Server Machine with Local Client Configured to Use External 1 Gb Ethernet Link
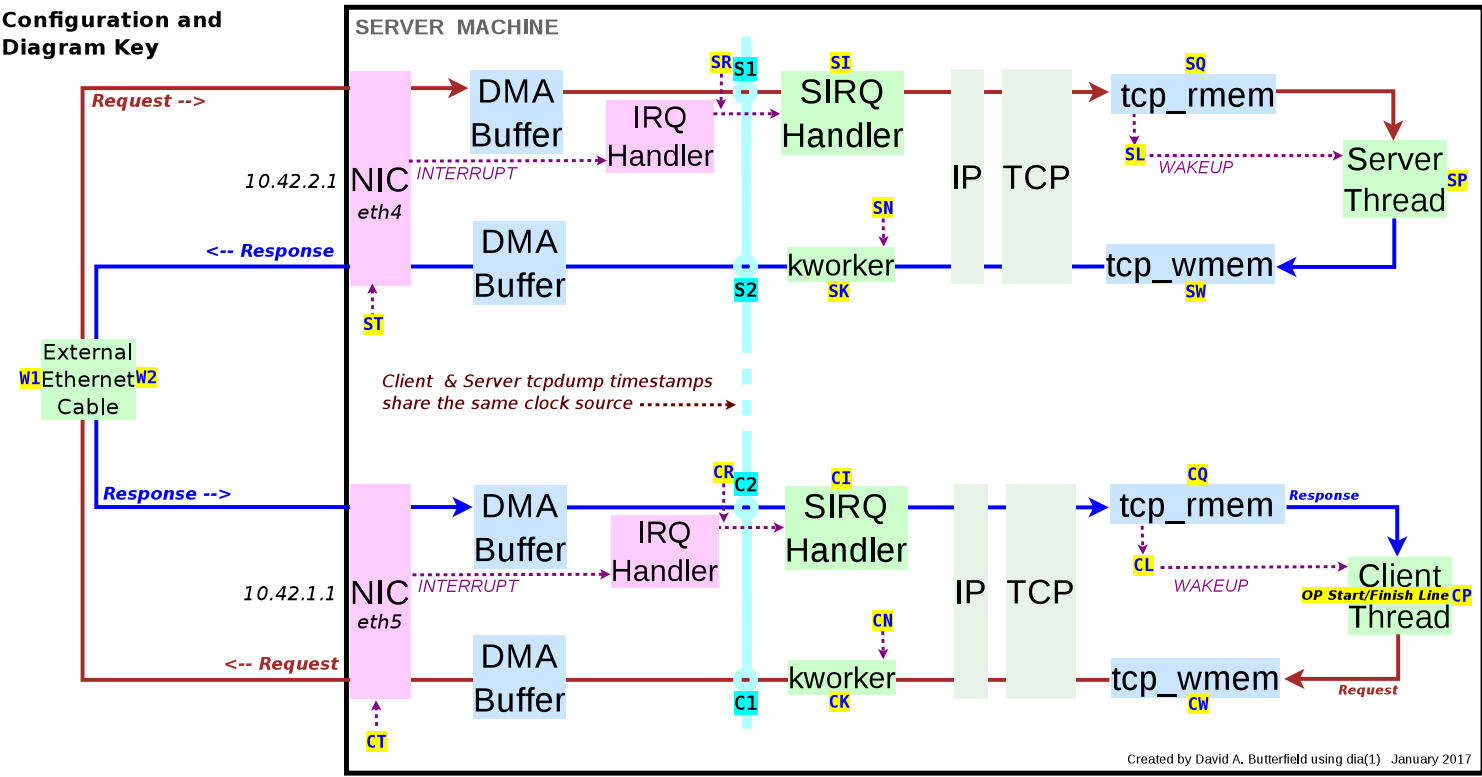
Configuration and Diagram Key

SERVER MACHINE

Request -->

SR S1

DMA Buffer

IRQ Handler

SI SIRQ Handler

IP TCP

SQ tcp_rmem

SP Server Thread

SL *WAKEUP*

10.42.2.1 NIC *eth4*

INTERRUPT

<-- Response

DMA Buffer

SN kworker SK

ST

SW tcp_wmem

Client & Server tcpdump timestamps share the same clock source ········>

External Ethernet Cable
W1 W2

Response -->

CR C2

DMA Buffer

IRQ Handler

CI SIRQ Handler

IP TCP

CQ tcp_rmem *Response*

CL *WAKEUP*

10.42.1.1 NIC *eth5*

INTERRUPT

Client Thread
OP Start/Finish Line CP

<-- Request

DMA Buffer

CN kworker CK

CT

CW tcp_wmem *Request*

C1

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Notes:

Running both Client and Server on the same machine sidesteps the clock synchronization problem, enabling calculation of unidirectional pipeline segments through the low-level network and interrupt layers.

NAT rules facilitate routing traffic through the external cable: client connects to "fake" 10.42.2.100; route and ARP entries set for that address force traffic out eth5; also vice versa

```
DST 10.42.2.100: SNAT 10.42.1.0/24 -> 10.42.1.100
                 SRC eth4:  DNAT 10.42.2.100 -> 10.42.2.1
DST 10.42.1.100: SNAT 10.42.2.0/24 -> 10.42.2.100
                 SRC eth5:  DNAT 10.42.1.100 -> 10.42.1.1
```

To allow iSCSI Initiator to find Server portal for login, set "ifconfig eth4:0 10.42.2.100 up". After login, "ifconfig eth4:0 down" to start routing traffic