or protocols where only subnet is specified, the specific IP address	Subnets and IP addresses - Site A (VASBY) All Primary ports (and Secondary/Failover por	Subnets and IP addresses - Site B (PORT)	
tocol / Service	for Co-lo customers)	Connect- and NODE customers (non Co-lo)	Port / Port Ran
Order Entry (OE) OE Drop (incl. Algo Child Order Drop)	159.79.136.0/21 159.79.136.0/21	193.142.170.0/23 194.110.110.0/23	18100 18740
Trade Reporting (TR)	159.79.136.0/21	194.110.110.0/23	19100
TR Drop	159.79.136.0/21	194.110.110.0/23	19740
CH (Shared Gateway) CH (Dedicated Gateway)	159.79.136.0/21 159.79.136.0/21	194.110.104.0/23 194.110.104.0/23	16020 16200-16250
Drop for OUCH traffic	159.79.136.0/21	194.110.106.128/25	16840
H TCP - All Nordic/Baltic INET Markets	159.79.81.0/25	194.110.106.0/25	17001
CH TCP - Nordic Equities CH TCP - Stockholm Equities	159.79.81.0/25 159.79.81.0/25	194.110.106.0/25 194.110.106.0/25	17002 17004
CH TCP - Stockholm Warrants	159.79.81.0/25	194.110.106.0/25	17003
H TCP - Copenhagen Equities & Warrants	159.79.81.0/25	194.110.106.0/25	17005
CH TCP - Helsinki Equities & Warrants CH TCP - GLIMPSE	159.79.81.0/25 159.79.81.0/25	194.110.106.0/25 194.110.106.0/25	17006 17022
CH TCP - Nordic Equity Last Sale (NLS)	159.79.81.0/25	194.110.106.0/25	17200
TIP	159.79.68.0/28	159.79.68.32/28	29900
os.	IP address: 159.79.68.1 192.176.3.96/27	IP address: 159.79.68.33 Same as site A. (Transparant failover through load	8080
Nordic Workstation	IP address: 192.176.3.100	balancer)	0000
	192.176.3.96/27	Same as site A. (Transparant failover through load	443
	IP address: 192.176.3.99 (URL: extranet.nordicworkstation.com)	balancer)	
ulticast services VASBY and PORT - Extranet			
TITCH Multicast (Dualsite) <sup>1</sup>	Primary - A Flow	Secondary/Failover (Site B) - B Flow	
ITCH Multicast Equities & Warrants¹ Re-request of lost ITCH Multicast messages¹	Source IP address: 159.79.85.1 (within subnet 159.79.85.0/28)	Source IP address: 192.165.254.33 (within subnet 192.165.254.32/27)	
	(WILLIIII SUBIREL 155.75.65.0/26)	(WICHIII SUBHEC 152.103.234.52/27)	
	Destination IP address and port in	Destination IP address and port in	
	direction to client:	direction to client: IP Multicast group address: 233.74.125.141	
	IP Multicast group address: 233.74.125.32 UDP port: 31032	UDP port: 31141	
	159.79.81.0/25	194.110.106.0/25	
	IP address: 159.79.81.8 UDP port: 31532	IP address: 194.110.106.11 UDP port: 31641	
ET NLS Multicast (Dualsite) <sup>2</sup>			
ordic Equity Last Sale (NLS) Multicast <sup>2</sup>	Source IP address: 159.79.85.11	Source IP address: 192.165.254.59	
	(within subnet 159.79.85.0/28)	(within subnet 192.165.254.32/27)	
	Destination IP address and port in	Destination IP address and port in	
	direction to client:	direction to client:	
	IP Multicast group address: 233.74.125.34 UDP port: 31034	IP Multicast group address: 233.74.125.142 UDP port: 31142	
Re-request of lost NLS Multicast messages <sup>2</sup>	159.79.81.0/25	194.110.106.0/25	
	IP address: 159.79.81.34	IP address: 194.110.106.42	
	UDP port: 31534	UDP port: 31642	
Iulticast services - Co-location 1G Access			
ET ITCH Multicast (1G Co-location access) <sup>1</sup>	Primary - A Flow	Secondary/Failover (at primary site) - C Flow	
ITCH Multicast Equities & Warrants <sup>†</sup>	Source IP address: 159.79.85.1 (within subnet 159.79.85.0/28)	Source IP address: 159.79.85.17 (within subnet 159.79.85.16/28)	
	(WILLIIII SUBIREL 155.75.65.0/26)	(WICHIII SUBHEC 155.75.65.10/26)	
	Destination IP address and port in	Destination IP address and port in	
	direction to client: IP Multicast group address: 233.74.125.32	direction to client: IP Multicast group address: 233.74.125.33	
	UDP port: 31032	UDP port: 31033	
	159.79.81.0/25	159.79.81.0/25	
e-request of lost ITCH Multicast messages <sup>1</sup>	IP address: 159.79.81.8 UDP port: 31532	IP address: 159.79.81.9 UDP port: 31533	
ET NLS Multicast (1G Co-location access) <sup>2</sup>			
Nordic Equity Last Sale (NLS) Multicast <sup>2</sup>	Source IP address: 159.79.85.11	Source IP address: 159.79.85.27	
	(within subnet 159.79.85.0/28)	(within subnet 159.79.85.16/28)	
	Destination IP address and port in	Destination IP address and port in	
	direction to client:	direction to client:	
	IP Multicast group address: 233.74.125.34 UDP port: 31034	IP Multicast group address: 233.74.125.35 UDP port: 31035	
Re-request of lost NLS Multicast messages <sup>2</sup>	159.79.81.0/25	159.79.81.0/25	
	IP address: 159.79.81.34	IP address: 159.79.81.35	
ulticast services - Co-location 10G Ultra Acc	UDP port: 31534	UDP port: 31535	
ET ITCH Multicast (10G Ultra Co-location access)¹	Primary - A Flow	Secondary/Failover (at primary site) - C Flow	
ITCH Multicast Equities & Warrants <sup>1</sup>	Source IP address: 159.79.85.129	Source IP address: 159.79.85.145	
	(within subnet 159.79.85.128/28)	(within subnet 159.79.85.144/28)	
	Destination IP address and port in	Destination IP address and port in	
	direction to client:	direction to client:	
	IP Multicast group address: 233.74.125.42 UDP port: 31042	IP Multicast group address: 233.74.125.43 UDP port: 31043	
e-request of lost ITCH Multicast messages <sup>1</sup>	159.79.81.0/25	159.79.81.0/25	
	IP address: 159.79.81.10	IP address: 159.79.81.11	
	UDP port: 31542	UDP port: 31543	
ITCH Multicast Equities only <sup>1</sup> Re-request of lost ITCH Multicast messages <sup>1</sup>	Source IP address: 159.79.85.130	Source IP address: 159.79.85.146	
	(within subnet 159.79.85.128/28)	(within subnet 159.79.85.144/28)	
	Destination IP address and port in	Destination IP address and port in	
	direction to client:	direction to client:	
	IP Multicast group address: 233.74.125.36	IP Multicast group address: 233.74.125.37	
	UDP port: 31036 159.79.81.0/25	UDP port: 31037 159.79.81.0/25	
re-request of lost ITCH Multicast messages:	IP address: 159.79.81.36	IP address: 159.79.81.37	
	UDP port: 31536	UDP port: 31537	
TCH Multicast Warrants only	Source IP address: 159.79.85.131	Source IP address: 159.79.85.147	
	(within subnet 159.79.85.128/28)	(within subnet 159.79.85.144/28)	
	Destination IP address and port in direction to client:	Destination IP address and port in direction to client:	
	IP Multicast group address: 233.74.125.38	IP Multicast group address: 233.74.125.39	
	UDP port: 31038	UDP port: 31039	
e-request of lost ITCH Multicast messages <sup>1</sup>	159.79.81.0/25 IP address: 159.79.81.38	159.79.81.0/25 IP address: 159.79.81.39	
	UDP port: 31538	UDP port: 31539	
ET NLS Multicast (10G Ultra Co-location access) <sup>2</sup>			
Nordic Equity Last Sale (NLS) Multicast <sup>2</sup>	Source IP address: 159.79.85.139 (within subnet 159.79.85.128/28)	Source IP address: 159.79.85.155 (within subnet 159.79.85.144/28)	
		Destination IP address and port in	
	Destination IP address and port in		
	direction to client:	direction to client:	
-request of lost NLS Multicast messages <sup>a</sup>	direction to client: IP Multicast group address: 233.74.125.44	direction to client: IP Multicast group address: 233.74.125.45	

<sup>&</sup>lt;sup>1</sup> For details on ITCH Multicast setup, please consult the INET ITCH Multicast Offering presentation at http://www.nasdagomx.com/transactions/technicalinformation/connectivity <sup>2</sup> For details on NLS Multicast setup, please consult the INET NLS Multicast Offering presentation at http://www.nasdagomx.com/transactions/technicalinformation/connectivity