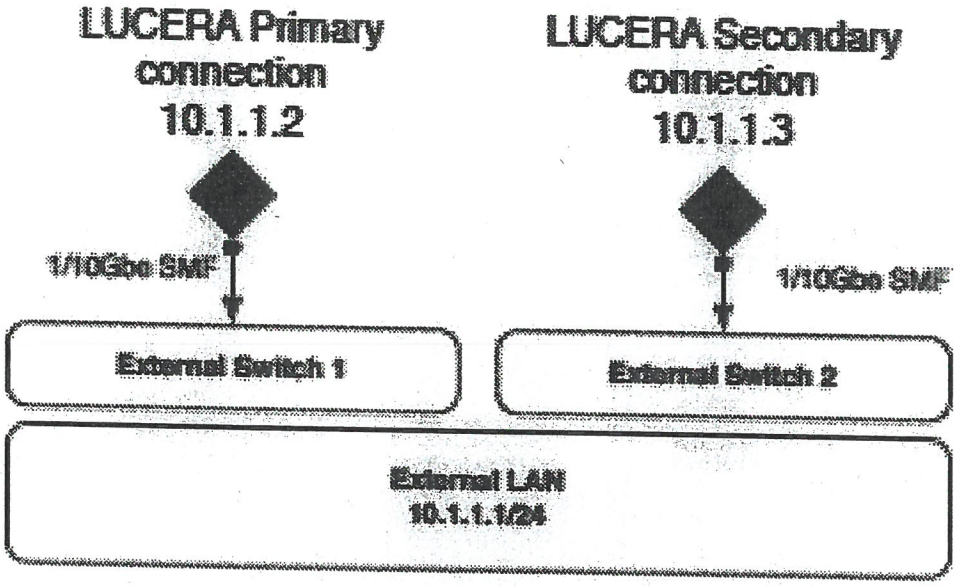
LUCERA Primary connection
10.1.1.2
LUCERA Secondary connection
10.1.1.3
1/10Gbe SMF
1/10Gbe SMF
External Switch 1
External Switch 2
External LAN
10.1.1.1/24

Figure 5

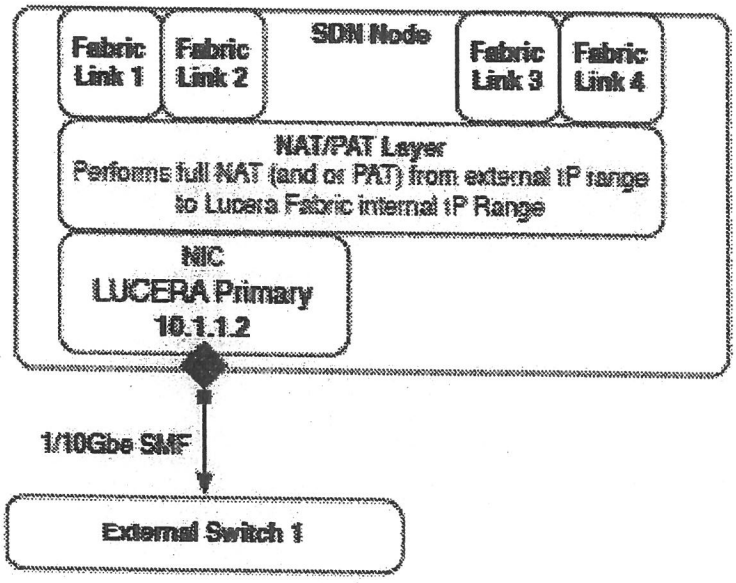
Fabric Link 1
Fabric Link 2
SDN Node
Fabric Link 3
Fabric Link 4
NAT/PAT Layer
Performs full NAT (and or PAT) from external IP range to Lucera Fabric internal IP Range
NIC
LUCERA Primary
10.1.1.2
1/10Gbe SMF
External Switch 1

Figure 8

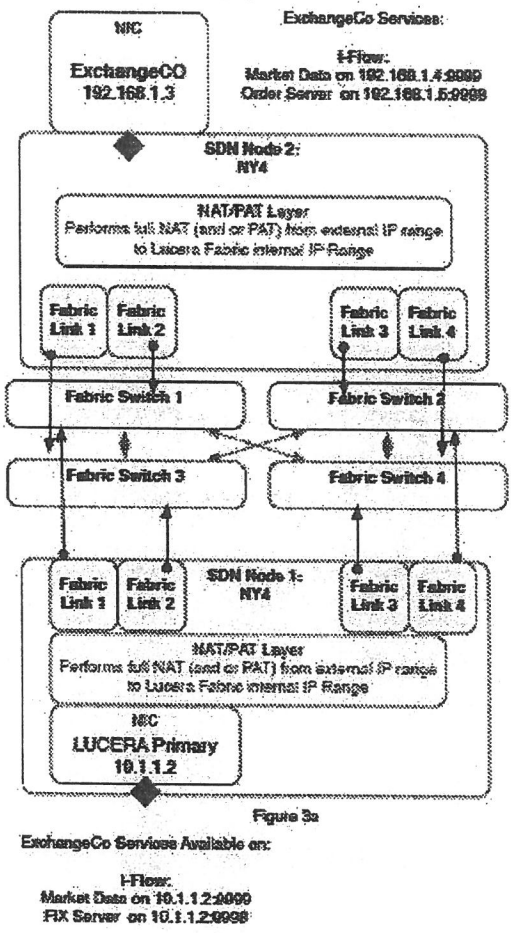
NIC
ExchangeCO
192.168.1.3
ExchangeCo Services:
I-Flow:
Market Data on 192.168.1.4:9999
Order Server on 192.168.1.5:9999
SDN Node 2:
NY4
NAT/PAT Layer
Performs full NAT (and or PAT) from external IP range
to Lucera Fabric internal IP Range
Fabric Link 1
Fabric Link 2
Fabric Link 3
Fabric Link 4
Fabric Switch 1
Fabric Switch 2
Fabric Switch 3
Fabric Switch 4
Fabric Link 1
Fabric Link 2
SDN Node 1:
NY4
Fabric Link 3
Fabric Link 4
NAT/PAT Layer
Performs full NAT (and or PAT) from external IP range
to Lucera Fabric internal IP Range
NIC
LUCERA Primary
10.1.1.2
Figure 3a
ExchangeCo Services Available on:
I-Flow:
Market Data on 10.1.1.2:9999
FIX Server on 10.1.1.2:9998

Figure 9

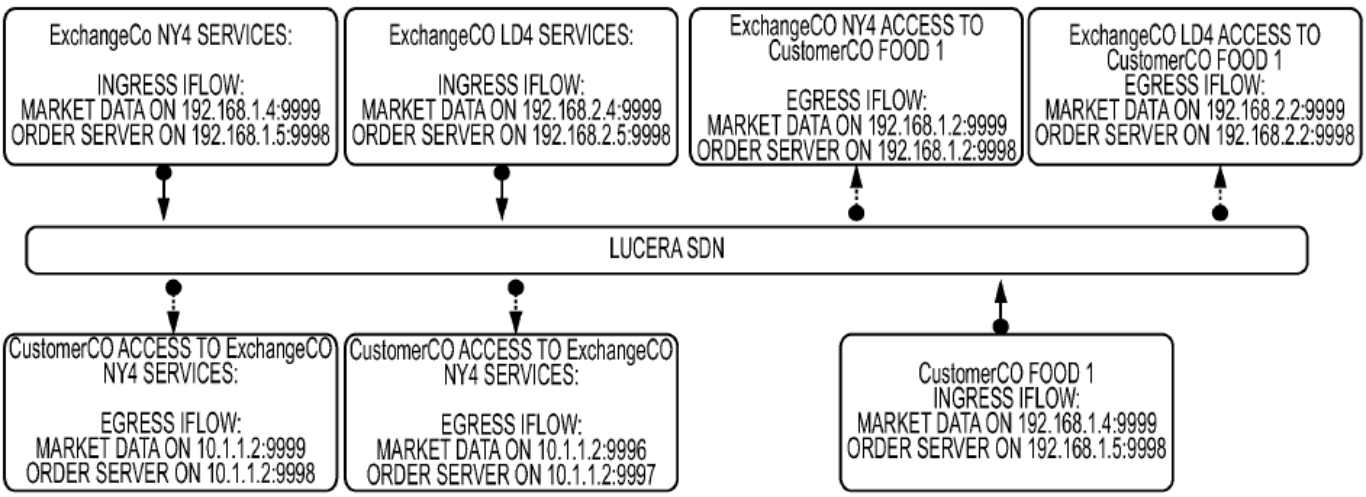
ExchangeCo NY4 SERVICES:
INGRESS IFLOW:
MARKET DATA ON 192.168.1.4:9999
ORDER SERVER ON 192.168.1.5:9998
ExchangeCO LD4 SERVICES:
INGRESS IFLOW:
MARKET DATA ON 192.168.2.4:9999
ORDER SERVER ON 192.168.2.5:9998
ExchangeCO NY4 ACCESS TO CustomerCO FOOD 1
EGRESS IFLOW:
MARKET DATA ON 192.168.1.2:9999
ORDER SERVER ON 192.168.1.2:9998
ExchangeCO LD4 ACCESS TO CustomerCO FOOD 1
EGRESS IFLOW:
MARKET DATA ON 192.168.2.2:9999
ORDER SERVER ON 192.168.2.2:9998
LUCERA SDN
CustomerCO ACCESS TO ExchangeCO NY4 SERVICES:
EGRESS IFLOW:
MARKET DATA ON 10.1.1.2:9999
ORDER SERVER ON 10.1.1.2:9998
CustomerCO ACCESS TO ExchangeCO NY4 SERVICES:
EGRESS IFLOW:
MARKET DATA ON 10.1.1.2:9996
ORDER SERVER ON 10.1.1.2:9997
CustomerCO FOOD 1
INGRESS IFLOW:
MARKET DATA ON 192.168.1.4:9999
ORDER SERVER ON 192.168.1.5:9998

Figure 12

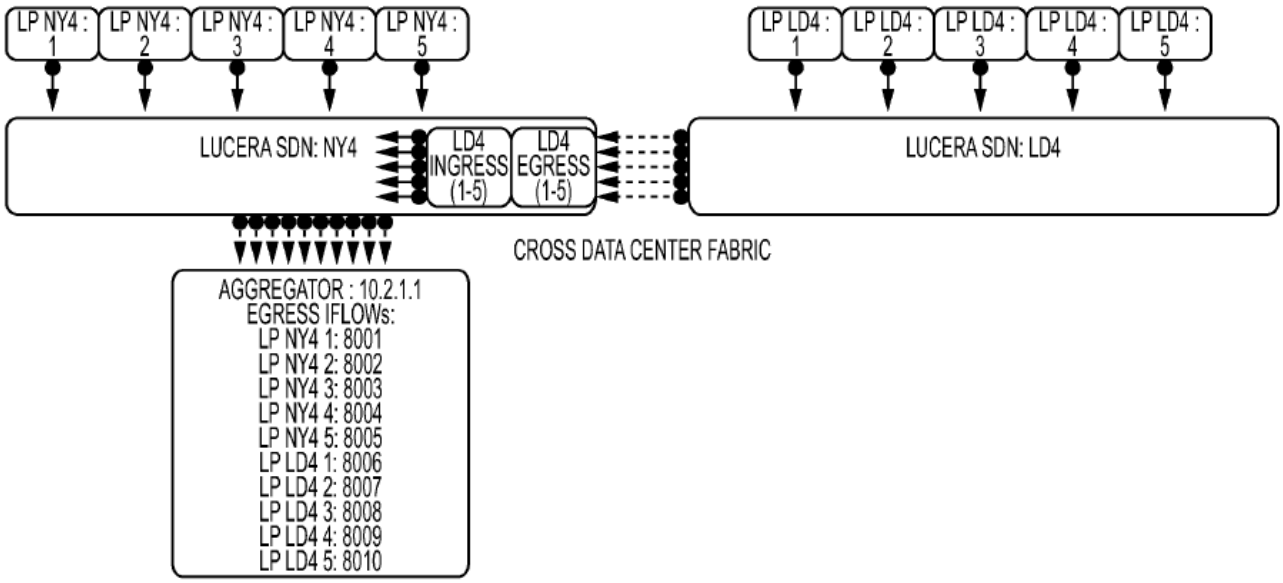
LP NY4 : 1
LP NY4 : 2
LP NY4 : 3
LP NY4 : 4
LP NY4 : 5
LP LD4 : 1
LP LD4 : 2
LP LD4 : 3
LP LD4 : 4
LP LD4 : 5
LUCERA SDN: NY4
LD4 INGRESS (1-5)
LD4 EGRESS (1-5)
LUCERA SDN: LD4
CROSS DATA CENTER FABRIC
AGGREGATOR : 10.2.1.1
EGRESS IFLOWs:
LP NY4 1: 8001
LP NY4 2: 8002
LP NY4 3: 8003
LP NY4 4: 8004
LP NY4 5: 8005
LP LD4 1: 8006
LP LD4 2: 8007
LP LD4 3: 8008
LP LD4 4: 8009
LP LD4 5: 8010

Figure 13

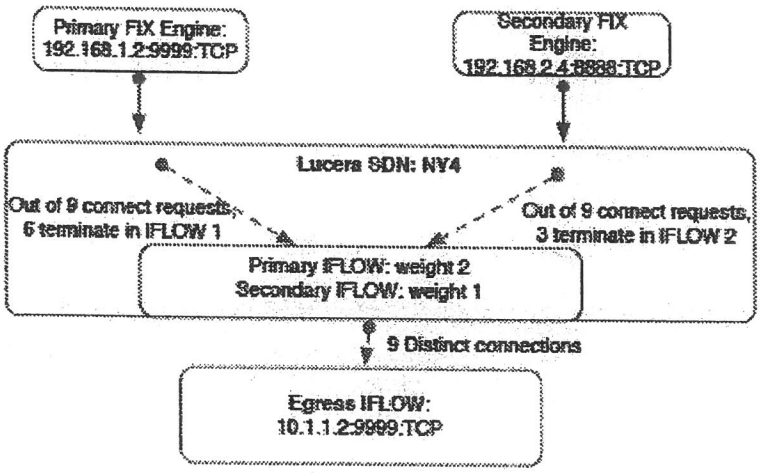
Primary FIX Engine:
192.168.1.2:9999:TCP
Secondary FIX Engine:
192.168.2.4:8888:TCP
Lucera SDN: NY4
Out of 9 connect requests, 6 terminate in IFLOW 1
Out of 9 connect requests, 3 terminate in IFLOW 2
Primary IFLOW: weight 2
Secondary IFLOW: weight 1
9 Distinct connections
Egress IFLOW:
10.1.1.2:9999:TCP

Figure 15

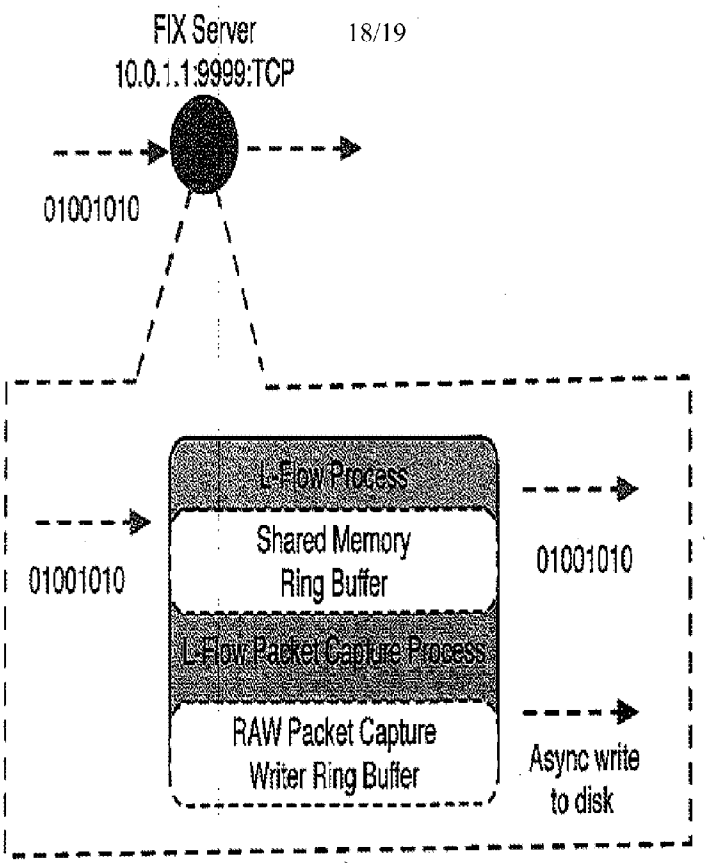
FIX Server
10.0.1.1:9999:TCP
18/19
01001010
L-Flow Process
Shared Memory
Ring Buffer
L-Flow Packet Capture Process
RAW Packet Capture
Writer Ring Buffer
01001010
01001010
Async write
to disk

Figure 17