

# Distributed Systems

Στολτίδης Αλέξανδρος 2824  
Κουτσούκης Νικόλαος 2907



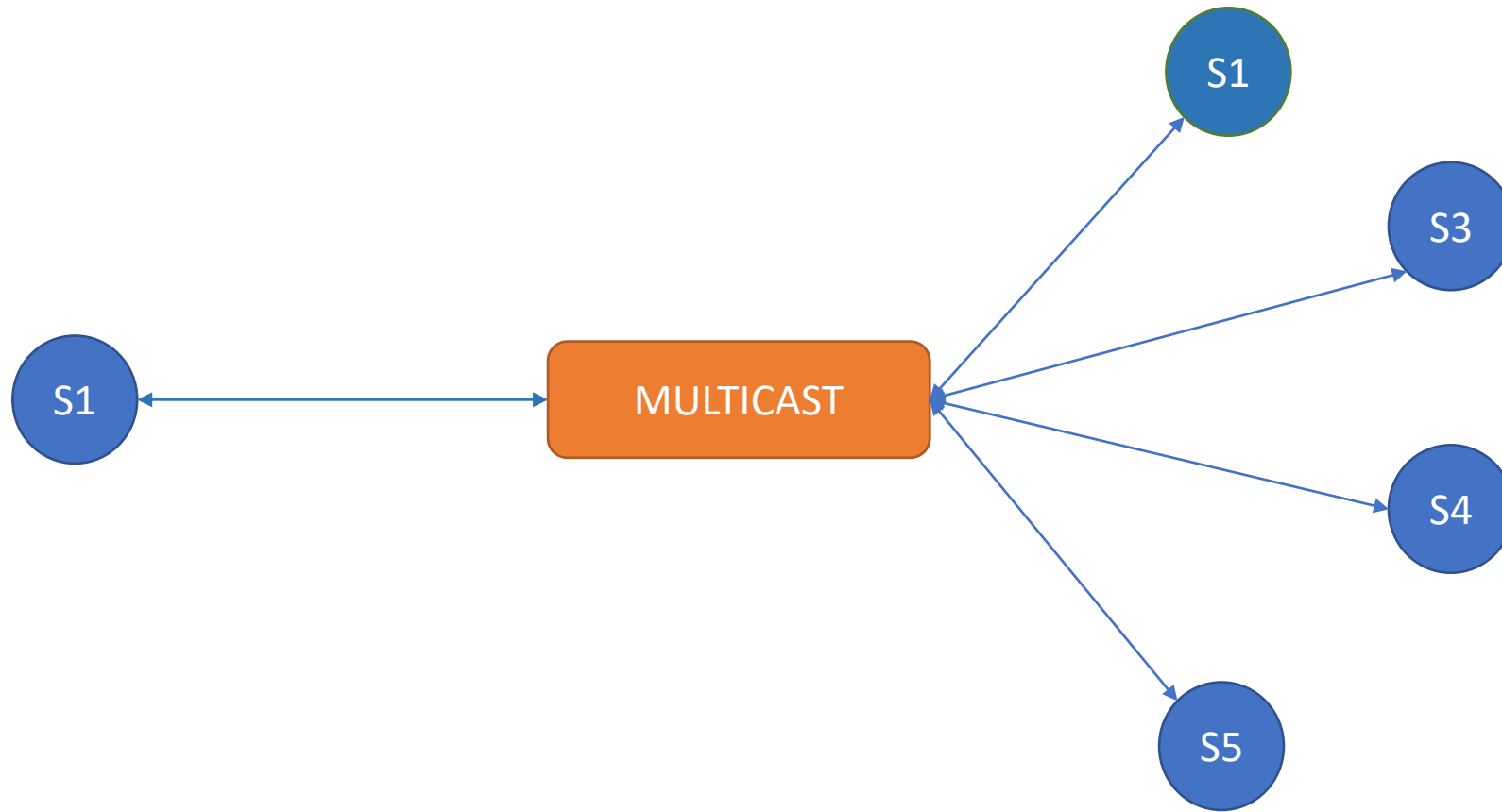
DEPARTMENT OF ELECTRICAL  
& COMPUTER ENGINEERING

# Multicast Discovery

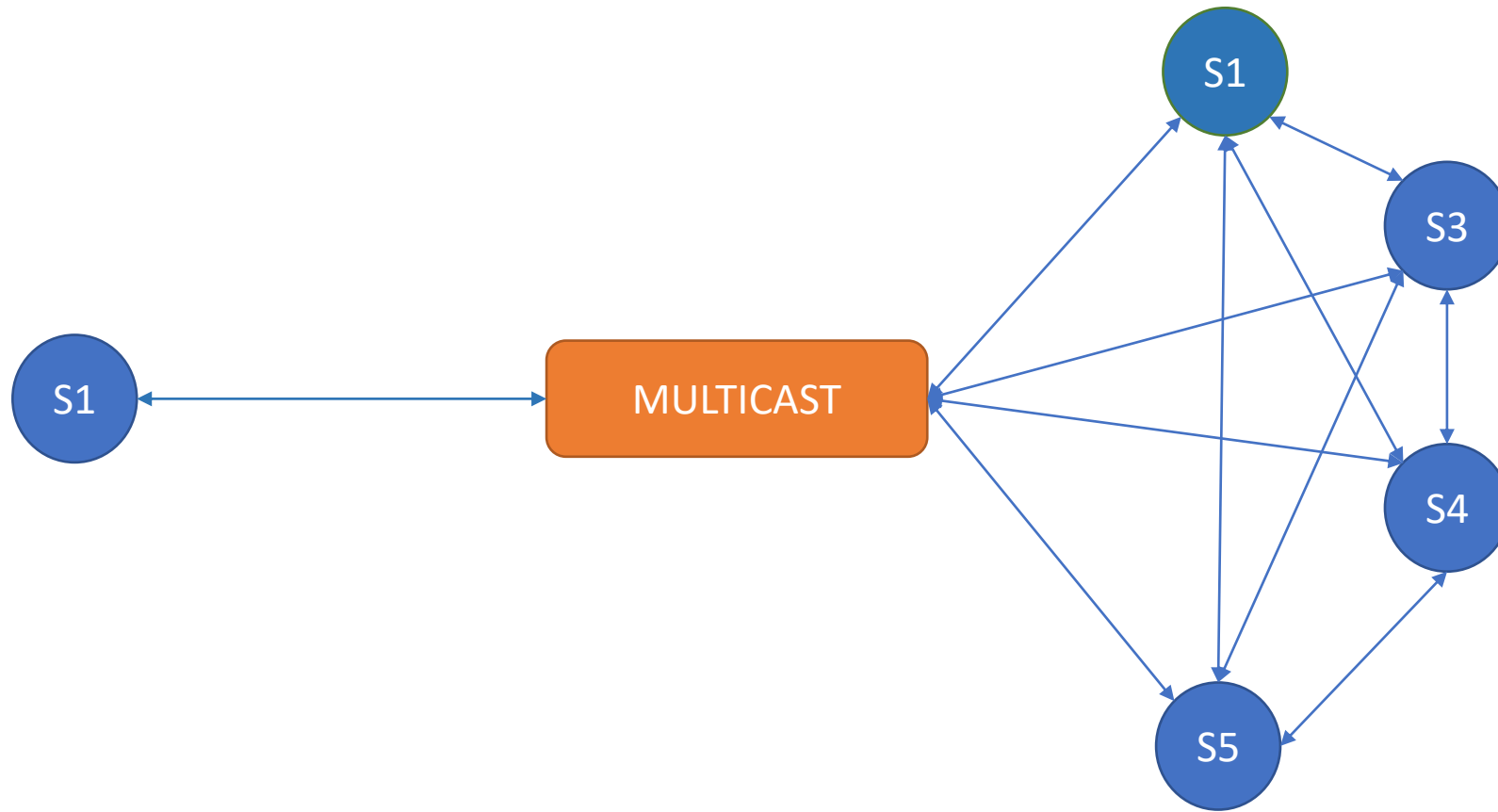
# Between Server Communication (Single Leader)



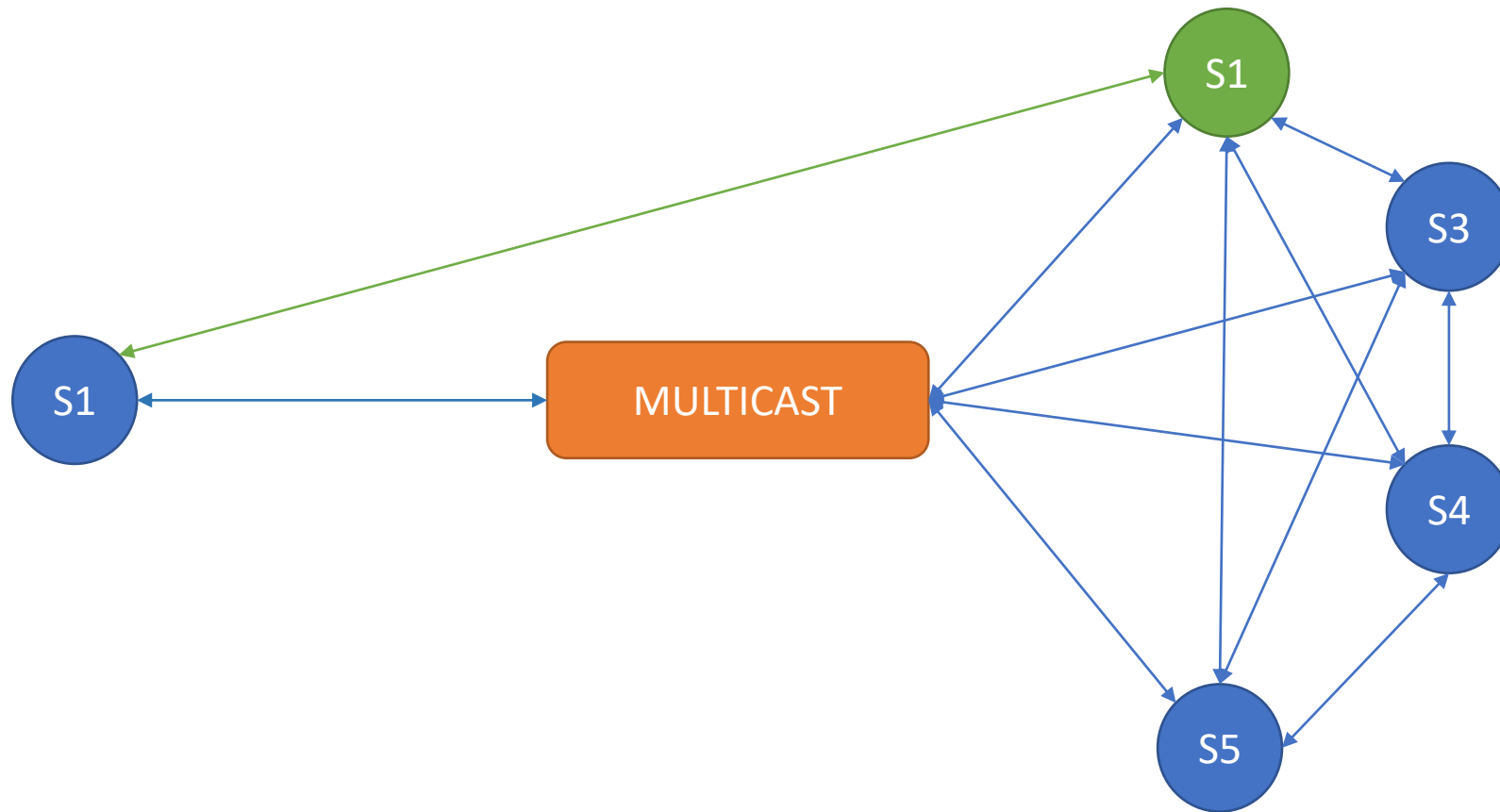
# Between Server Communication (Single Leader)



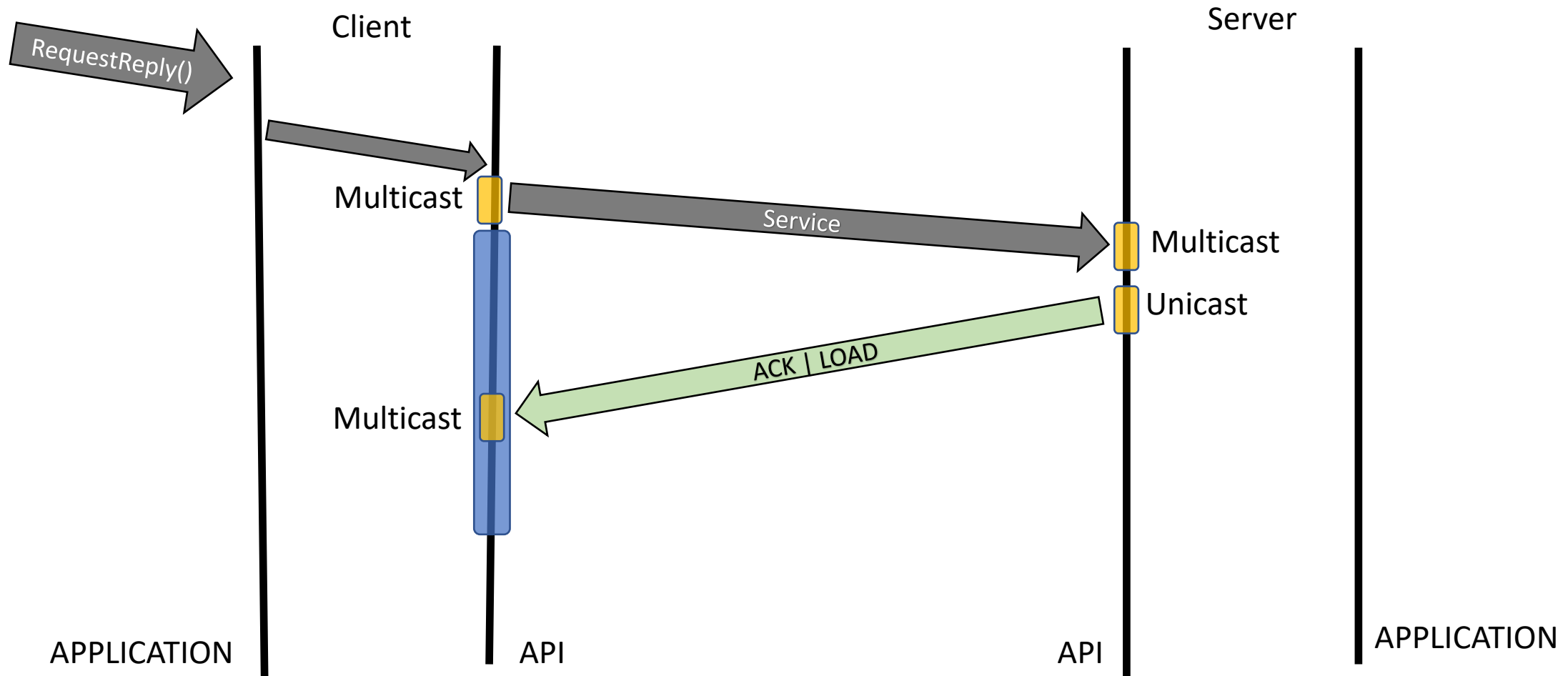
# Between Server Communication (Single Leader)



# Between Server Communication (Single Leader)



# Leader Server Supports Service

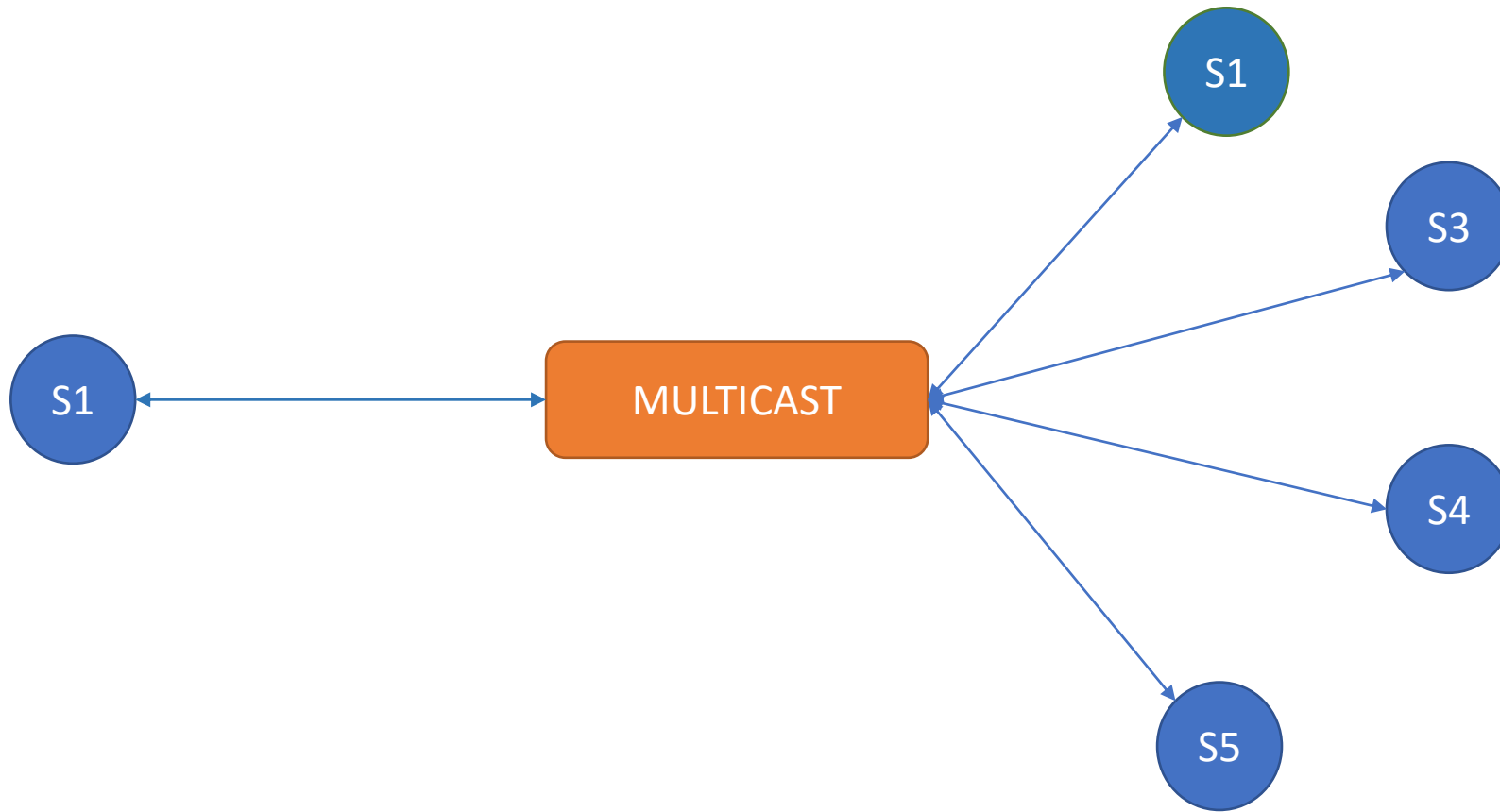


# Between Server Communication (Multiple Leaders)

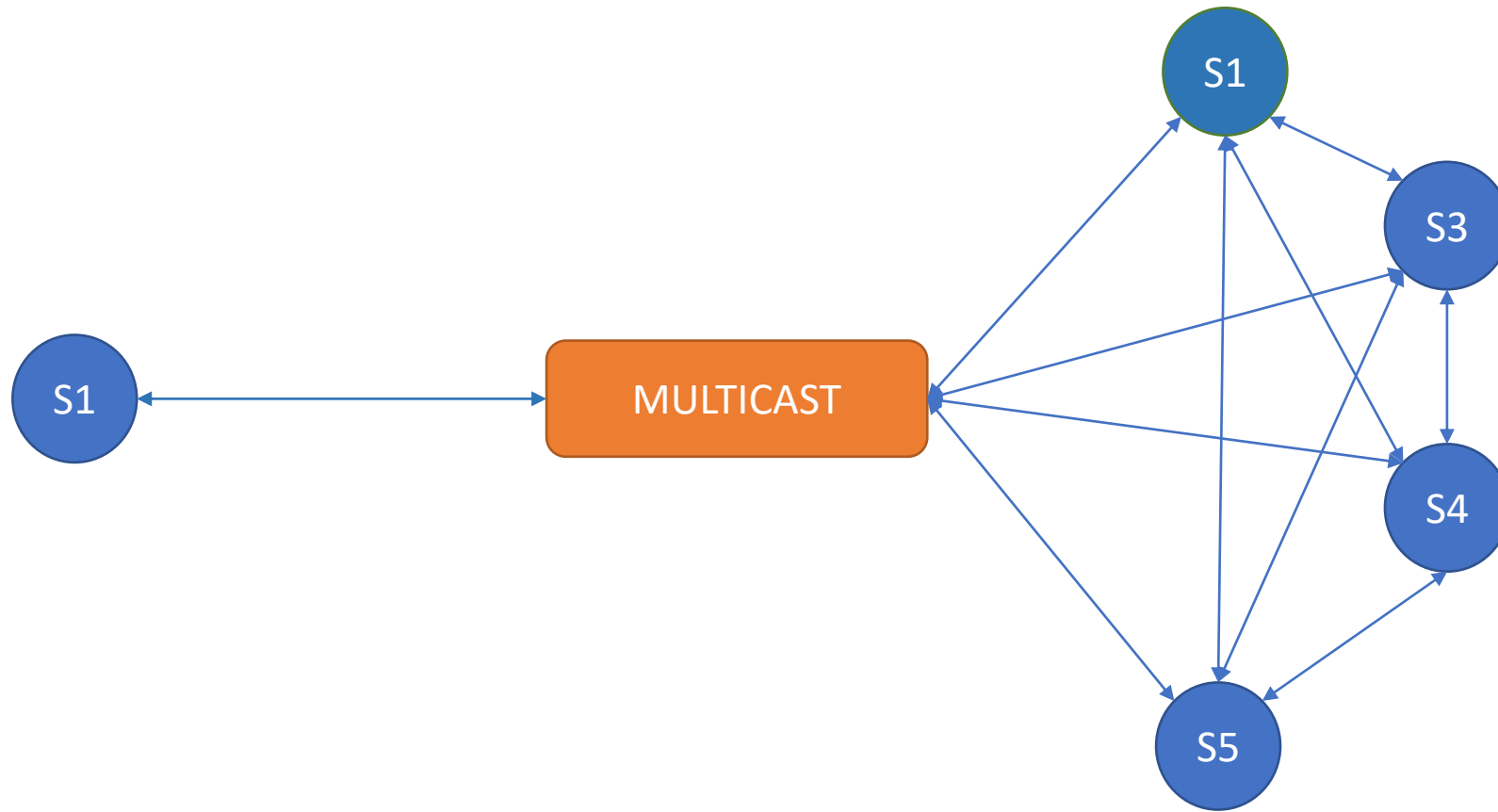




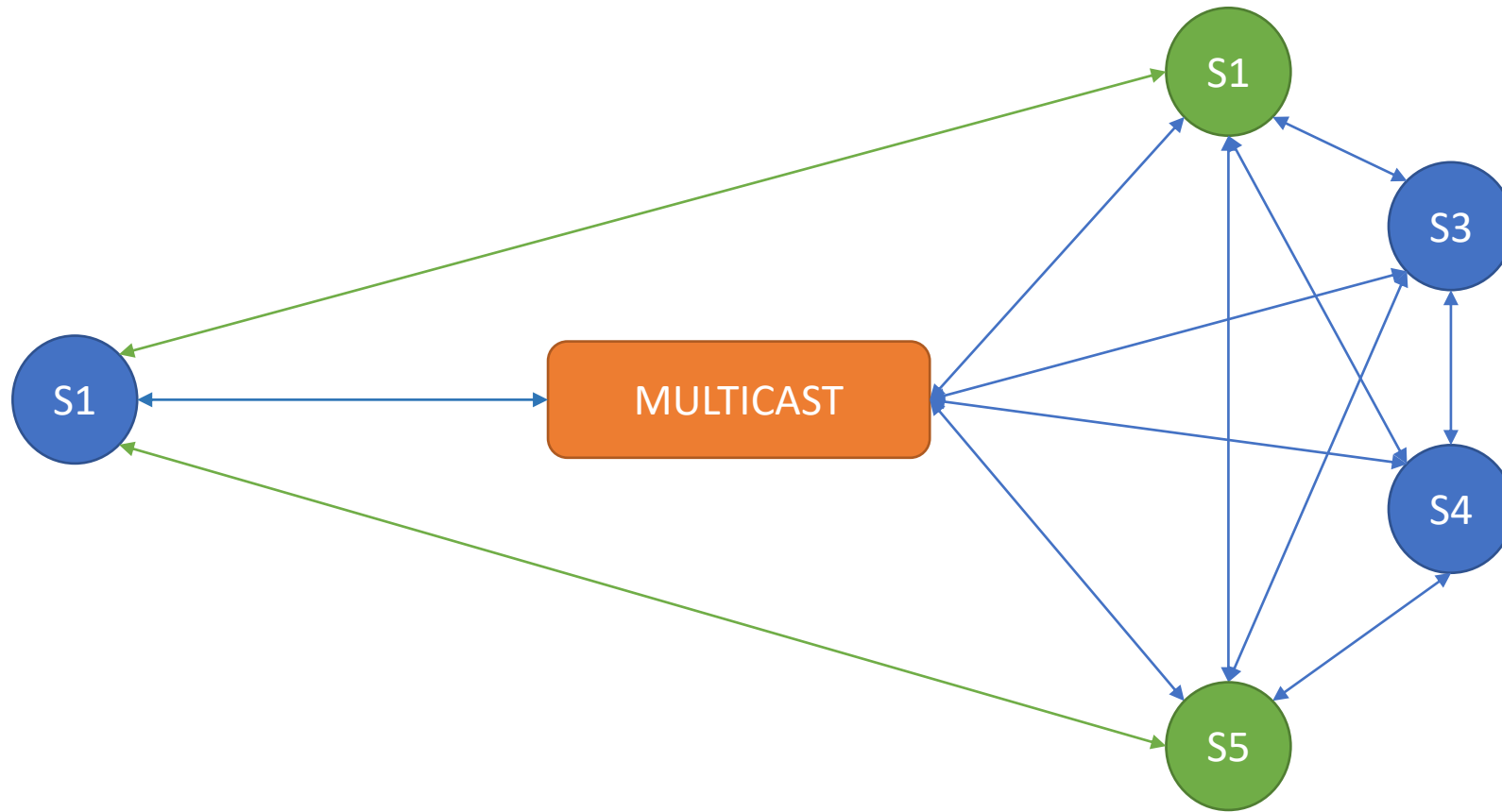
# Between Server Communication (Multiple Leaders)



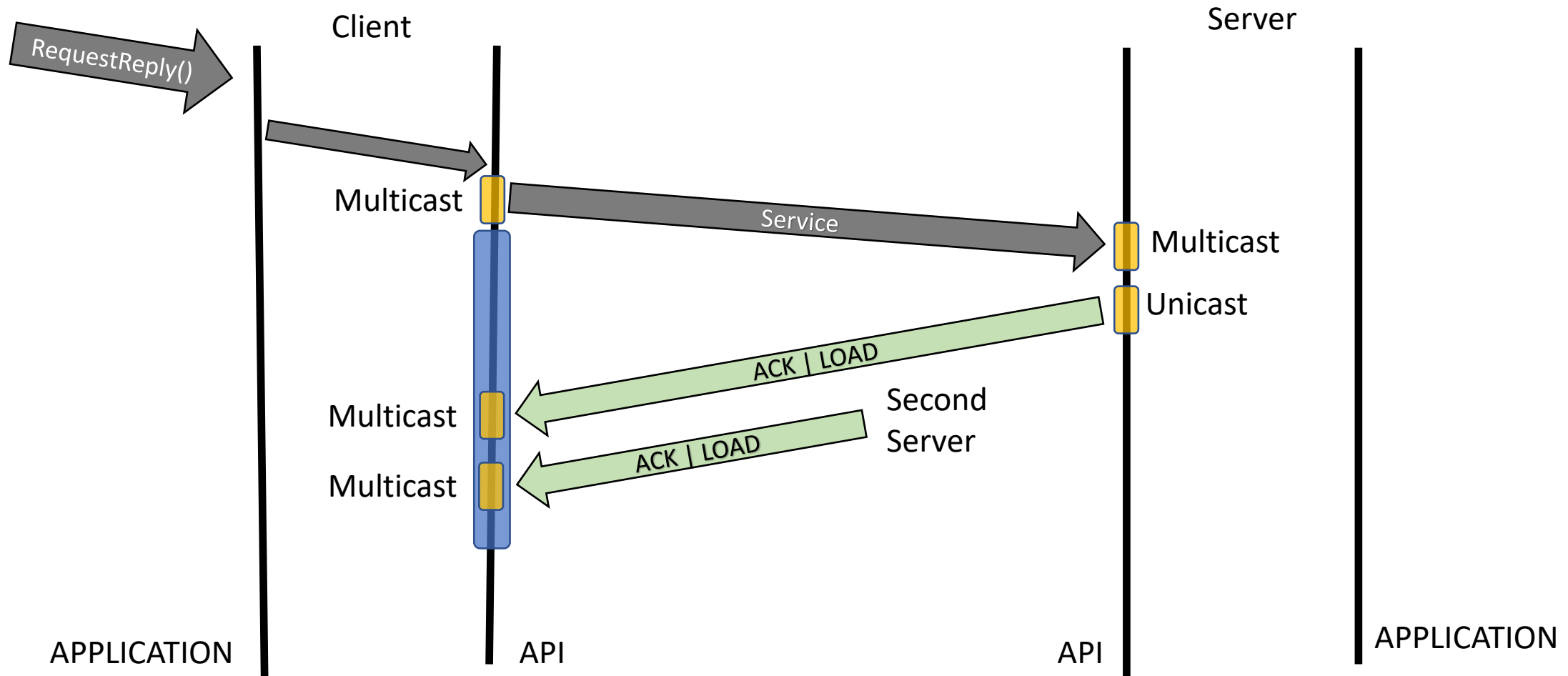
# Between Server Communication (Multiple Leaders)



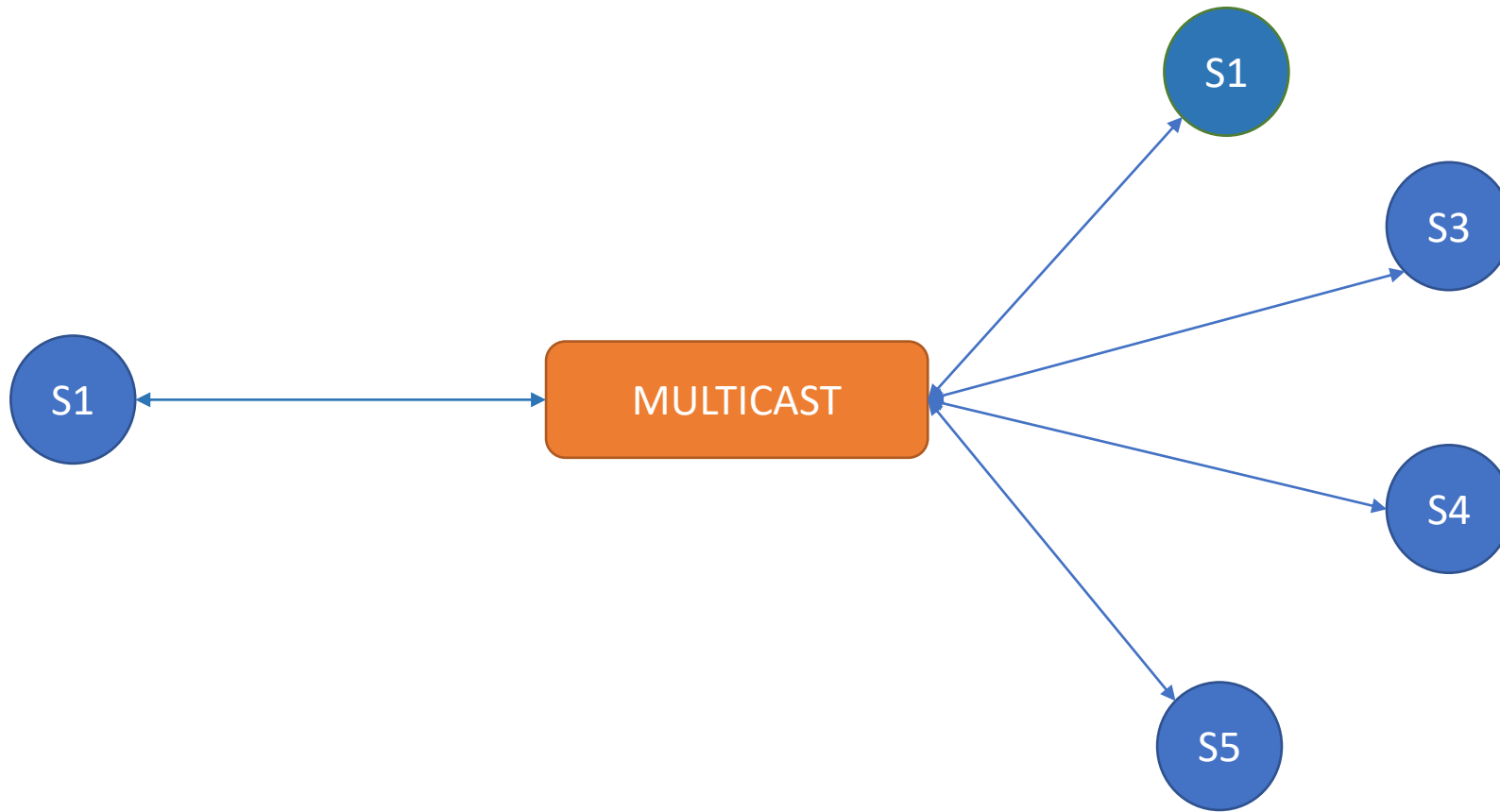
# Between Server Communication (Multiple Leaders)



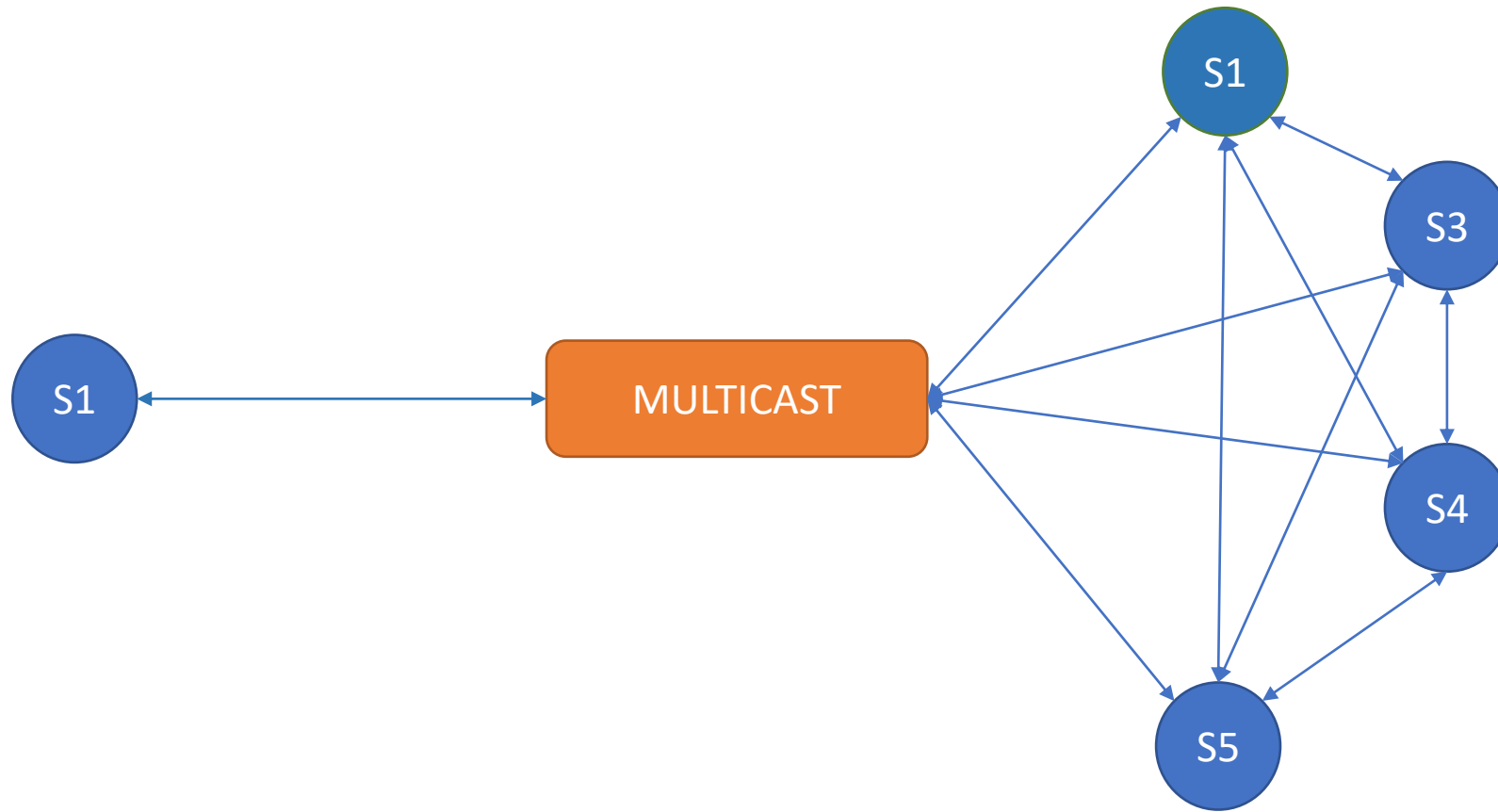
# Leader Server Supports Service (Multiple Leaders)



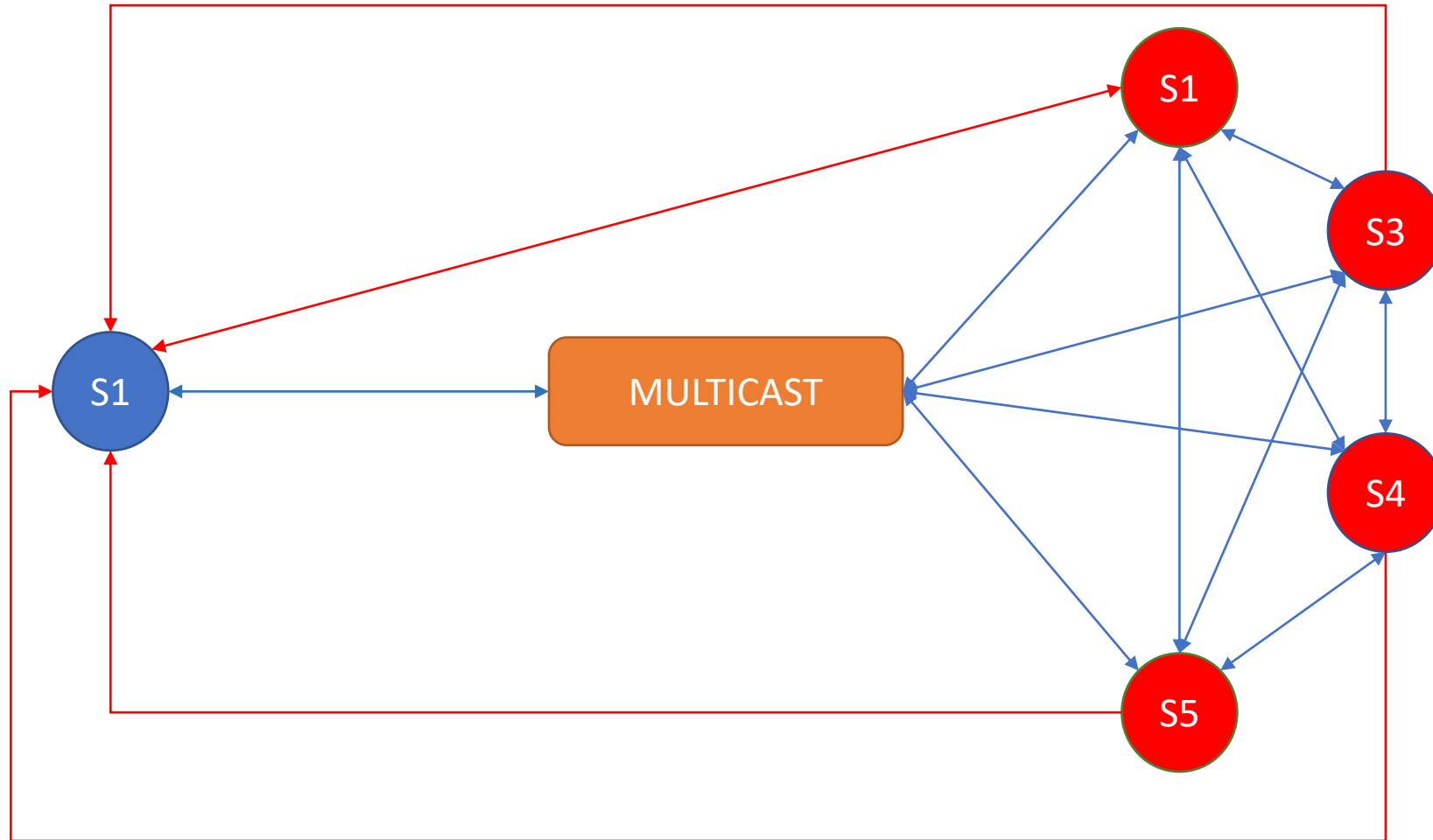
# Between Server Communication (Service Not Supported)



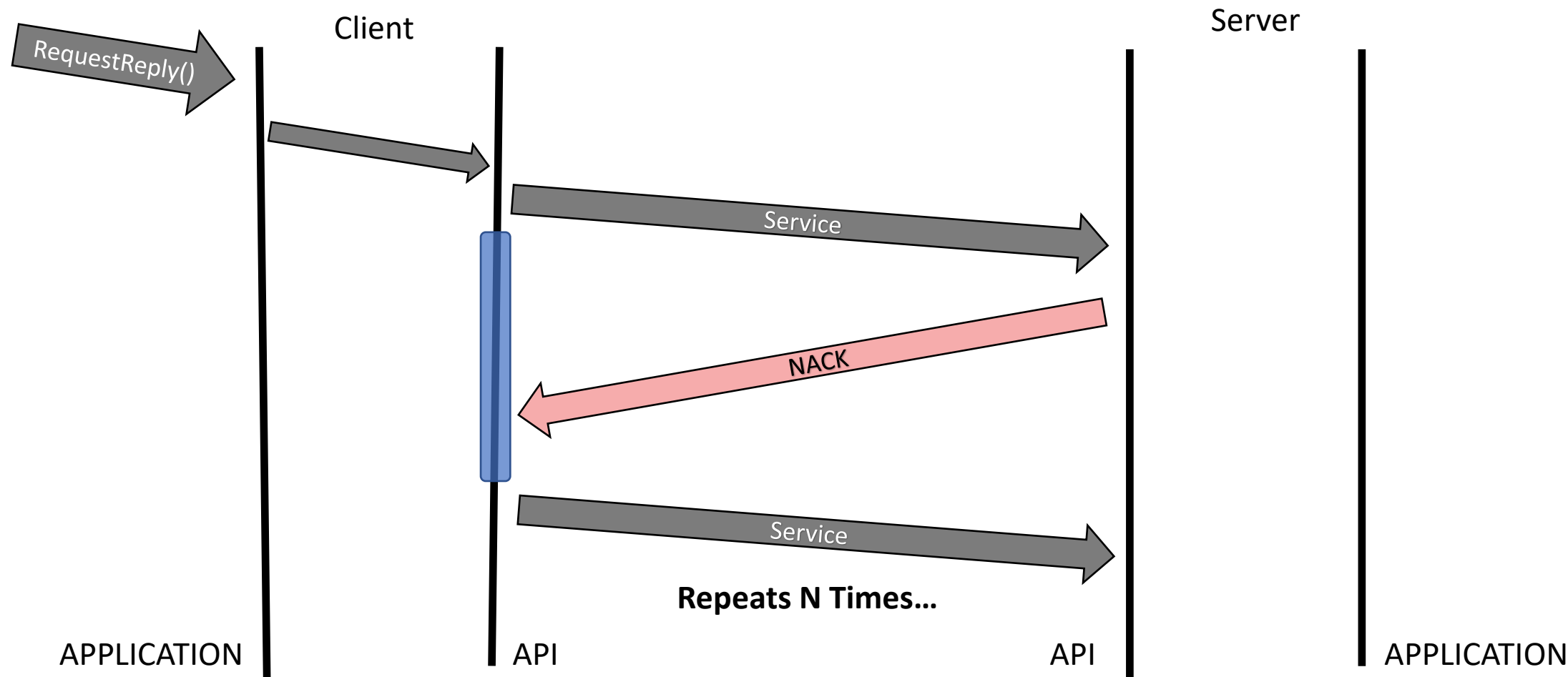
# Between Server Communication (Service Not Supported)



# Between Server Communication (Service Not Supported)

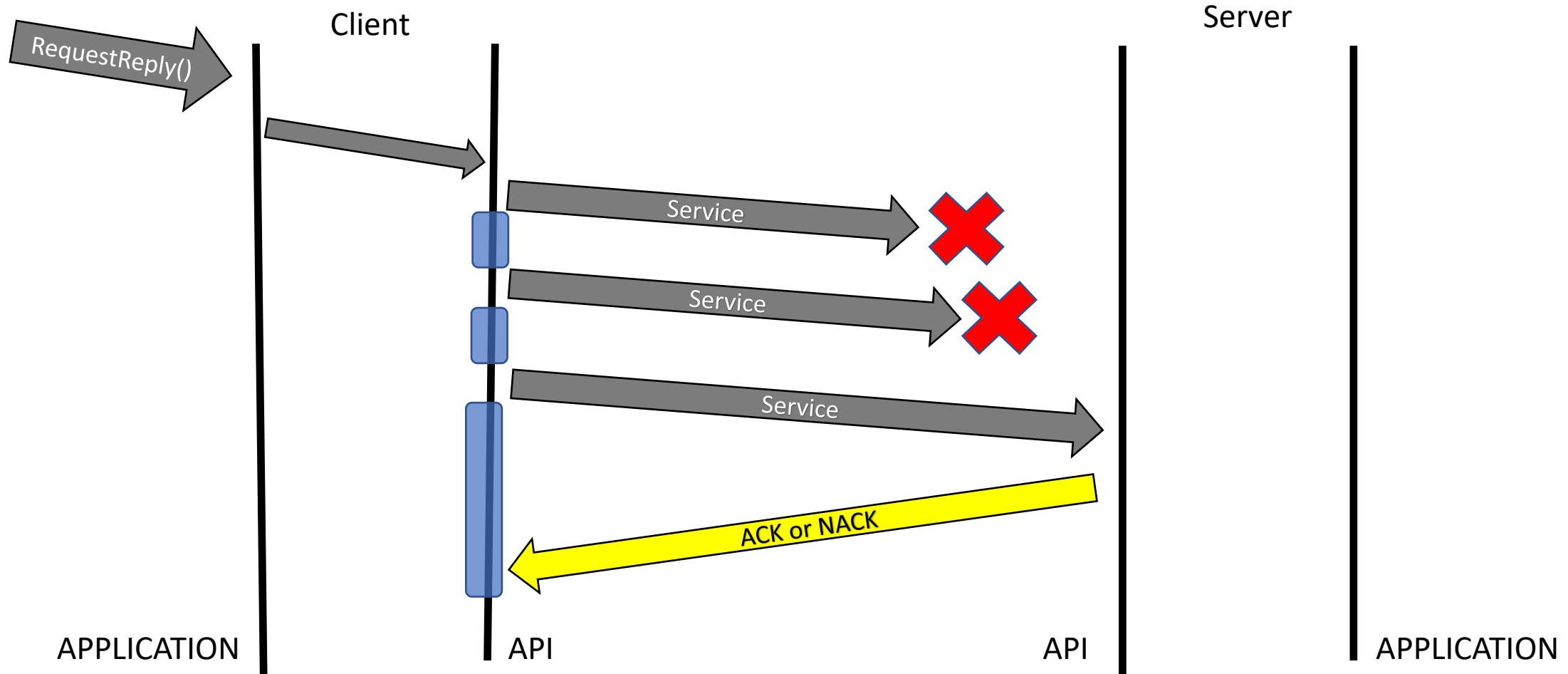


# Server Does NOT Support Service

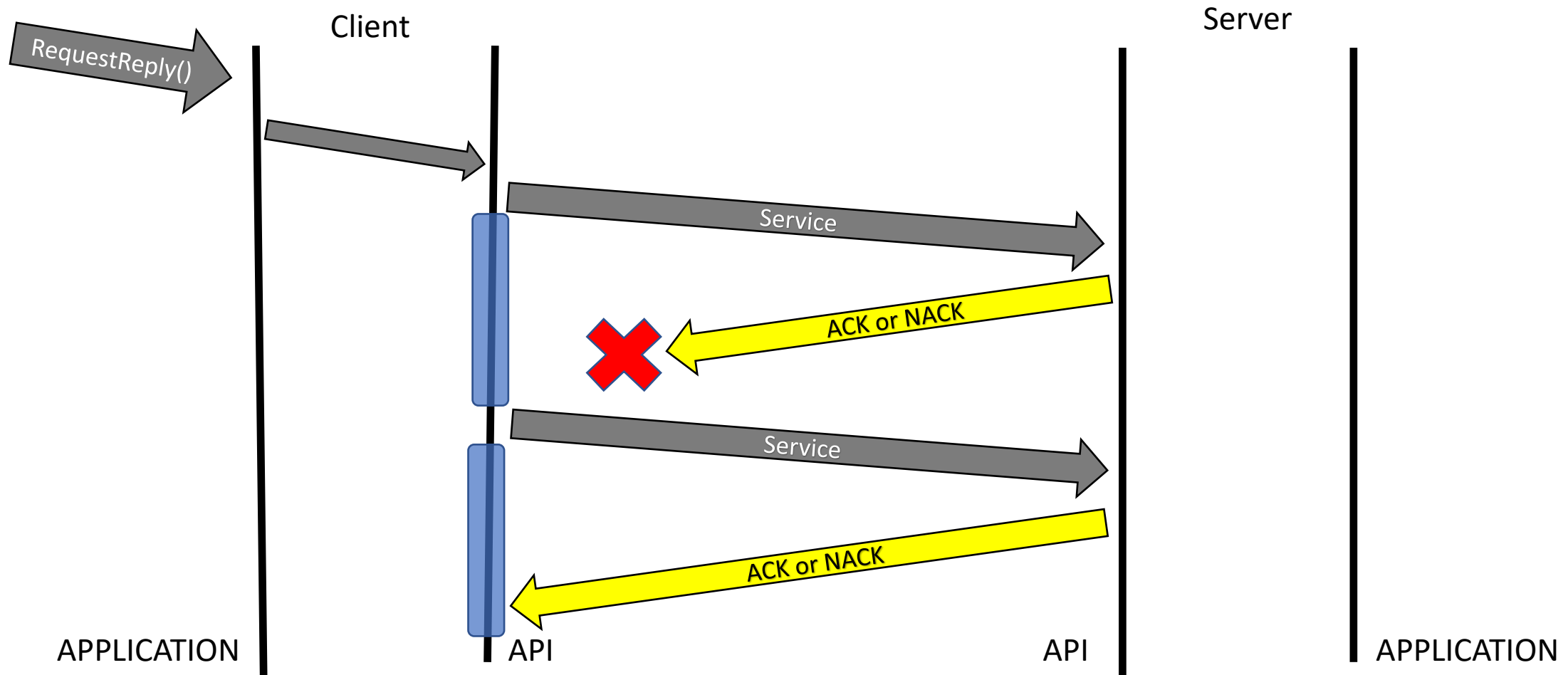




# Multicast Lost Packet on Client Side

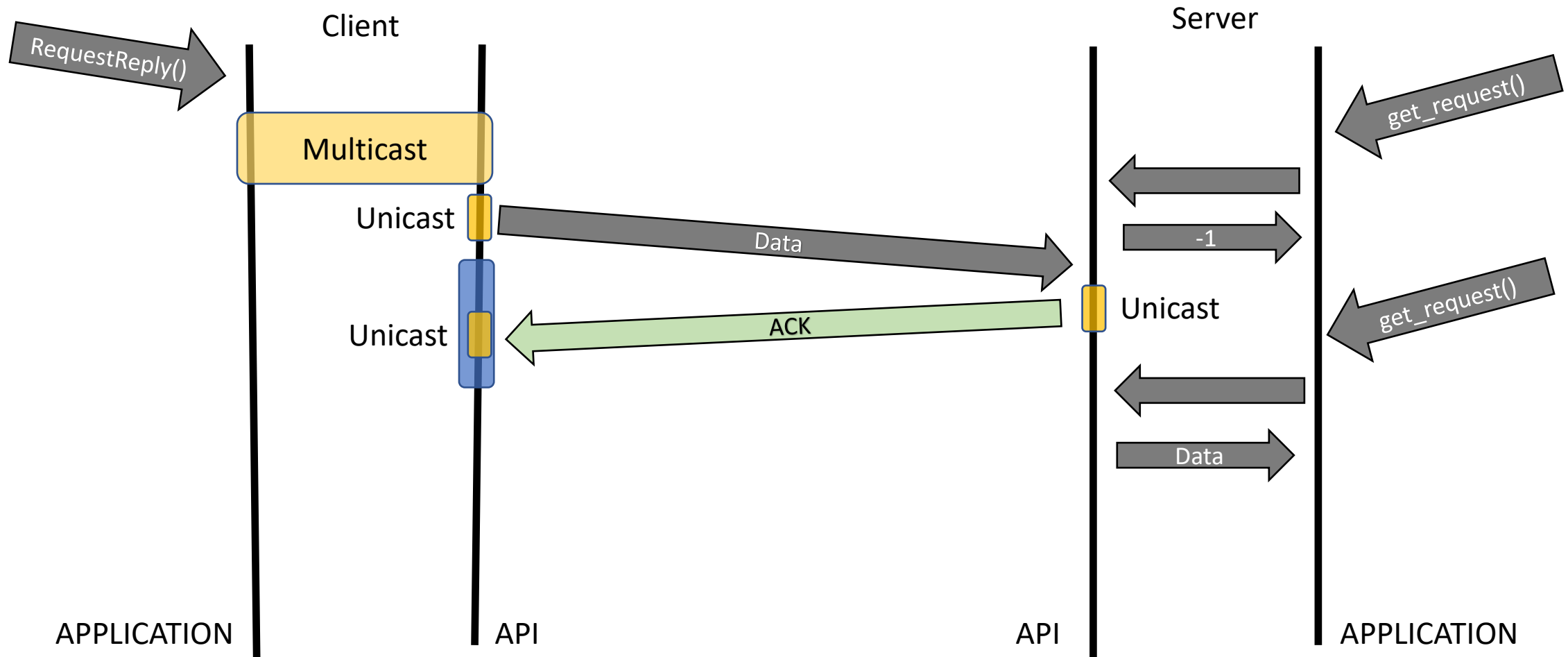


# Multicast Lost Packet on Server Side

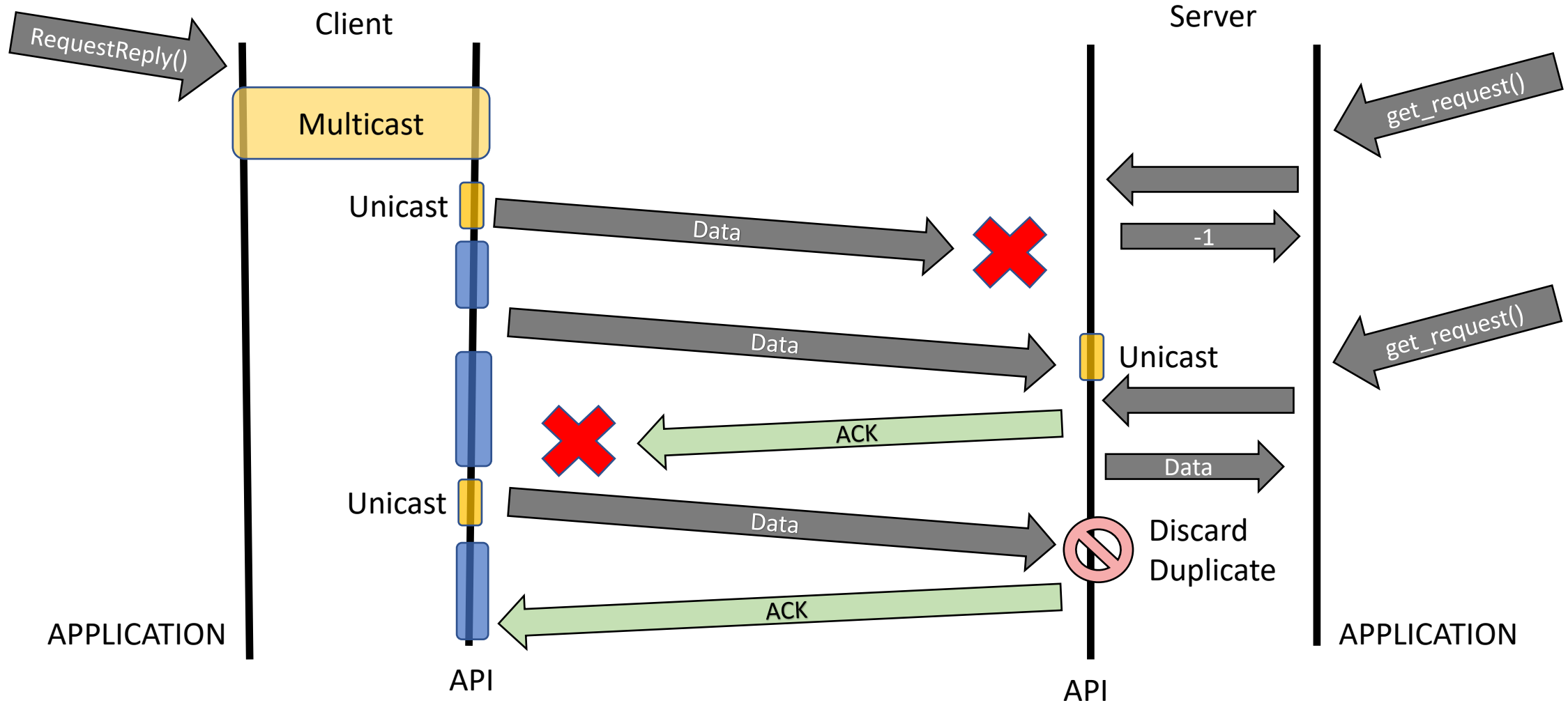


# Unicast Requests

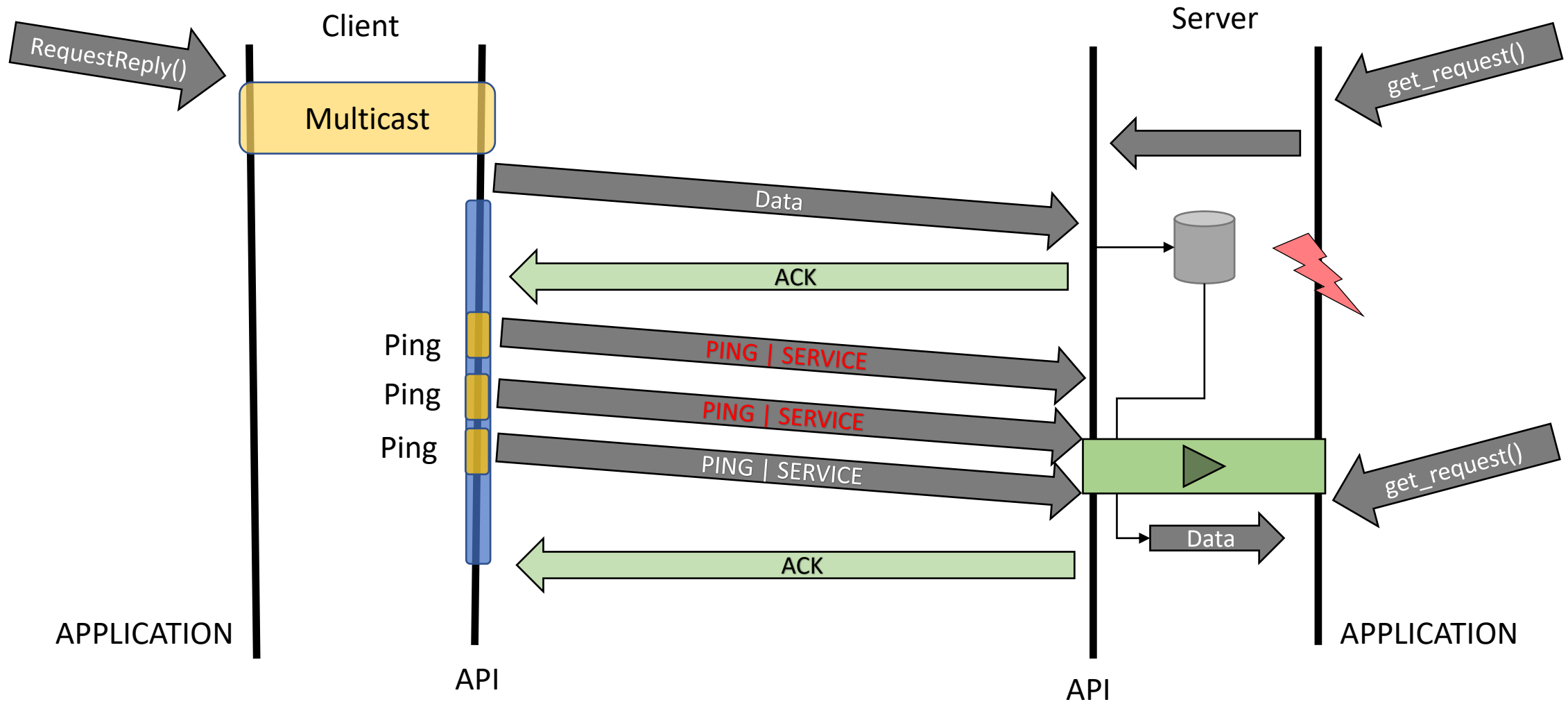
# Successful Unicast Request



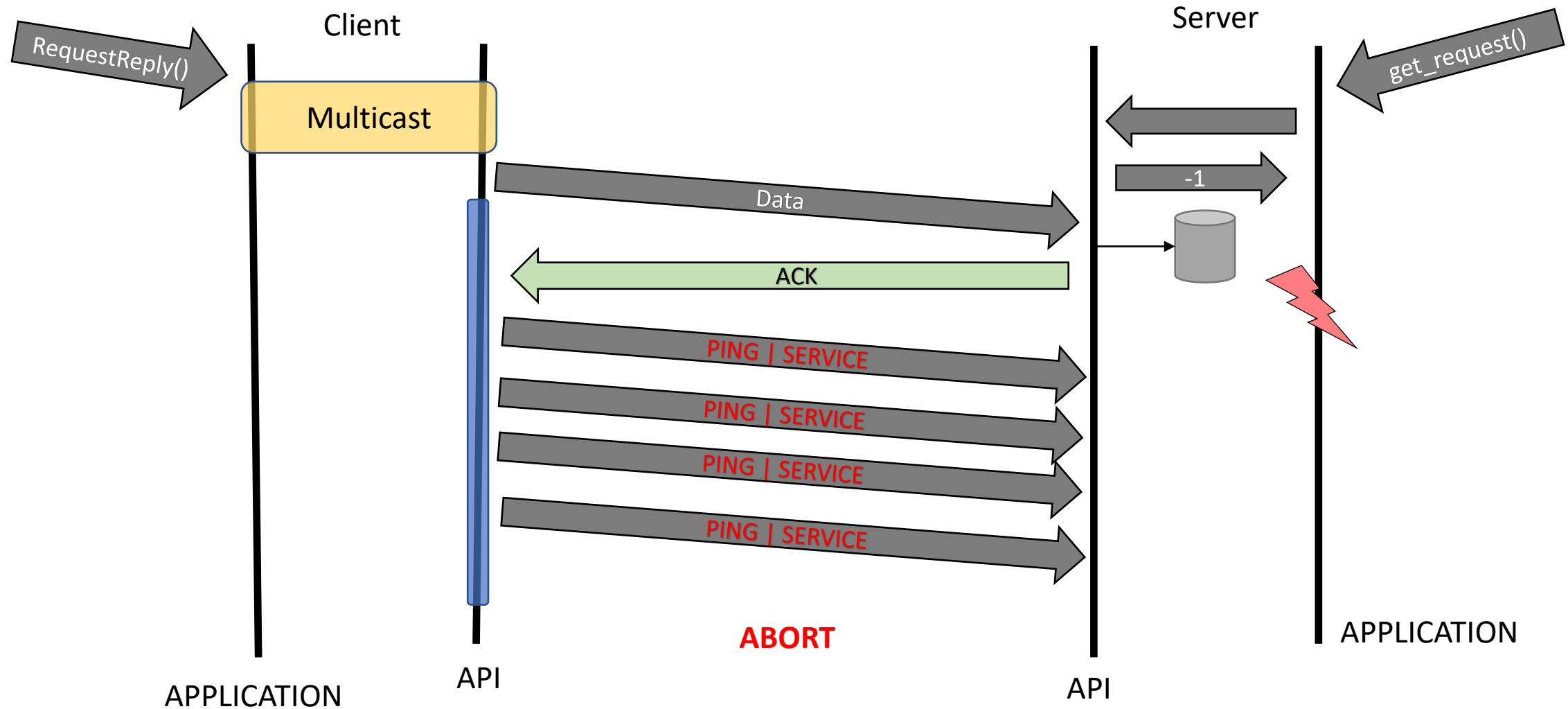
# Lost Unicast Packets (Requests and Acknowledgements)



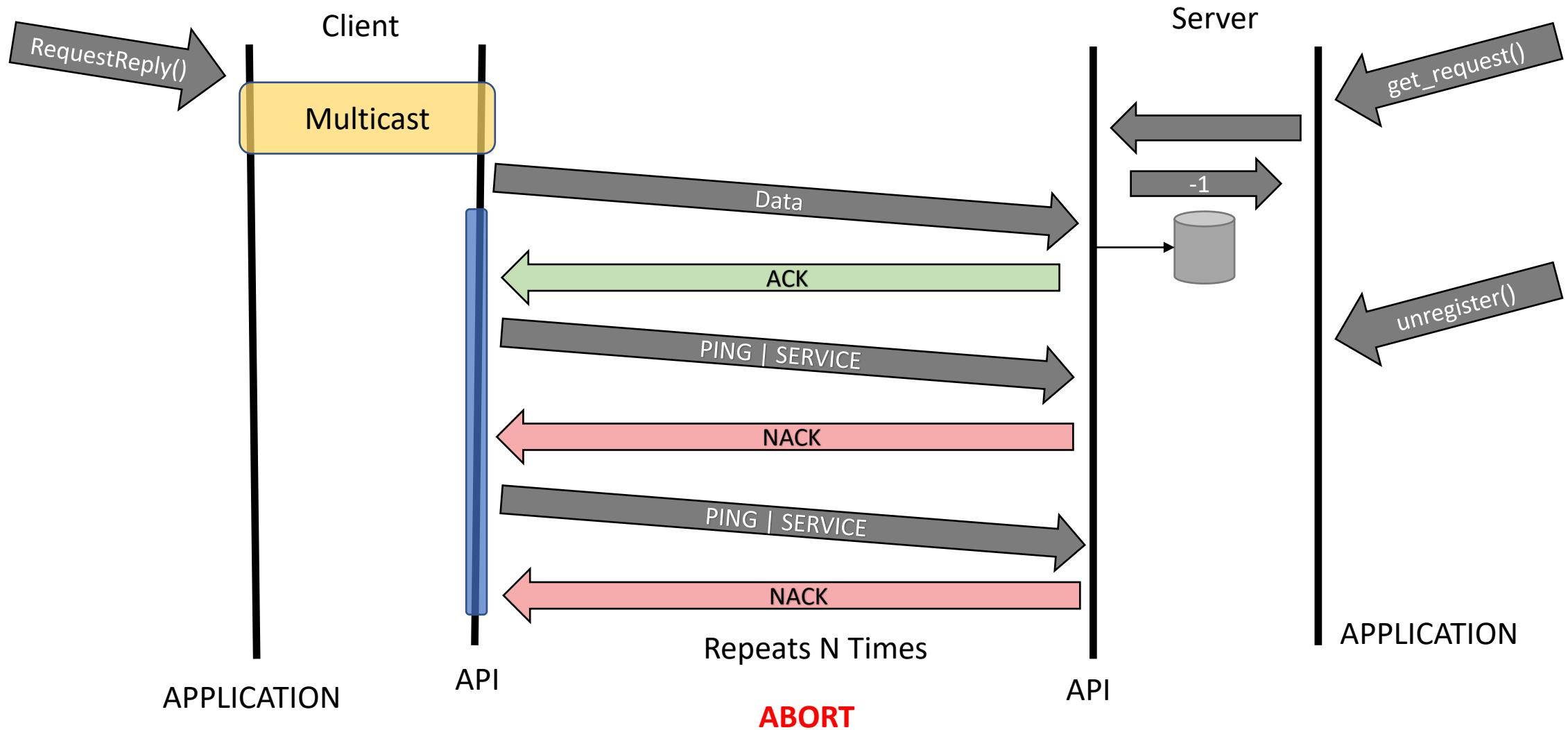
# Server Failure with Silent Crash Approach



# Server Failure – Server Does Not Recover

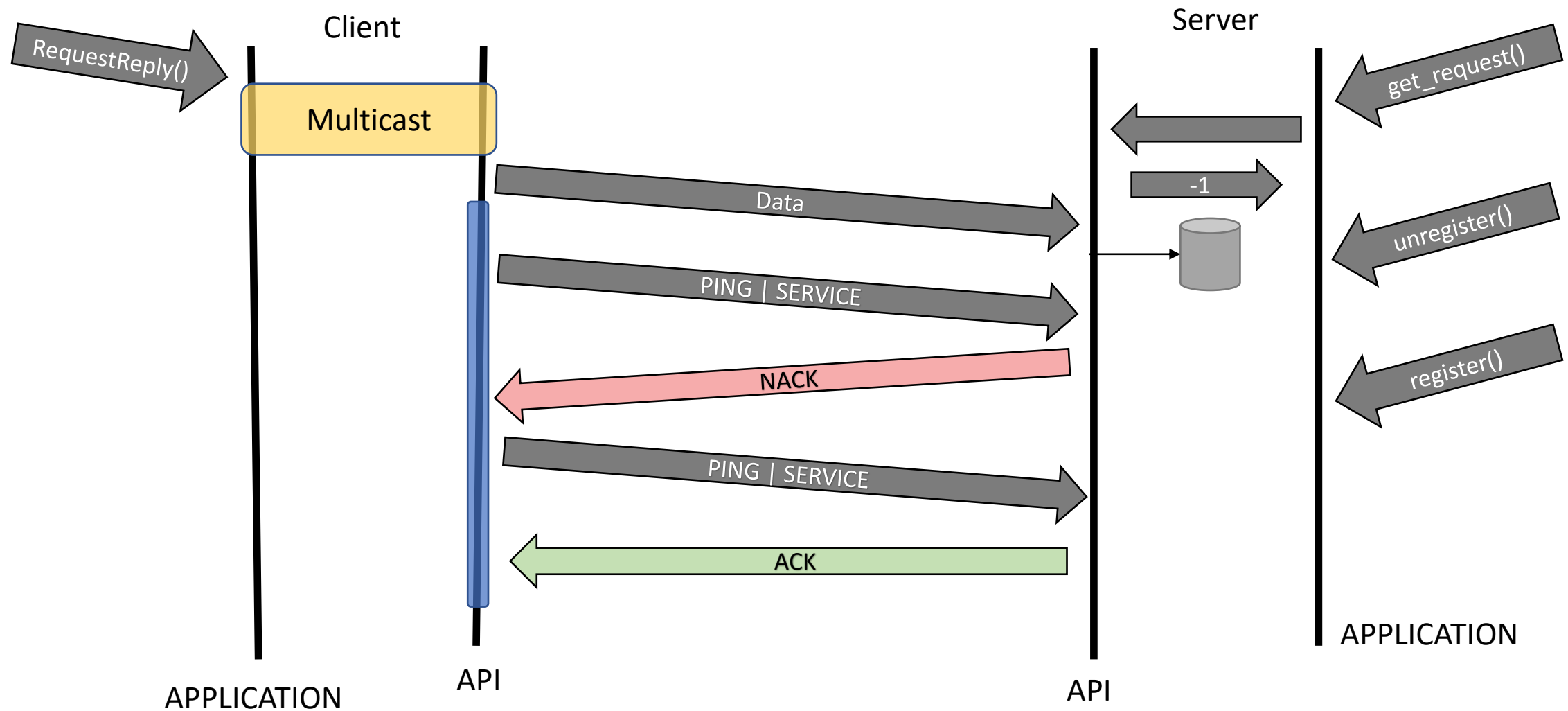


# Server's Service is Unregistered

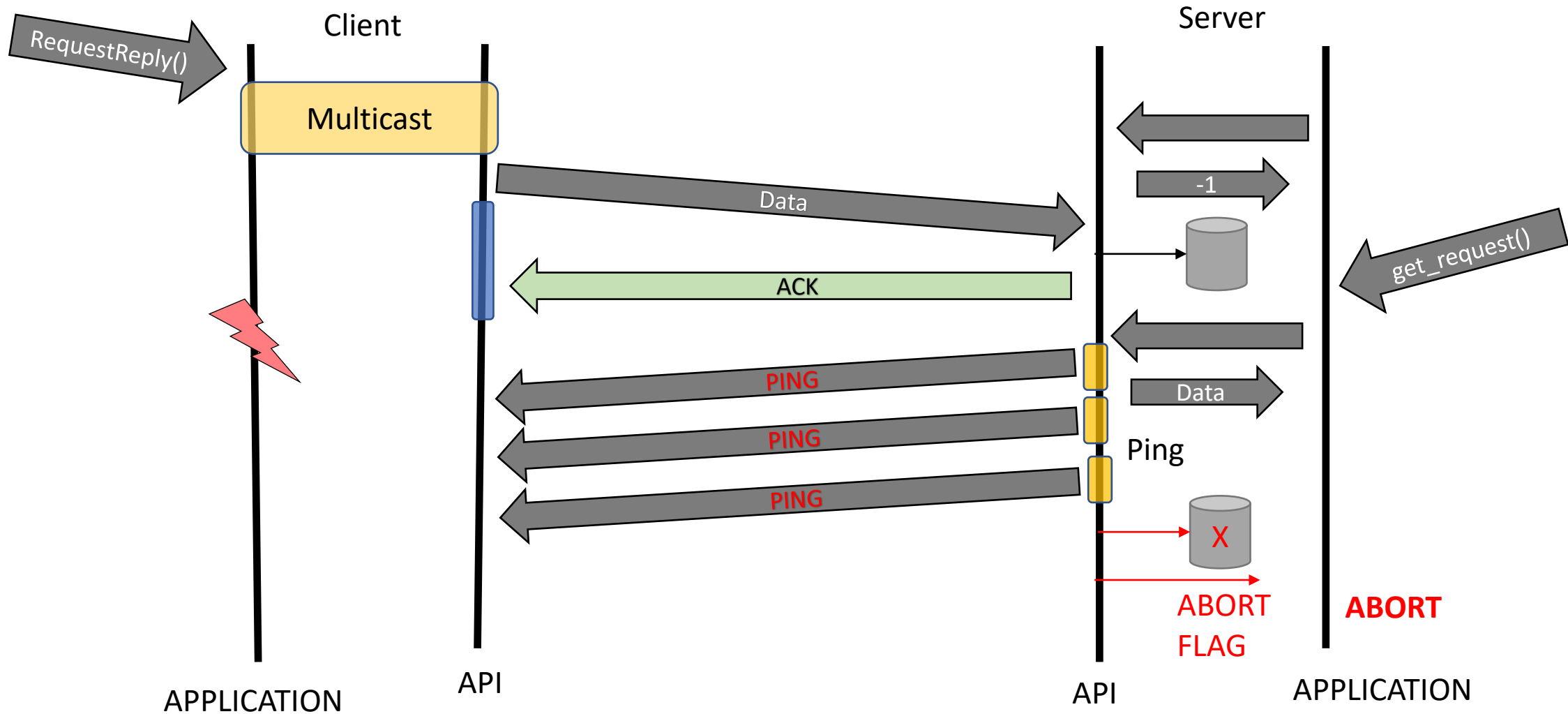




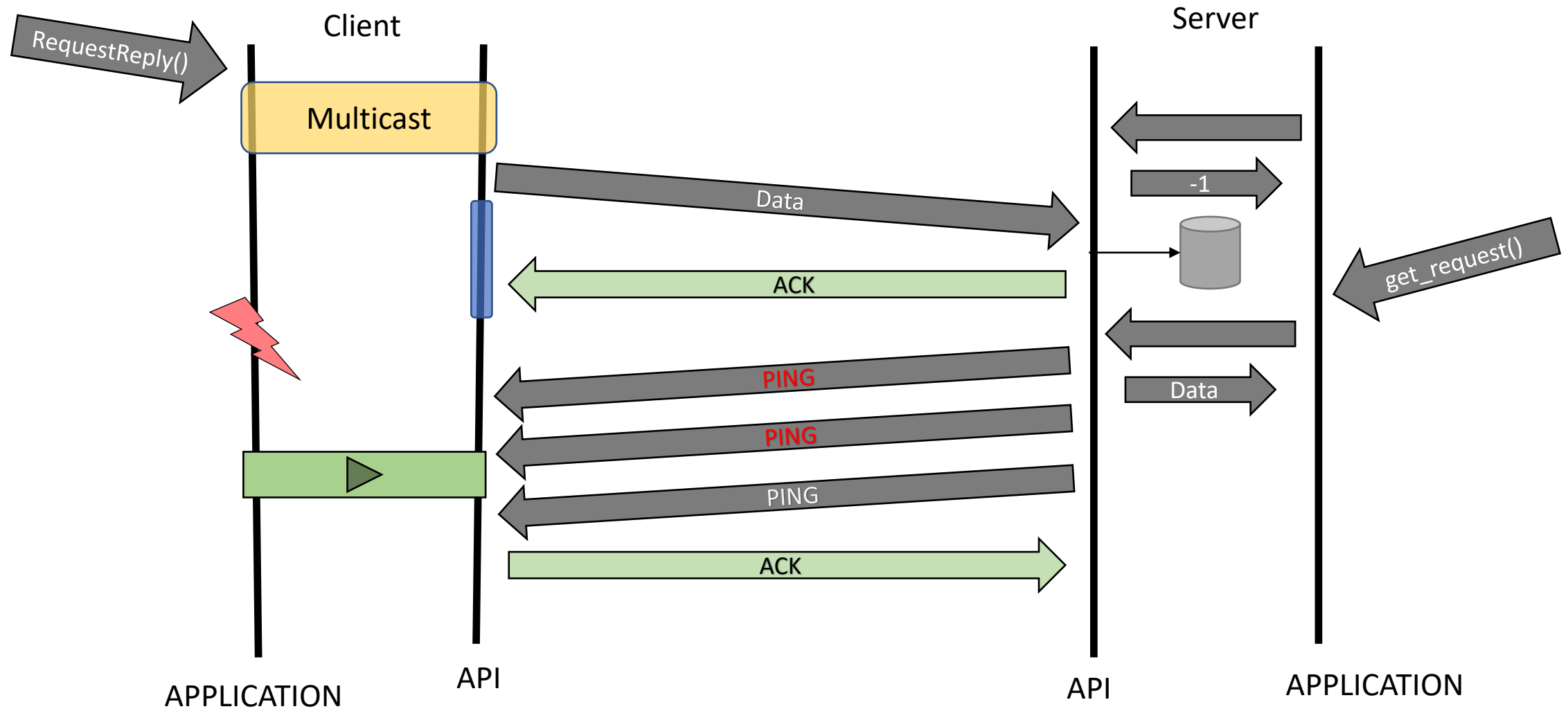
# Server's Service is Unregistered and Registered Again



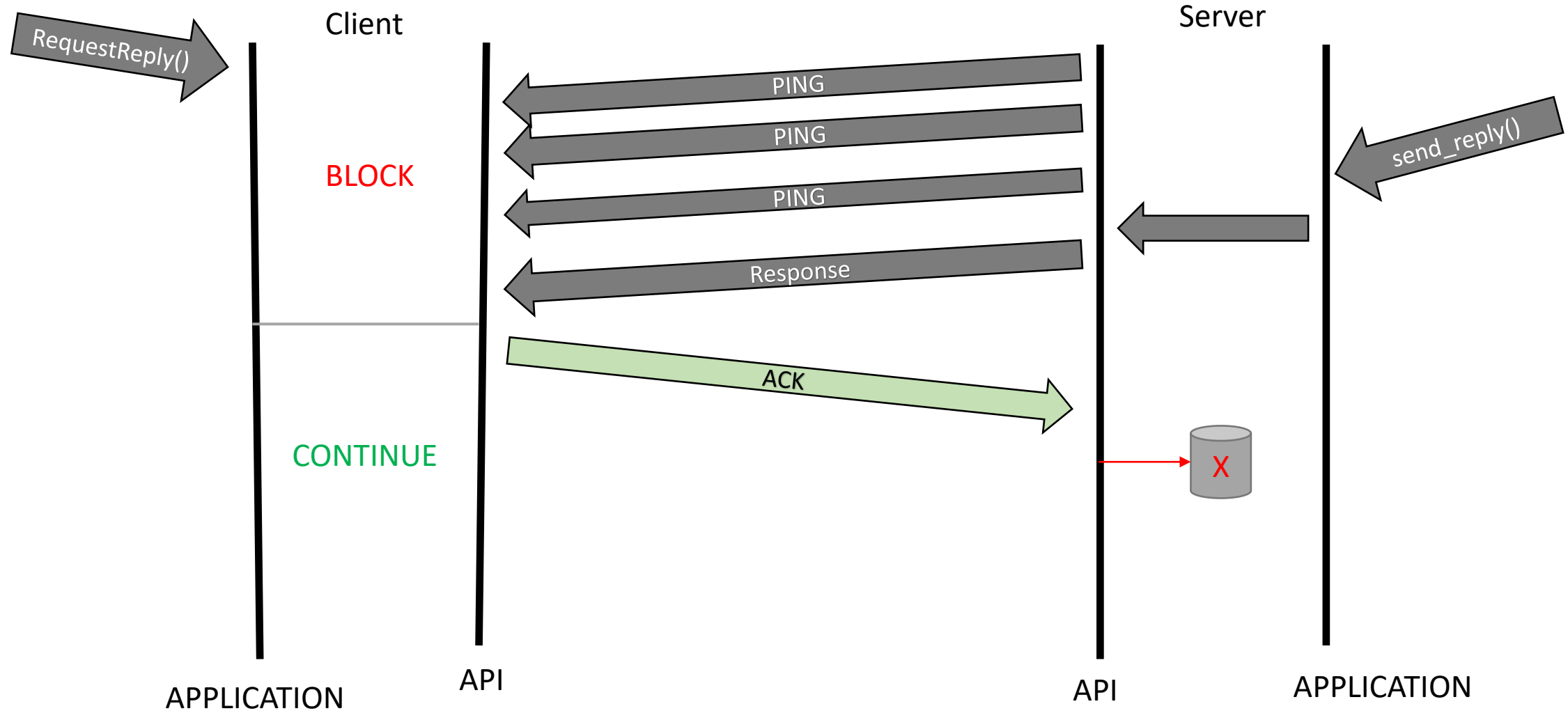
# Client Dies



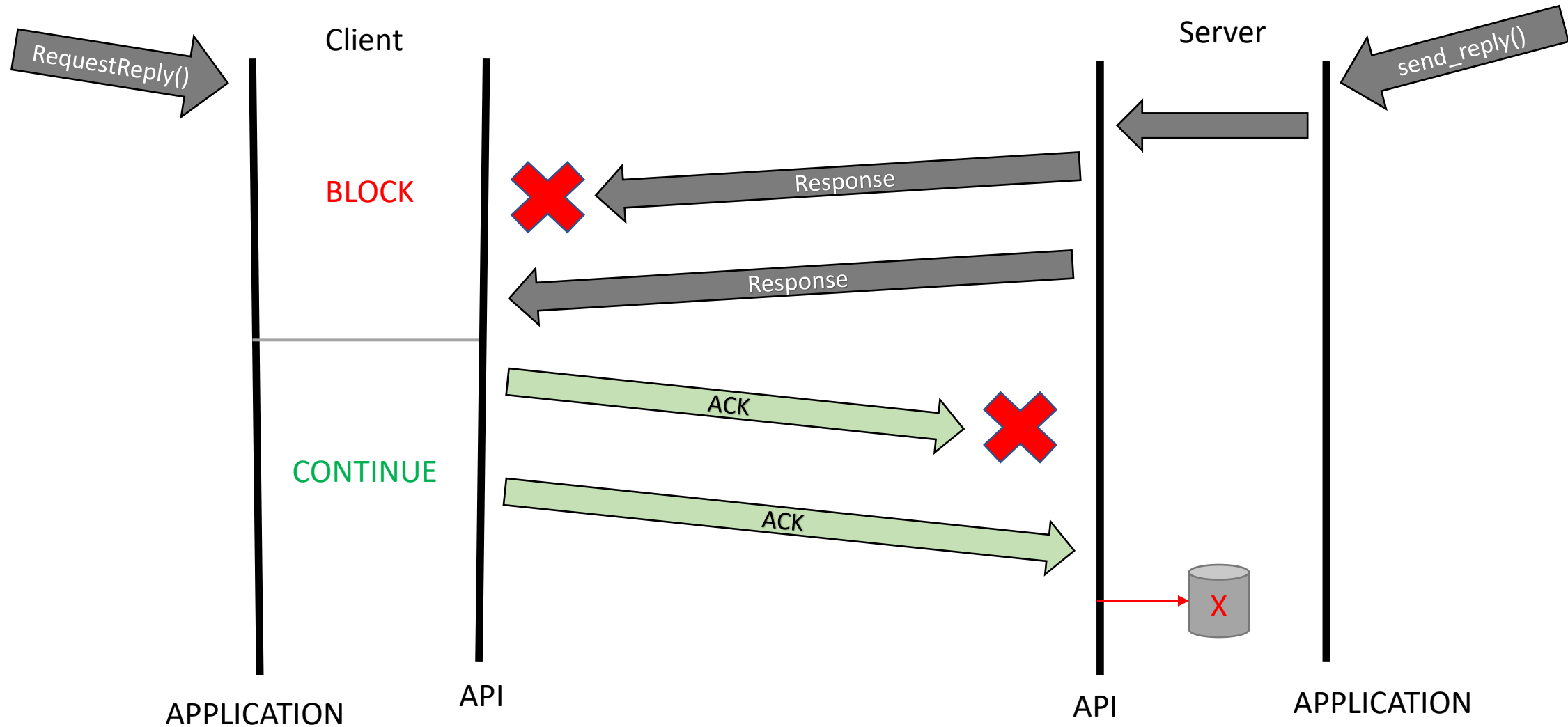
# Client Temporary Dies



# Successful Unicast Response



# Lost Unicast Response Packets



# Message Types

## **Multicast Message Types**

- Client to Server: "<SERVICE>"
- Server to Server: "LOAD:<LOAD>"
- Server to Client: "ACK:<LOAD>" or ""NACK"

## **Unicast Message Types**

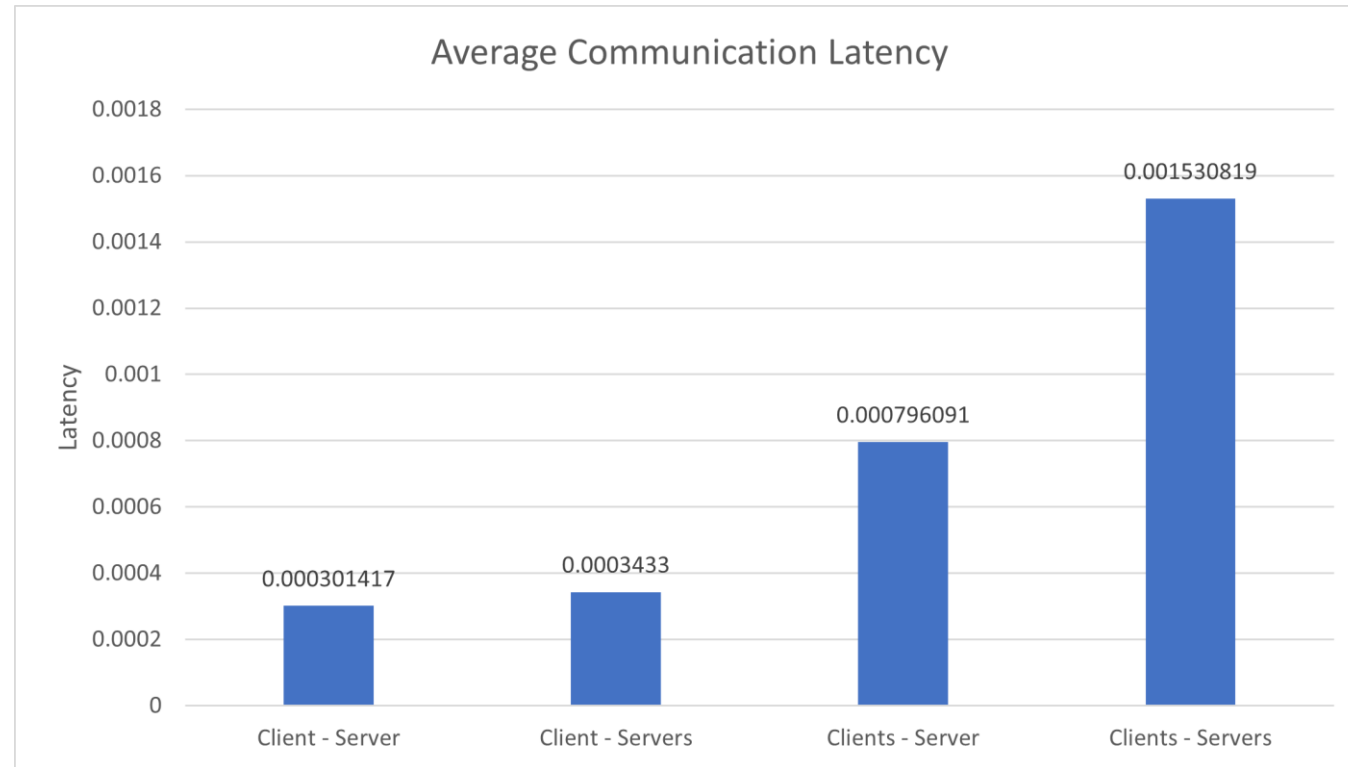
- Client to Server: "<SEQUENCE>:<SERVICE>:<DATA>"
- Server to Client: "ACK" or "<DATA>"

## **Ping Message Types**

- Client to Server: "PING:<SERVICE>" or "ACK"
- Server to Client: "Ping" or "ACK"

# Communication Latency and Standard Deviation

# Communication Latency

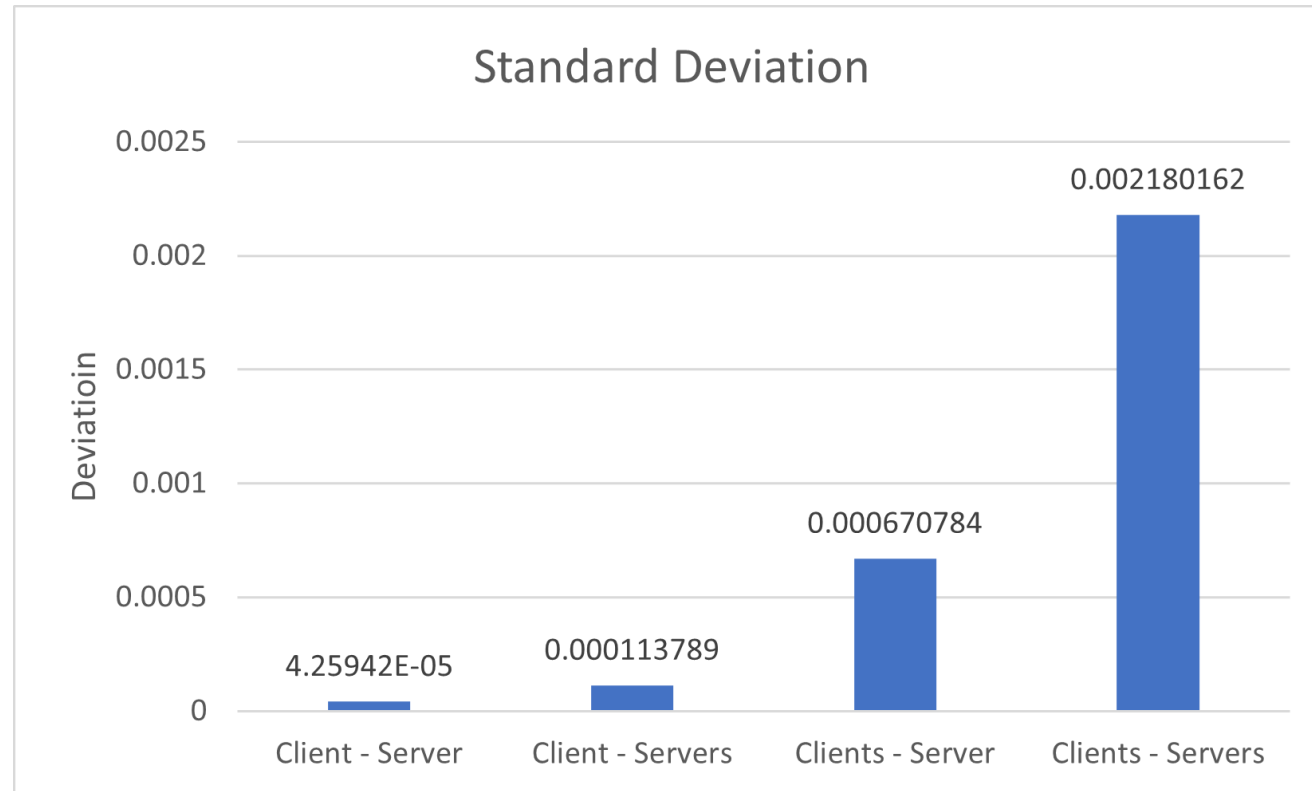


Communication Latency Increases When the Number of Server is Increased Since Multicast Takes More Time to Elect a Leader

Communication Time is Increased When the Number of Clients is Increased Since a Lot More Traffic Must be Handled by fewer Server's Sockets



# Standard Deviation



The Standard Deviation of the Communication Latency is Increased when the Number of Servers or Clients is Increased since more Complexity is Added to the System

# Group Members

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