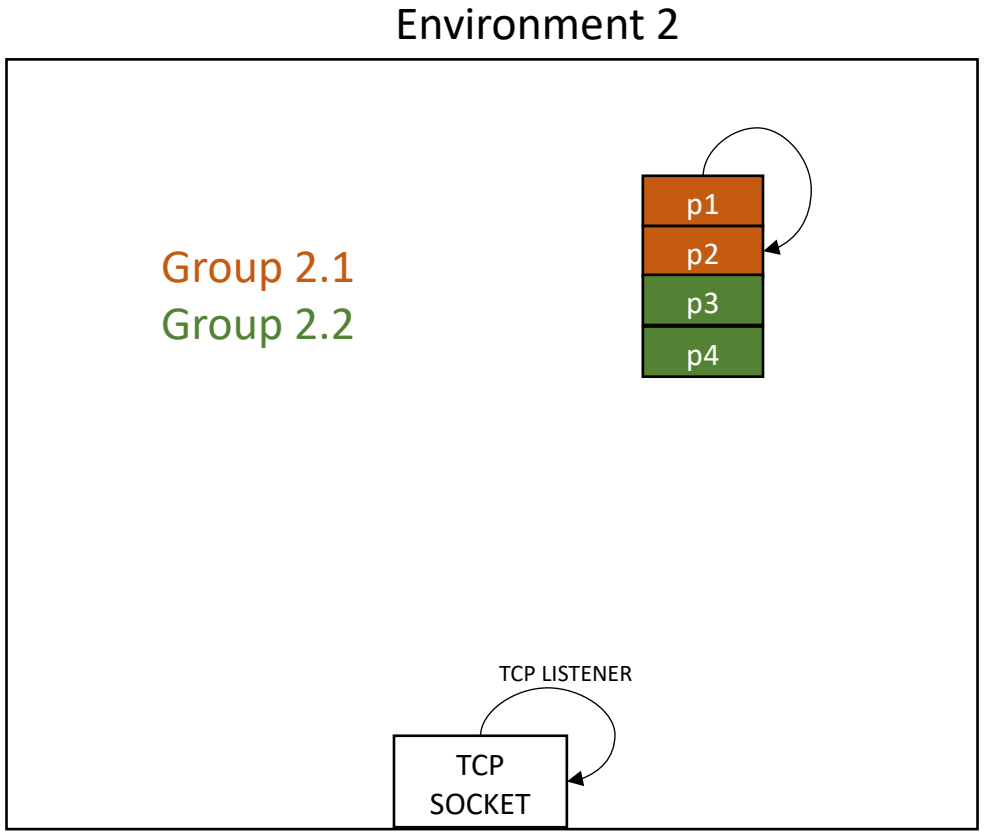


Environment API

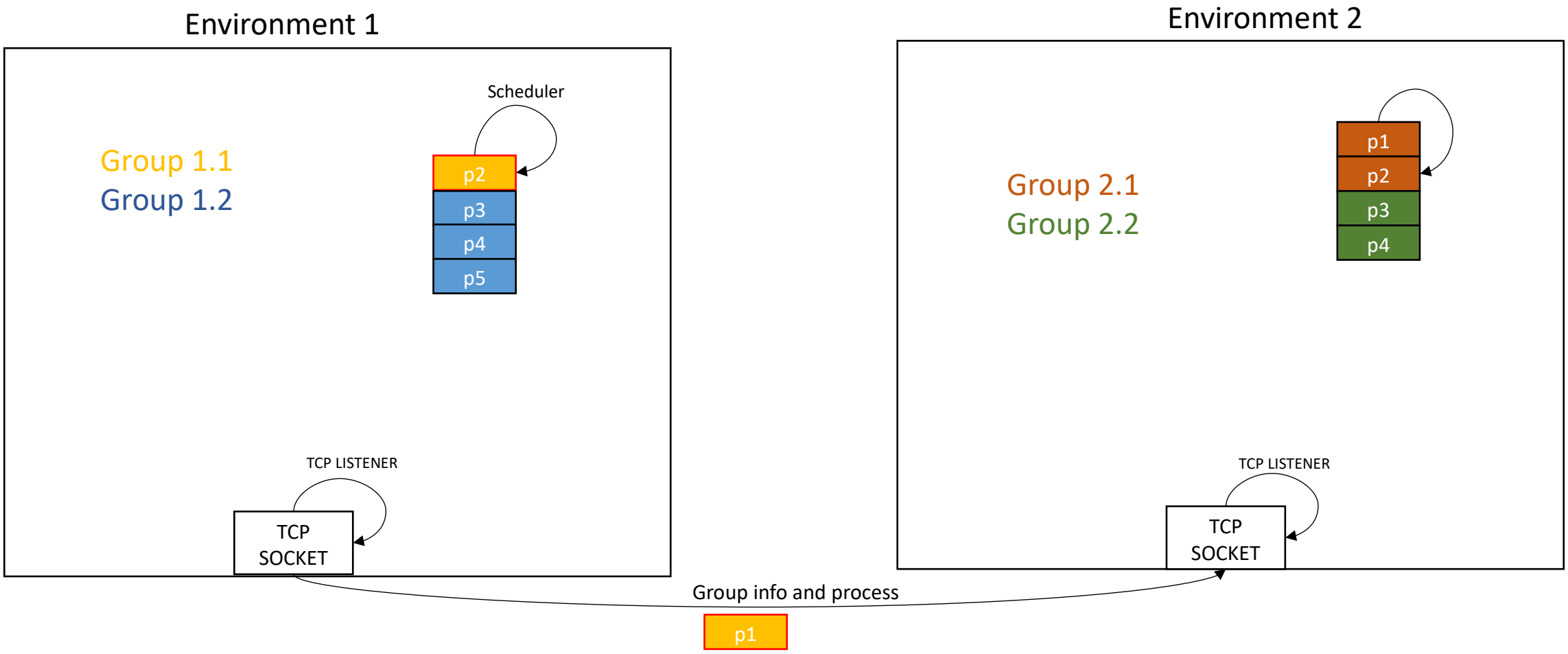


Environment API

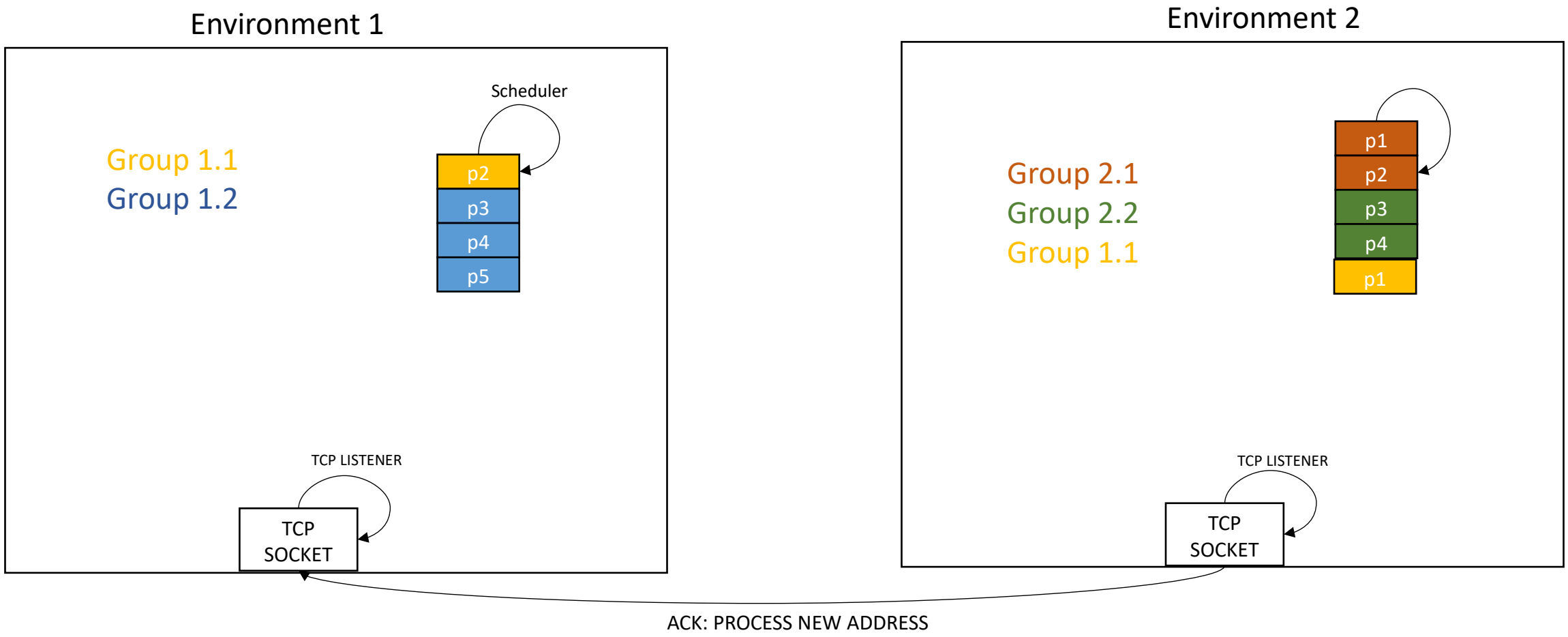




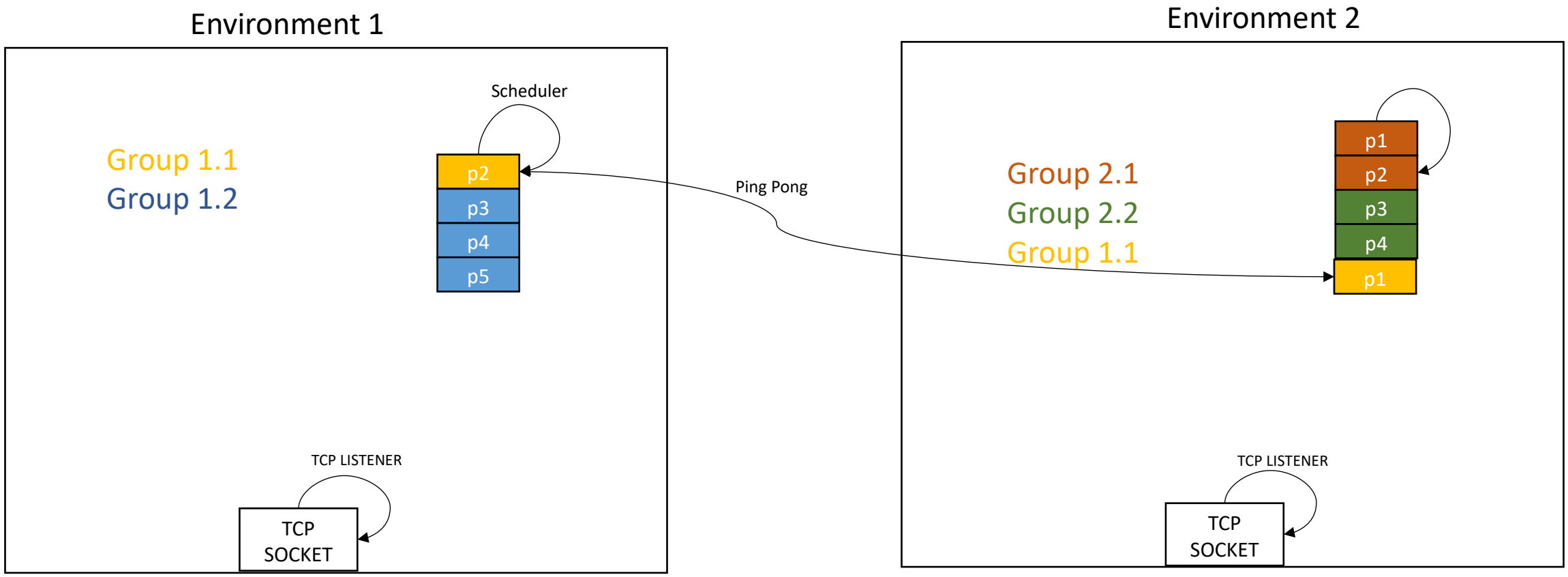
Environment API



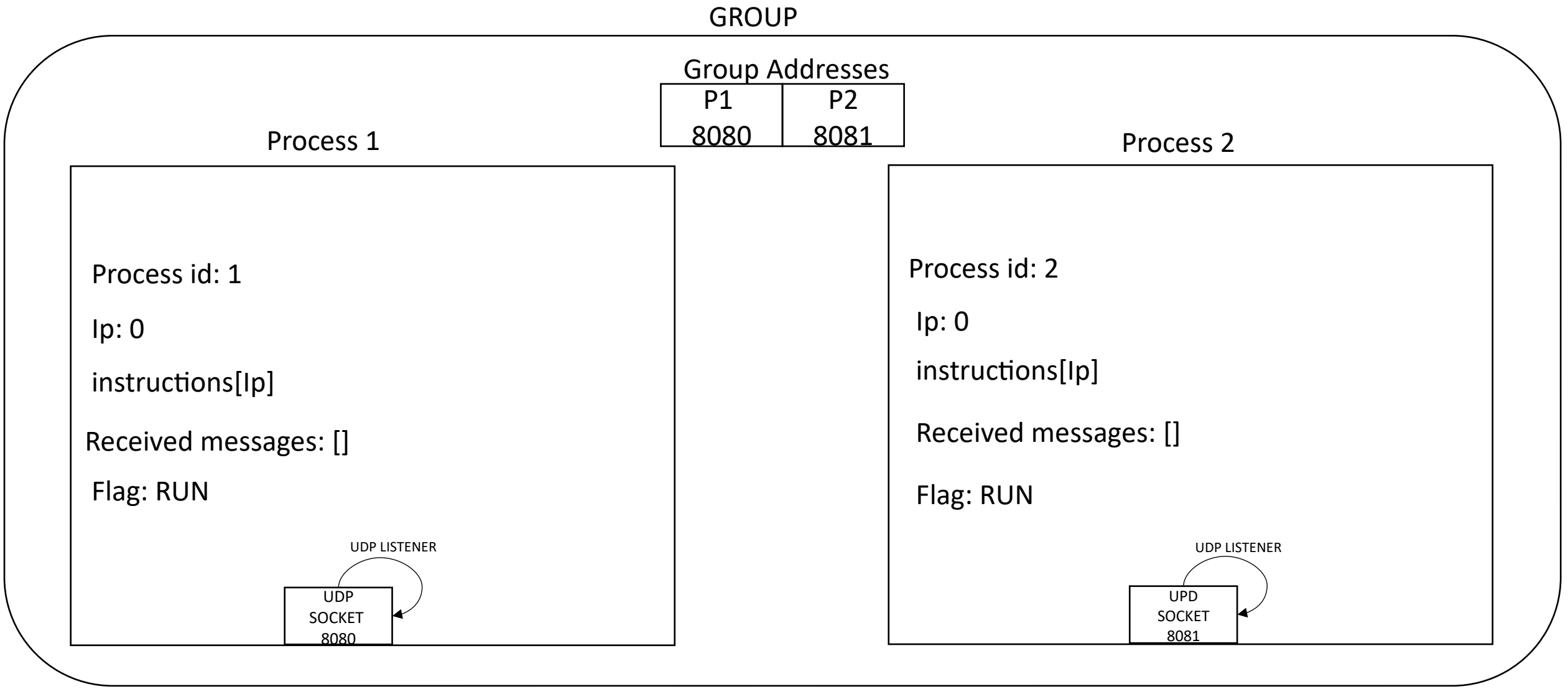
Environment API



Environment API



PROCESS API


GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process id: 1
Ip: 0
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UDP
SOCKET
8080
Process 2
Process id: 2
Ip: 0
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081

PROCESS API

Scheduler

GROUP

Group Addresses

P1	P2
8080	8081

Process 1

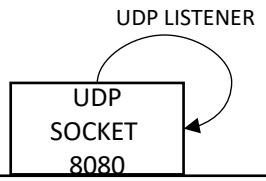
Process id: 1

Ip: 0

instructions[Ip] (Send p2 “hello”)

Received messages: []

Flag: RUN



Process 2

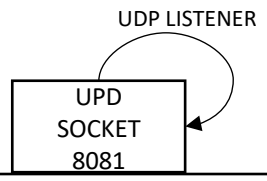
Process id: 2

Ip: 0

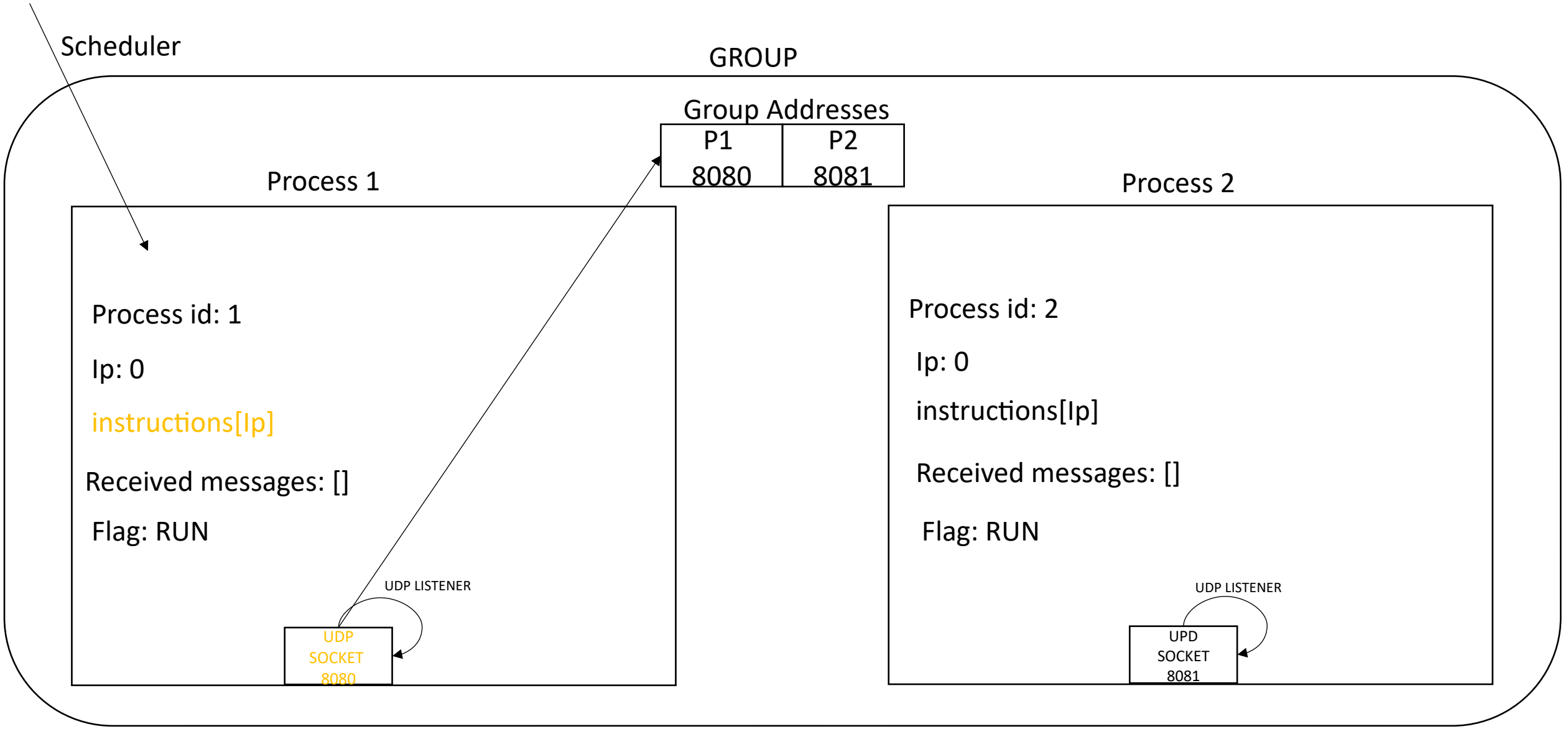
instructions[Ip]

Received messages: []

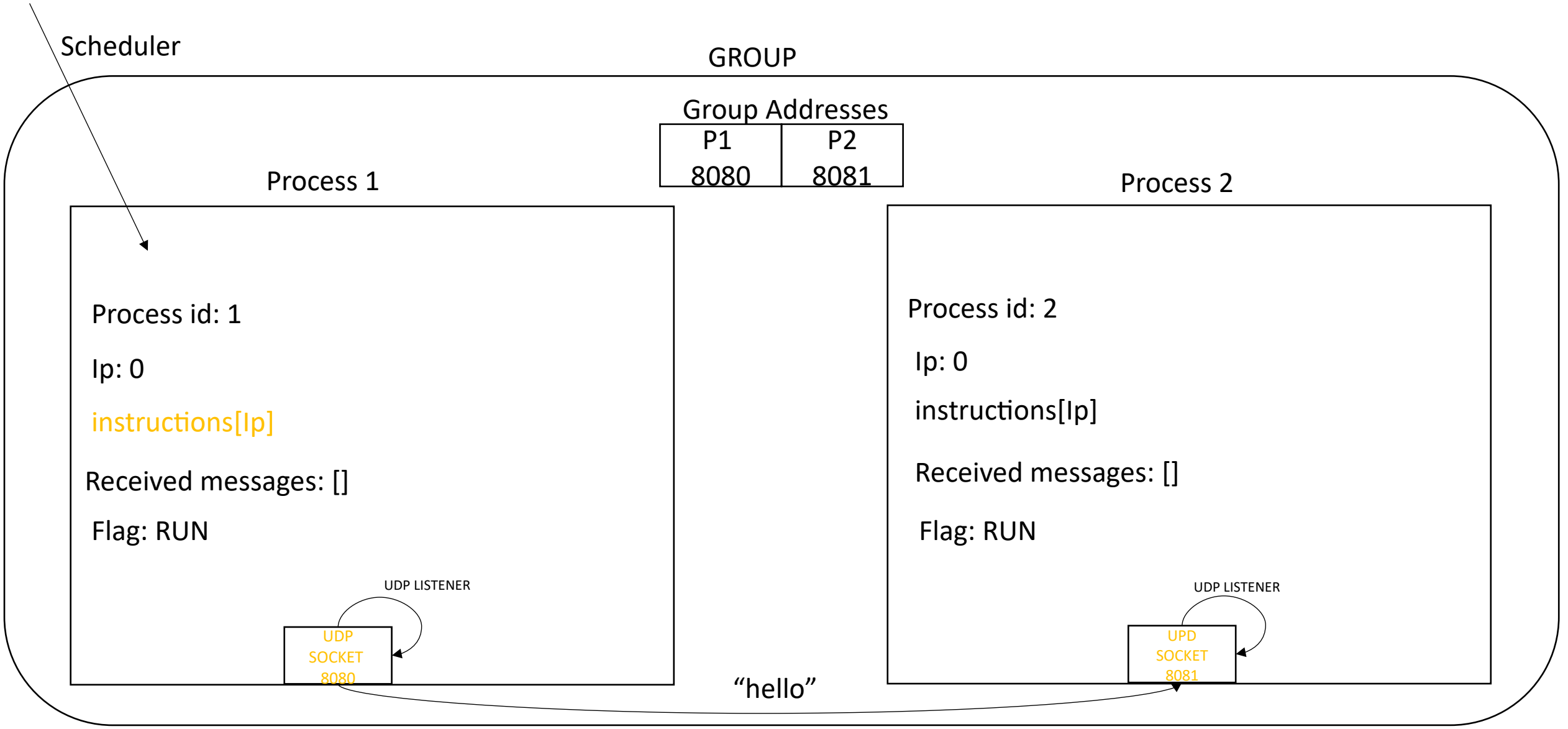
Flag: RUN



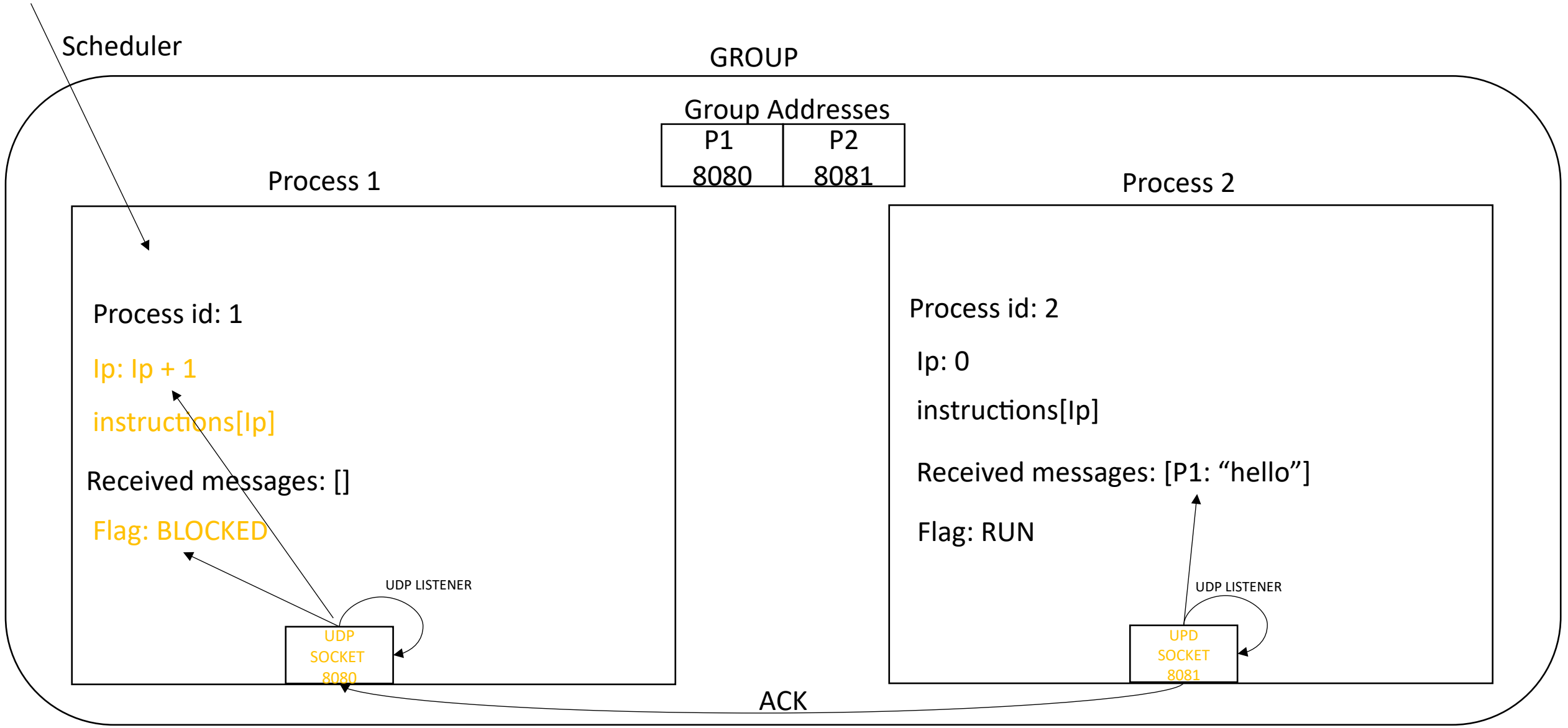
PROCESS API


Scheduler
GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process id: 1
Ip: 0
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UDP
SOCKET
8080
Process 2
Process id: 2
Ip: 0
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081

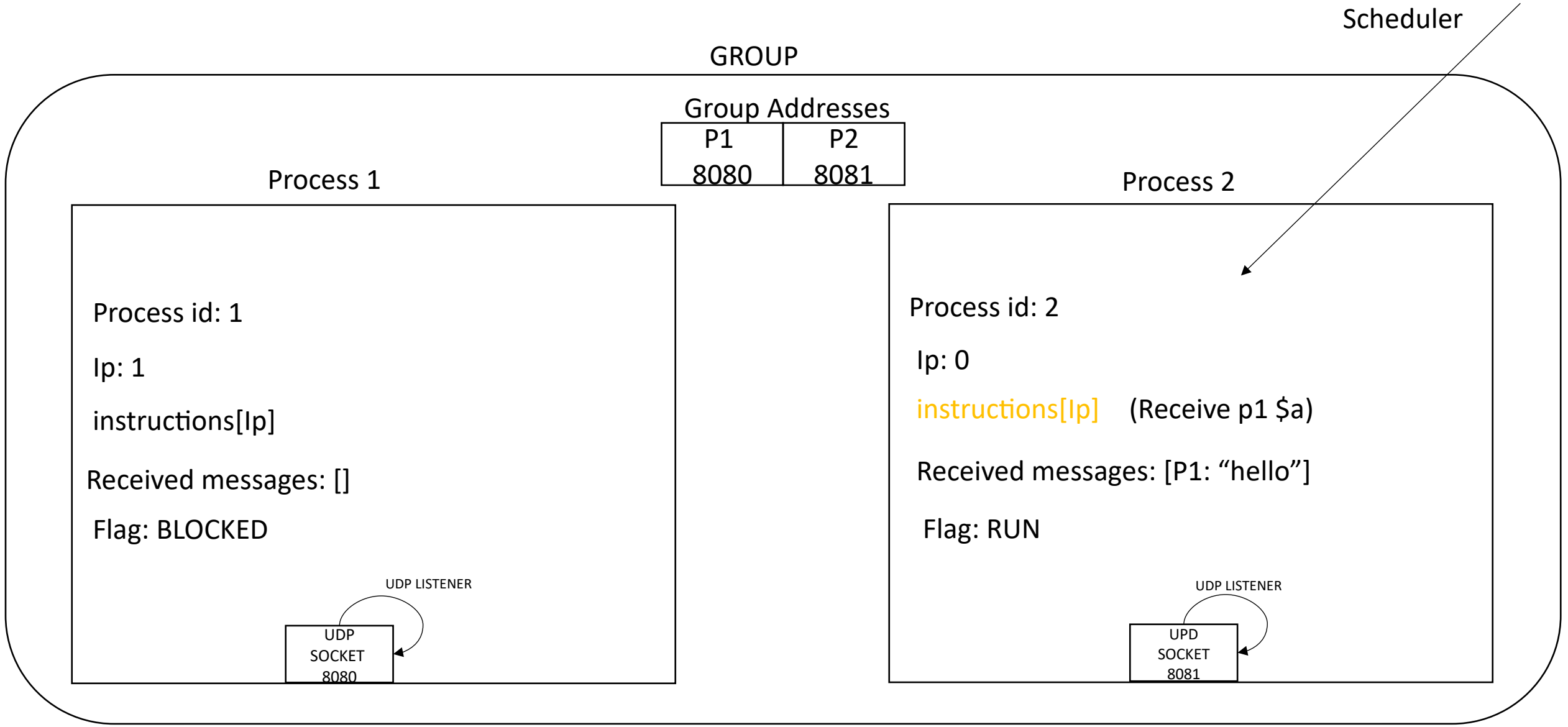
PROCESS API


Scheduler
GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process 2
Process id: 1
Ip: 0
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UDP
SOCKET
8080
Process id: 2
Ip: 0
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081
“hello”

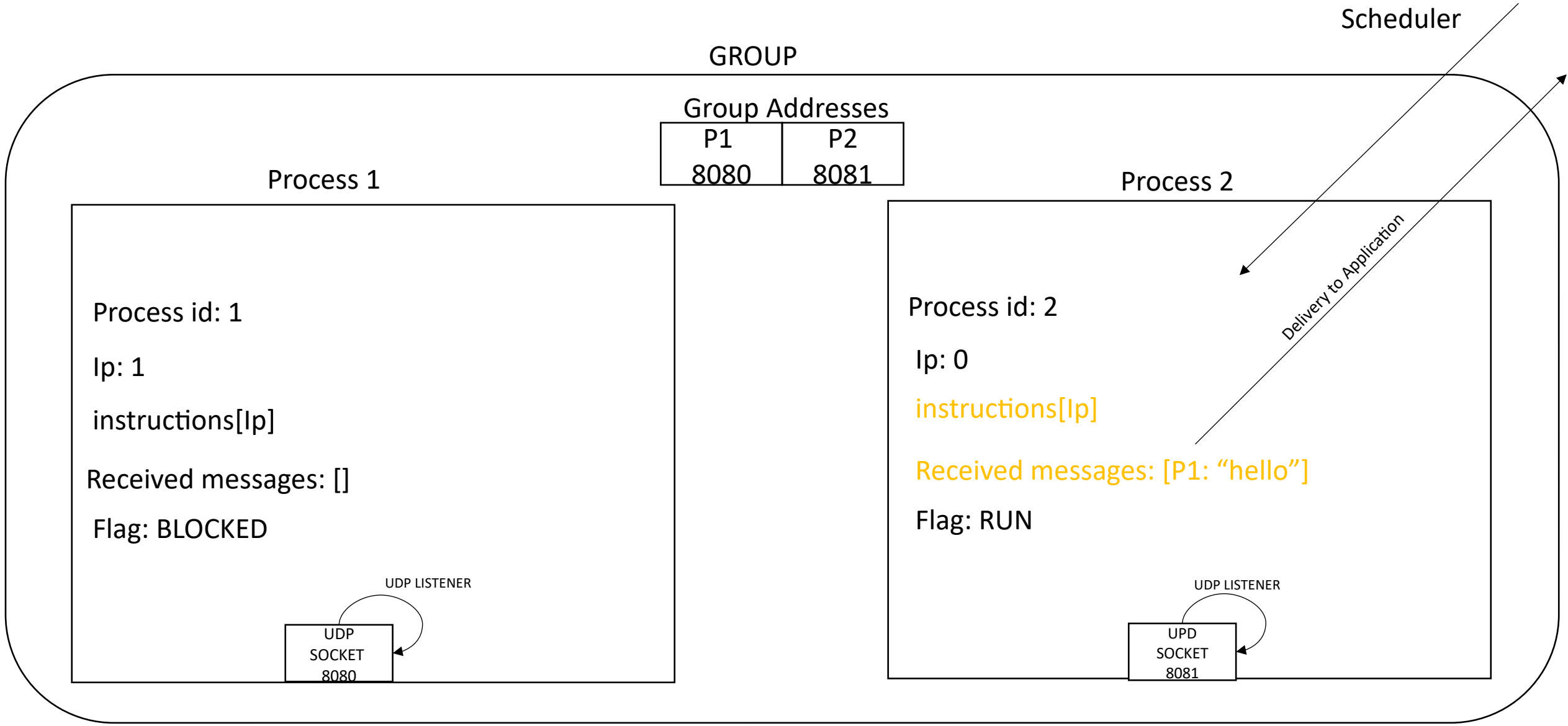
PROCESS API


Scheduler
GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process 2
Process id: 1
Ip: Ip + 1
instructions[Ip]
Received messages: []
Flag: BLOCKED
UDP LISTENER
UDP
SOCKET
8080
Process id: 2
Ip: 0
instructions[Ip]
Received messages: [P1: “hello”]
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081
ACK

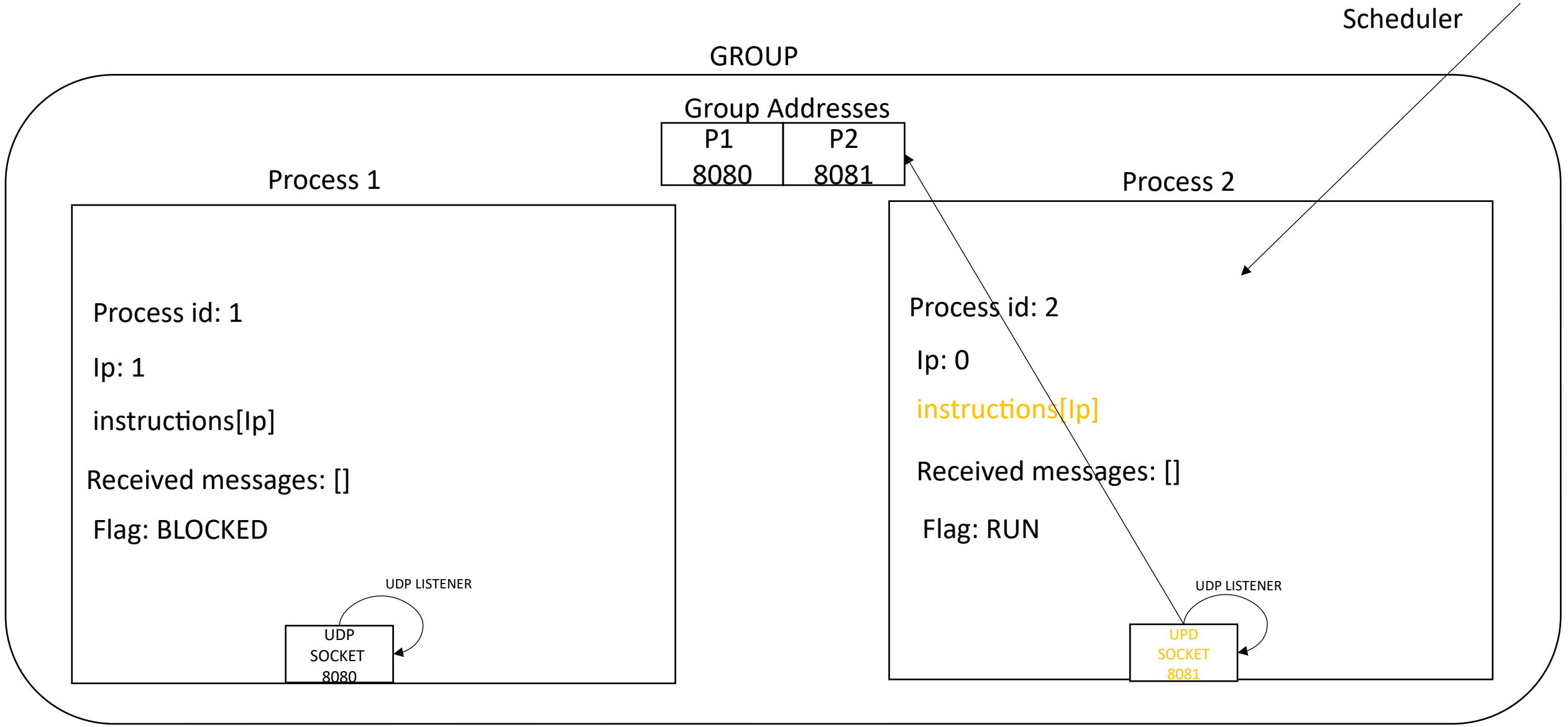
PROCESS API


Scheduler
GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process id: 1
Ip: 1
instructions[Ip]
Received messages: []
Flag: BLOCKED
UDP LISTENER
UDP
SOCKET
8080
Process 2
Process id: 2
Ip: 0
instructions[Ip] (Receive p1 $a)
Received messages: [P1: “hello”]
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081

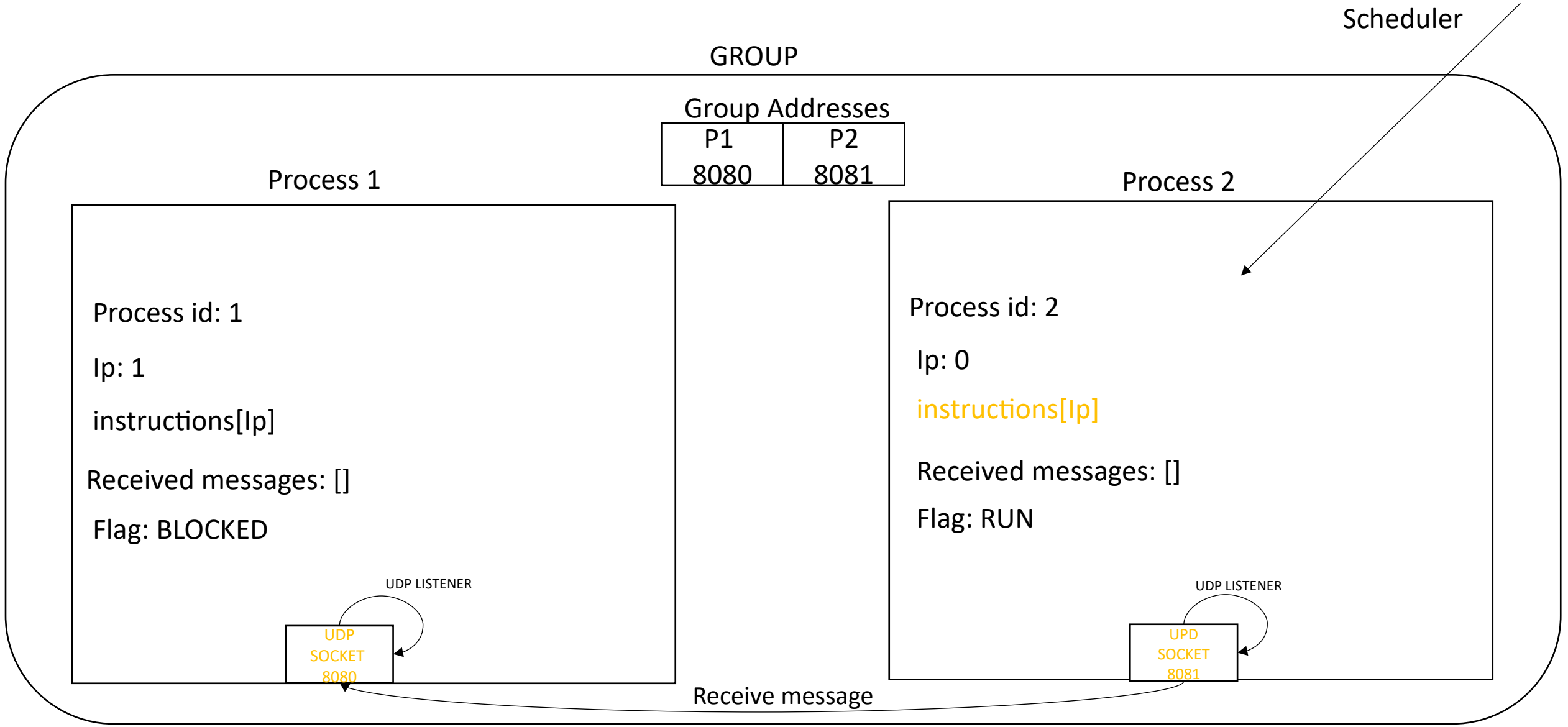
PROCESS API


Scheduler
GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process id: 1
Ip: 1
instructions[Ip]
Received messages: []
Flag: BLOCKED
UDP LISTENER
UDP
SOCKET
8080
Process 2
Delivery to Application
Process id: 2
Ip: 0
instructions[Ip]
Received messages: [P1: “hello”]
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081

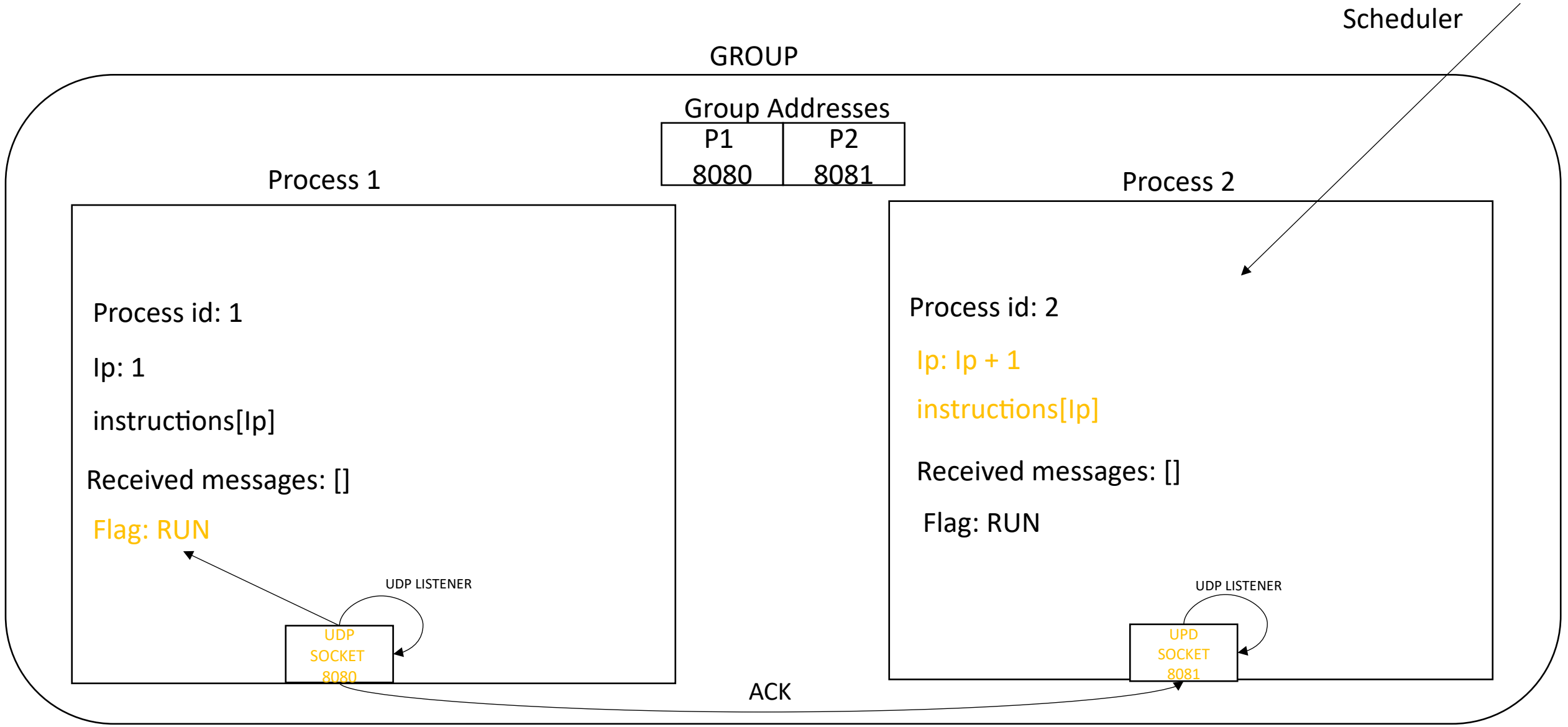
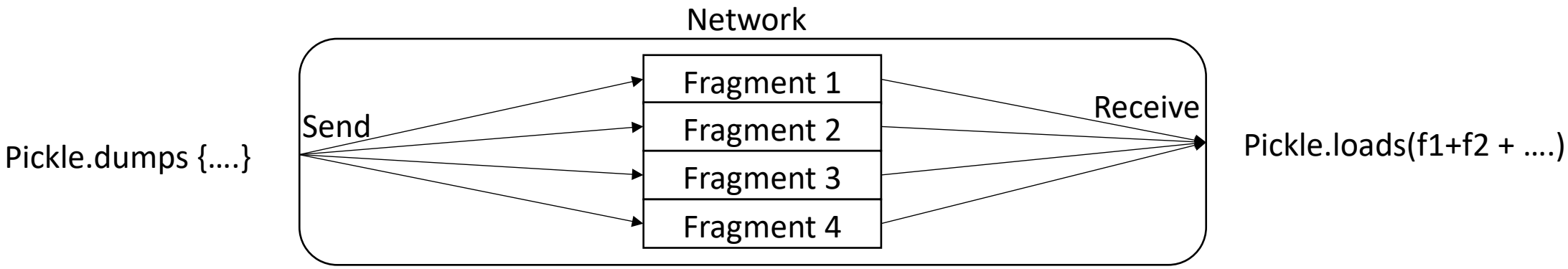
PROCESS API


Scheduler
GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process id: 1
Ip: 1
instructions[Ip]
Received messages: []
Flag: BLOCKED
UDP LISTENER
UDP
SOCKET
8080
Process 2
Process id: 2
Ip: 0
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081

PROCESS API


Scheduler
GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process id: 1
Ip: 1
instructions[Ip]
Received messages: []
Flag: BLOCKED
UDP LISTENER
UDP
SOCKET
8080
Process 2
Process id: 2
Ip: 0
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081
Receive message

PROCESS API


Scheduler
GROUP
Group Addresses
P1
8080
P2
8081
Process 1
Process id: 1
Ip: 1
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UDP
SOCKET
8080
Process 2
Process id: 2
Ip: Ip + 1
instructions[Ip]
Received messages: []
Flag: RUN
UDP LISTENER
UPD
SOCKET
8081
ACK

SERIALIZE DATA