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OPTIQ® MARKET DATA GATEWAY FEED CONFIGURATION

PRODUCTION AND DISASTER RECOVERY

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PREFACE

DOCUMENT HISTORY

The following table provides a description of all changes to this document.

VERSION NO.	DATE	CHANGE DESCRIPTION
1.0	September 2016	Optiq® Market Data Gateway Production and Disaster Recovery (DR) Environment feed configuration details.
1.1	March 2017	Retail Matching Facility renamed into Best of Book. BBBO changed into FBMU for Equities/Funds/Fixed Income and Bourse de Luxembourg. Change of the layout of the feed configuration. Addition of the DR Source IP Addresses for Feed A and B.
1.2	March 2017	Corrected made to Environment field, now correctly showing PROD.
1.3	May 2017	Corrected Euronext Indices channel, Index Options Netherlands Partition 2 and Index Options France Partition 2.
1.4	June 2017	Correction Equity and Index Futures Netherlands 10G partition 2 and Commodity Derivatives Snapshot Partition 1.
1.5	November 2017	New Channels added for APA SI Quotes and APA Trade Publication to Optiq Segment – 10, Trade Reporting and Publication.
1.6	June 2018	Removal of MDG Set Of Channels ID 12 – Trade Reporting And Publication

REFERENCE MATERIAL

The following document, which either should be read in conjunction with this document or which provide other relevant information for the user:

- [Euronext Cash and Derivatives Markets – Optiq MDG Client Specifications](#) – (section Technical Documentation, sub-section Optiq phase 1 (MDG): specifications)

SUPPORT

Please find below the Optiq Support Desk contact details, which has been established to ensure customer readiness by:

- sending information to customers related to Optiq
- answering customers' questions related to Optiq
- assisting customers in their testing and validation on the EUA environment
- providing follow-up on customer conformance testing
- assessing customers' state of readiness with regards to technical changes

Optiq Support Desk

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FURTHER INFORMATION

- For additional information please visit: www.euronext.com/optiq

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1. INTRODUCTION

This document provides all multicast addresses required to access the Euronext Optiq® Market Data Gateway Production and Disaster Recovery (DR).

The Euronext Optiq® Market Data Gateway Production environment (PROD) is located in Basildon and the Disaster Recovery (DR) environment is located at St. Denis. The Production Primary (P) and Secondary (S) Source IP Address ranges are provided in this document for the live and standby systems as part of the High Availability mechanism.

Customers are requested to allow the Production Primary, Production Secondary and Disaster Recovery (DR) Source IP Address ranges through their Firewalls.

With the XML Standing Data files for the different Optiq Segments, customers will be able to map which instruments are available in which channel. The Optiq MDG feed configuration can be found at the end of each Standing Data file available and these will be provided on a daily basis in XML format. It is required to use the feed configuration details as part of the standing data files to connect to the feed on a daily basis.

In case a new partition is added to an Optiq Segment, customers are required to adapt to this type of change using the Optiq MDG Standing Data files that include the feed configuration details.

1.1 OPTIQ SEGMENTS, PARTITIONS AND MDG SET OF CHANNELS

Below you will find an overview of the available Optiq Segments, the number of partitions per Optiq Segment and the MDG Set Of Channels ID and Name that are part of each Optiq Segment. The Optiq Segments listed in the below table are also available in the real-time Standing Data (1007) messages and Contract Standing Data (1013) messages and also available in Standing Data files.

Optiq Segment	Number of Partitions	MDG Set Of Channels ID	MDG Set Of Channels Name
1. Equities	4	6	Equities Netherlands
		5	Equities France
		7	Equities Belgium
		8	Equities Portugal
		9	Equities UK
		11	Best of Book (RMF)
		10	Société Générale Systematic Internalizer (SI)
2. Funds	1	1	Funds
3. Fixed Income	1	2	Fixed Income
4. Warrants and Certificates	1	4	Warrants and Certificates
5. Bourse de Luxembourg	1	3	Bourse De Luxembourg
6. Financial Options	2	21	Equity Options Netherlands
		20	Equity Options France
		22	Equity Options Other (Belgium + Portugal)
		24	Index Options Netherlands
		23	Index Options France
		25	Index Options Other (Belgium + Portugal)
		18	Currency Options
		19	AtomX (for Flex Contracts)
7. Financial Futures	2	27	Equity and Index Futures Netherlands
		26	Equity and Index Futures France
		28	Equity and Index Futures Other (Belgium + Portugal)
		17	Currency Futures
8. Commodity Derivatives	1	16	Commodity Derivatives
9. Indices	1	13	Euronext Indices
		14	Euronext iNAVs
		15	Third Party Indices
10. Trade Reporting and Publication	1	29	APA SI Quotes
		30	APA Trade Publication

1.2 CHANNEL TYPES AND CHANNEL IDS

The Channel Types and Channel ID's that are available to each customer depend on the available bandwidth on customer connections to the SFTI Network and the services that were selected in the SFTI® order form. Depending on the Asset Class, the following Optiq MDG channel types are made available to customers:

1. Pre-trade
 - a. BBBO – Best Bid and Offer
 - b. FBMU – Full Book using Market Update message (includes Best Bid and Best Offer)
 - c. FBOU – Full Book using Order Update message (includes Best Bid and Best Offer)
2. Post Trade – REFT –Reference Data and Full Trade Information
3. Indices – REFI – Reference Data and Index messages

Please read chapter **2.1 TYPE OF MARKET DATA CHANNELS** of the Euronext Cash and Derivatives Markets. – Optiq MDG Client Specifications for more details.

1.3 ADDITION OF A NEW PARTITION

The Channel ID contains 5 numbers and is provided as a field in the Optiq MDG packet header.

1. The first number on the left is used to identify if the channel is a real-time channel (1) or snapshot (2)
2. The second number is n= partition number -1, with n=0 for the first partition, n=1 for the second partition, etc.
3. The last three number xxx represent the last numbers on the right used for the Multicast Group IP.

Each partition as part of an Optiq Segment has a Feed A and a Feed B and uses a unique Source IP address from the ranges as specified below:

Feed A/B	Feed A	Feed B
Rendez-vous Point SFTI WAN	156.48.121.2	156.48.121.55
Rendez-vous Point SFTI Co-lo	156.48.99.5	
Primary IP Address	212.197.192.0/25	212.197.193.0/25
Secondary IP Address	212.197.192.0/25	212.197.193.0/25
Disaster Recovery IP Address	212.197.227.0/25	212.197.228.0/25

Customers are required to allow the whole range as specified above through their Firewalls to allow for the addition of a new partition within an Optiq Segment. In case of a new partition

1. A new Source IP will be used for the new partition
2. The Multicast Group IP Addresses for Feed A and B remain unchanged for the new partition
3. A new Channel ID is defined as 1(n)xxx, which is equal to the ports used for the new partition.

The Multicast Group IP addresses for Real-time and Snapshot, for Feed A and B are:

Environment	Channel ID	Real-Time/Snapshot	Multicast Group Feed A	Multicast Group Feed B
Production	1(n)xxx	Real-Time	224.0.64.xxx	224.0.65.xxx
	2(n)xxx	Snapshot	224.0.66.xxx	224.0.67.xxx

2. OPTIQ SEGMENT – 1. EQUITIES REAL-TIME AND SNAPSHOT CONFIGURATION

2.1 MDG SET OF CHANNELS ID 6 – EQUITIES NETHERLANDS

Environment	PROD	MDGSetOfChannels ID	6
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities Netherlands

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.120	10120	11120	12120	13120
Multicast Group IP Feed B	224.0.65.120				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.120	20120	21120	22120	23120
Multicast Group IP Feed B	224.0.67.120				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.121	10121	11121	12121	13121
Multicast Group IP Feed B	224.0.65.121				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.122	10122	11122	12122	13122
Multicast Group IP Feed B	224.0.65.122				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.121	20121	21121	22121	23121
Multicast Group IP Feed B	224.0.67.121				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.123	10123	11123	12123	13123
Multicast Group IP Feed B	224.0.65.123				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.124	10124	11124	12124	13124
Multicast Group IP Feed B	224.0.65.124				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.125	10125	11125	12125	13125
Multicast Group IP Feed B	224.0.65.125				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.123	20123	21123	22123	23123
Multicast Group IP Feed B	224.0.67.123				

2.2 MDG SET OF CHANNELS ID 5 – EQUITIES FRANCE

Environment	PROD	MDGSetOfChannels ID	5
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities France

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.110	10110	11110	12110	13110
Multicast Group IP Feed B	224.0.65.110				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.110	20110	21110	22110	23110
Multicast Group IP Feed B	224.0.67.110				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.111	10111	11111	12111	13111
Multicast Group IP Feed B	224.0.65.111				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.112	10112	11112	12112	13112
Multicast Group IP Feed B	224.0.65.112				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.111	20111	21111	22111	23111
Multicast Group IP Feed B	224.0.67.111				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.113	10113	11113	12113	13113
Multicast Group IP Feed B	224.0.65.113				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.114	10114	11114	12114	13114
Multicast Group IP Feed B	224.0.65.114				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.115	10115	11115	12115	13115
Multicast Group IP Feed B	224.0.65.115				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.113	20113	21113	22113	23113
Multicast Group IP Feed B	224.0.67.113				

2.3 MDG SET OF CHANNELS ID 7 – EQUITIES BELGIUM (INCLUDING PUBLIC AUCTION MARKET)

Environment	PROD	MDGSetOfChannels ID	7
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities Belgium (Including Public Auction Market)

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.100	10100	11100	12100	13100
Multicast Group IP Feed B	224.0.65.100				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.100	20100	21100	22100	23100
Multicast Group IP Feed B	224.0.67.100				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.101	10101	11101	12101	13101
Multicast Group IP Feed B	224.0.65.101				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.102	10102	11102	12102	13102
Multicast Group IP Feed B	224.0.65.102				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.101	20101	21101	22101	23101
Multicast Group IP Feed B	224.0.67.101				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.103	10103	11103	12103	13103
Multicast Group IP Feed B	224.0.65.103				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.104	10104	11104	12104	13104
Multicast Group IP Feed B	224.0.65.104				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.103	20103	21103	22103	23103
Multicast Group IP Feed B	224.0.67.103				

2.4 MDG SET OF CHANNELS ID 8 – EQUITIES PORTUGAL

Environment	PROD	MDGSetOfChannels ID	8
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities Portugal

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.105	10105	11105	12105	13105
Multicast Group IP Feed B	224.0.65.105				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.105	20105	21105	22105	23105
Multicast Group IP Feed B	224.0.67.105				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.106	10106	11106	12106	13106
Multicast Group IP Feed B	224.0.65.106				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.107	10107	11107	12107	13107
Multicast Group IP Feed B	224.0.65.107				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.106	20106	21106	22106	23106
Multicast Group IP Feed B	224.0.67.106				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.108	10108	11108	12108	13108
Multicast Group IP Feed B	224.0.65.108				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.109	10109	11109	12109	13109
Multicast Group IP Feed B	224.0.65.109				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.108	20108	21108	22108	23108
Multicast Group IP Feed B	224.0.67.108				

2.5 MDG SET OF CHANNELS ID 9 – EQUITIES UK

Environment	PROD	MDGSetOfChannels ID	9
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities UK

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.165	10165	11165	12165	13165
Multicast Group IP Feed B	224.0.65.165				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.165	20165	21165	22165	23165
Multicast Group IP Feed B	224.0.67.165				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.166	10166	11166	12166	13166
Multicast Group IP Feed B	224.0.65.166				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.167	10167	11167	12167	13167
Multicast Group IP Feed B	224.0.65.167				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.166	20166	21166	22166	23166
Multicast Group IP Feed B	224.0.67.166				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.168	10168	11168	12168	13168
Multicast Group IP Feed B	224.0.65.168				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.169	10169	11169	12169	13169
Multicast Group IP Feed B	224.0.65.169				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.168	20168	21168	22168	23168
Multicast Group IP Feed B	224.0.67.168				

2.6 MDG SET OF CHANNELS ID 11 – BEST OF BOOK (RMF)

Environment	PROD	MDGSetOfChannels ID	11
Optiq Segment name	Equities	MDGSetOfChannelsName	Best of Book (RMF)

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.138	10138	11138	12138	13138
Multicast Group IP Feed B	224.0.65.138				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.139	10139	11139	12139	13139
Multicast Group IP Feed B	224.0.65.139				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.138	20138	21138	22138	23138
Multicast Group IP Feed B	224.0.67.138				

2.7 MDG SET OF CHANNELS ID 10 - SOCIETE GENERALE SYSTEMATIC INTERNALISER (SI)

Environment	PROD	MDGSetOfChannels ID	10
Optiq Segment name	Equities	MDGSetOfChannelsName	Société Générale Systematic Internalizer (SI)

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.148	10148	11148	12148	13148
Multicast Group IP Feed B	224.0.65.148				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.149	10149	11149	12149	13149
Multicast Group IP Feed B	224.0.65.149				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.148	20148	21148	22148	23148
Multicast Group IP Feed B	224.0.67.148				

3. OPTIQ SEGMENT – 2. FUNDS REAL-TIME AND SNAPSHOT CONFIGURATION

3.1 MDG SET OF CHANNELS ID 1 – FUNDS

Environment	PROD	MDGSetOfChannels ID	1
Optiq Segment name	Funds	MDGSetOfChannelsName	Funds

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.130	10130			
Multicast Group IP Feed B	224.0.65.130				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.130	20130			
Multicast Group IP Feed B	224.0.67.130				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.131	10131			
Multicast Group IP Feed B	224.0.65.131				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.132	10132			
Multicast Group IP Feed B	224.0.65.132				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.131	20131			
Multicast Group IP Feed B	224.0.67.131				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.133	10133			
Multicast Group IP Feed B	224.0.65.133				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.134	10134			
Multicast Group IP Feed B	224.0.65.134				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.135	10135			
Multicast Group IP Feed B	224.0.65.135				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.133	20133			
Multicast Group IP Feed B	224.0.67.133				

4. OPTIQ SEGMENT – 3. FIXED INCOME REAL-TIME AND SNAPSHOT CONFIGURATION

4.1 MDG SET OF CHANNELS ID 2 – FIXED INCOME

Environment	PROD	MDGSetOfChannels ID	2
Optiq Segment name	Fixed Income	MDGSetOfChannelsName	Fixed Income

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.150	10150			
Multicast Group IP Feed B	224.0.65.150				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.150	20150			
Multicast Group IP Feed B	224.0.67.150				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.151	10151			
Multicast Group IP Feed B	224.0.65.151				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.152	10152			
Multicast Group IP Feed B	224.0.65.152				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.151	20151			
Multicast Group IP Feed B	224.0.67.151				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.153	10153			
Multicast Group IP Feed B	224.0.65.153				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.154	10154			
Multicast Group IP Feed B	224.0.65.154				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.153	20153			
Multicast Group IP Feed B	224.0.67.153				

5. OPTIQ SEGMENT – 4. WARRANTS & CERTIFICATES REAL-TIME AND SNAPSHOT CONFIGURATION

5.1 MDG SET OF CHANNELS ID 4 – WARRANTS & CERTIFICATES

Environment	PROD	MDGSetOfChannels ID	4
Optiq Segment name	Warrants & Certificates	MDGSetOfChannelsName	Warrants & Certificates

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.155	10155			
Multicast Group IP Feed B	224.0.65.155				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.155	20155			
Multicast Group IP Feed B	224.0.67.155				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.156	10156			
Multicast Group IP Feed B	224.0.65.156				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.157	10157			
Multicast Group IP Feed B	224.0.65.157				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.156	20156			
Multicast Group IP Feed B	224.0.67.156				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.158	10158			
Multicast Group IP Feed B	224.0.65.158				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.159	10159			
Multicast Group IP Feed B	224.0.65.159				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.158	20158			
Multicast Group IP Feed B	224.0.67.158				

6. OPTIQ SEGMENT – 5. BOURSE DE LUXEMBOURG REAL-TIME AND SNAPSHOT CONFIGURATION

6.1 MDG SET OF CHANNELS ID 3 – BOURSE DE LUXEMBOURG

Please note that the Bourse de Luxembourg Index messages are included in the Referential Data and Full Trade Information (REFT) real-time and snapshot channels.

Environment	PROD	MDGSetOfChannels ID	3
Optiq Segment name	Bourse de Luxembourg	MDGSetOfChannelsName	Bourse de Luxembourg

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.170	10170			
Multicast Group IP Feed B	224.0.65.170				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.170	20170			
Multicast Group IP Feed B	224.0.67.170				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.171	10171			
Multicast Group IP Feed B	224.0.65.171				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.172	10172			
Multicast Group IP Feed B	224.0.65.172				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.171	20171			
Multicast Group IP Feed B	224.0.67.171				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.173	10173			
Multicast Group IP Feed B	224.0.65.173				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.174	10174			
Multicast Group IP Feed B	224.0.65.174				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.173	20173			
Multicast Group IP Feed B	224.0.67.173				

7. OPTIQ SEGMENT – 6. FINANCIAL OPTIONS REAL-TIME AND SNAPSHOT CONFIGURATION

7.1 MDG SET OF CHANNELS ID 21 – EQUITY OPTIONS NETHERLANDS

Environment	PROD	MDGSetOfChannels ID	21
Optiq Segment name	Financial Options	MDGSetOfChannelsName	Equity Options Netherlands

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.180	10180	11180		
Multicast Group IP Feed B	224.0.65.180				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.180	20180	21180		
Multicast Group IP Feed B	224.0.67.180				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.181	10181	11181		
Multicast Group IP Feed B	224.0.65.181				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.182	10182	11182		
Multicast Group IP Feed B	224.0.65.182				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.181	20181	21181		
Multicast Group IP Feed B	224.0.67.181				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.183	10183	11183		
Multicast Group IP Feed B	224.0.65.183				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.184	10184	11184		
Multicast Group IP Feed B	224.0.65.184				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.183	20183	21183		
Multicast Group IP Feed B	224.0.67.183				

7.2 MDG SET OF CHANNELS ID 20 – EQUITY OPTIONS FRANCE

Environment	PROD	MDGSetOfChannels ID	20
Optiq Segment name	Financial Options	MDGSetOfChannelsName	Equity Options France

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.175	10175	11175		
Multicast Group IP Feed B	224.0.65.175				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.175	20175	21175		
Multicast Group IP Feed B	224.0.67.175				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.176	10176	11176		
Multicast Group IP Feed B	224.0.65.176				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.177	10177	11177		
Multicast Group IP Feed B	224.0.65.177				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.176	20176	21176		
Multicast Group IP Feed B	224.0.67.176				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.178	10178	11178		
Multicast Group IP Feed B	224.0.65.178				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.179	10179	11179		
Multicast Group IP Feed B	224.0.65.179				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.178	20178	21178		
Multicast Group IP Feed B	224.0.67.178				

7.3 MDG SET OF CHANNELS ID 22 – EQUITY OPTIONS OTHER (BELGIUM AND PORTUGAL)

Environment	PROD	MDGSetOfChannels ID	22
Optiq Segment name	Financial Options	MDGSetOfChannelsName	Equity Options Other (Belgium and Portugal)

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.185	10185	11185		
Multicast Group IP Feed B	224.0.65.185				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.185	20185	21185		
Multicast Group IP Feed B	224.0.67.185				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.186	10186	11186		
Multicast Group IP Feed B	224.0.65.186				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.187	10187	11187		
Multicast Group IP Feed B	224.0.65.187				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.186	20186	21186		
Multicast Group IP Feed B	224.0.67.186				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.188	10188	11188		
Multicast Group IP Feed B	224.0.65.188				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.189	10189	11189		
Multicast Group IP Feed B	224.0.65.189				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.188	20188	21188		
Multicast Group IP Feed B	224.0.67.188				

7.4 MDG SET OF CHANNELS ID 24 – INDEX OPTIONS NETHERLANDS

Environment	PROD	MDGSetOfChannels ID	24
Optiq Segment name	Financial Options	MDGSetOfChannelsName	Index Options Netherlands

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.230	10230	11230		
Multicast Group IP Feed B	224.0.65.230				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.230	20230	21230		
Multicast Group IP Feed B	224.0.67.230				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.231	10231	11231		
Multicast Group IP Feed B	224.0.65.231				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.232	10232	11232		
Multicast Group IP Feed B	224.0.65.232				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.231	20231	21231		
Multicast Group IP Feed B	224.0.67.231				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.233	10233	11233		
Multicast Group IP Feed B	224.0.65.233				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.234	10234	11234		
Multicast Group IP Feed B	224.0.65.234				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.235	10235	11235		
Multicast Group IP Feed B	224.0.65.235				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.233	20233	21233		
Multicast Group IP Feed B	224.0.67.233				

7.5 MDG SET OF CHANNELS ID 23 – INDEX OPTIONS FRANCE

Environment	PROD	MDGSetOfChannels ID	23
Optiq Segment name	Financial Options	MDGSetOfChannelsName	Index Options France

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.220	10220	11220		
Multicast Group IP Feed B	224.0.65.220				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.220	20220	21220		
Multicast Group IP Feed B	224.0.67.220				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.221	10221	11221		
Multicast Group IP Feed B	224.0.65.221				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.222	10222	11222		
Multicast Group IP Feed B	224.0.65.222				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.221	20221	21221		
Multicast Group IP Feed B	224.0.67.221				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.223	10223	11223		
Multicast Group IP Feed B	224.0.65.223				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.224	10224	11224		
Multicast Group IP Feed B	224.0.65.224				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.225	10225	11225		
Multicast Group IP Feed B	224.0.65.225				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.223	20223	21223		
Multicast Group IP Feed B	224.0.67.223				

7.6 MDG SET OF CHANNELS ID 25 – INDEX OPTIONS OTHER (BELGIUM AND PORTUGAL)

Environment	PROD	MDGSetOfChannels ID	25
Optiq Segment name	Financial Options	MDGSetOfChannelsName	Index Options Other (Belgium and Portugal)

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.240	10240	11240		
Multicast Group IP Feed B	224.0.65.240				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.240	20240	21240		
Multicast Group IP Feed B	224.0.67.240				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.241	10241	11241		
Multicast Group IP Feed B	224.0.65.241				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.242	10242	11242		
Multicast Group IP Feed B	224.0.65.242				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.241	20241	21241		
Multicast Group IP Feed B	224.0.67.241				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.243	10243	11243		
Multicast Group IP Feed B	224.0.65.243				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.244	10244	11244		
Multicast Group IP Feed B	224.0.65.244				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.243	20243	21243		
Multicast Group IP Feed B	224.0.67.243				

7.7 MDG SET OF CHANNELS ID 18 – CURRENCY OPTIONS

Environment	PROD	MDGSetOfChannels ID	18
Optiq Segment name	Financial Options	MDGSetOfChannelsName	Currency Options

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.215	10215	11215		
Multicast Group IP Feed B	224.0.65.215				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.215	20215	21215		
Multicast Group IP Feed B	224.0.67.215				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.216	10216	11216		
Multicast Group IP Feed B	224.0.65.216				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.217	10217	11217		
Multicast Group IP Feed B	224.0.65.217				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.216	20216	21216		
Multicast Group IP Feed B	224.0.67.216				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.218	10218	11218		
Multicast Group IP Feed B	224.0.65.218				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.219	10219	11219		
Multicast Group IP Feed B	224.0.65.219				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.218	20218	21218		
Multicast Group IP Feed B	224.0.67.218				

7.8 MDG SET OF CHANNELS ID 19 – ATOMX (FOR FLEX CONTRACTS)

Environment	PROD	MDGSetOfChannels ID	19
Optiq Segment name	Financial Options	MDGSetOfChannelsName	AtomX (for Flex Contracts)

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.199	10199			
Multicast Group IP Feed B	224.0.65.199				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.199	20199			
Multicast Group IP Feed B	224.0.67.199				

8. OPTIQ SEGMENT – 7. FINANCIAL FUTURES REAL-TIME AND SNAPSHOT CONFIGURATION

8.1 MDG SET OF CHANNELS ID 27 – EQUITY & INDEX FUTURES NETHERLANDS

Environment	PROD	MDGSetOfChannels ID	27
Optiq Segment name	Financial Futures	MDGSetOfChannelsName	Equity and Index Futures Netherlands

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.200	10200	11200		
Multicast Group IP Feed B	224.0.65.200				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.200	20200	21200		
Multicast Group IP Feed B	224.0.67.200				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.201	10201	11201		
Multicast Group IP Feed B	224.0.65.201				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.202	10202	11202		
Multicast Group IP Feed B	224.0.65.202				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.201	20201	21201		
Multicast Group IP Feed B	224.0.67.201				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.203	10203	11203		
Multicast Group IP Feed B	224.0.65.203				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.204	10204	11204		
Multicast Group IP Feed B	224.0.65.204				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.205	10205	11205		
Multicast Group IP Feed B	224.0.65.205				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.203	20203	21203		
Multicast Group IP Feed B	224.0.67.203				

8.2 MDG SET OF CHANNELS ID 26 – EQUITY & INDEX FUTURES FRANCE

Environment	PROD	MDGSetOfChannels ID	26
Optiq Segment name	Financial Futures	MDGSetOfChannelsName	Equity and Index Futures France

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.190	10190	11190		
Multicast Group IP Feed B	224.0.65.190				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.190	20190	21190		
Multicast Group IP Feed B	224.0.67.190				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.191	10191	11191		
Multicast Group IP Feed B	224.0.65.191				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.192	10192	11192		
Multicast Group IP Feed B	224.0.65.192				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.191	20191	21191		
Multicast Group IP Feed B	224.0.67.191				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.193	10193	11193		
Multicast Group IP Feed B	224.0.65.193				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.194	10194	11194		
Multicast Group IP Feed B	224.0.65.194				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.195	10195	11195		
Multicast Group IP Feed B	224.0.65.195				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.193	20193	21193		
Multicast Group IP Feed B	224.0.67.193				

8.3 MDG SET OF CHANNELS ID 28 – EQUITY & INDEX FUTURES OTHER (BELGIUM AND PORTUGAL)

Environment	PROD	MDGSetOfChannels ID	28
Optiq Segment name	Financial Futures	MDGSetOfChannelsName	Equity and Index Futures Other (Belgium and Portugal)

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.210	10210	11210		
Multicast Group IP Feed B	224.0.65.210				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.210	20210	21210		
Multicast Group IP Feed B	224.0.67.210				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.211	10211	11211		
Multicast Group IP Feed B	224.0.65.211				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.212	10212	11212		
Multicast Group IP Feed B	224.0.65.212				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.211	20211	21211		
Multicast Group IP Feed B	224.0.67.211				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.213	10213	11213		
Multicast Group IP Feed B	224.0.65.213				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.214	10214	11214		
Multicast Group IP Feed B	224.0.65.214				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.213	20213	21213		
Multicast Group IP Feed B	224.0.67.213				

8.4 MDG SET OF CHANNELS ID 17 – CURRENCY FUTURES

Environment	PROD	MDGSetOfChannels ID	17
Optiq Segment name	Financial Futures	MDGSetOfChannelsName	Currency Futures

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.140	10140	11140		
Multicast Group IP Feed B	224.0.65.140				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.140	20140	21140		
Multicast Group IP Feed B	224.0.67.140				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.141	10141	11141		
Multicast Group IP Feed B	224.0.65.141				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.142	10142	11142		
Multicast Group IP Feed B	224.0.65.142				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.141	20141	21141		
Multicast Group IP Feed B	224.0.67.141				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.143	10143	11143		
Multicast Group IP Feed B	224.0.65.143				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.144	10144	11144		
Multicast Group IP Feed B	224.0.65.144				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.143	20143	21143		
Multicast Group IP Feed B	224.0.67.143				

9. OPTIQ SEGMENT – 8. COMMODITY DERIVATIVES REAL-TIME AND SNAPSHOT CONFIGURATION

9.1 MDG SET OF CHANNELS ID 16 – COMMODITY DERIVATIVES

Environment	PROD	MDGSetOfChannels ID	16
Optiq Segment name	Commodity Derivatives	MDGSetOfChannelsName	Commodity Derivatives

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.245	10245			
Multicast Group IP Feed B	224.0.65.245				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.245	20245			
Multicast Group IP Feed B	224.0.67.245				

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.246	10246			
Multicast Group IP Feed B	224.0.65.246				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.247	10247			
Multicast Group IP Feed B	224.0.65.247				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.246	20246			
Multicast Group IP Feed B	224.0.67.246				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.248	10248			
Multicast Group IP Feed B	224.0.65.248				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.249	10249			
Multicast Group IP Feed B	224.0.65.249				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.248	20248			
Multicast Group IP Feed B	224.0.67.248				

10. OPTIQ SEGMENT – 9. INDICES REAL-TIME AND SNAPSHOT CONFIGURATION

10.1 MDG SET OF CHANNELS ID 13 – EURONEXT INDICES

Environment	PROD	MDGSetOfChannels ID	13
Optiq Segment name	Indices	MDGSetOfChannelsName	Euronext Indices

Channel Type	REFI	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.250	10250			
Multicast Group IP Feed B	224.0.65.250				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.250	20250			
Multicast Group IP Feed B	224.0.67.250				

10.2 MDG SET OF CHANNELS ID 14 – EURONEXT INAV'S

Environment	PROD	MDGSetOfChannels ID	14
Optiq Segment name	Indices	MDGSetOfChannelsName	Euronext iNAV's

Channel Type	REFI	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.251	10251			
Multicast Group IP Feed B	224.0.65.251				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.251	20251			
Multicast Group IP Feed B	224.0.67.251				

10.3 MDG SET OF CHANNELS ID 15 – THIRD PARTY INDICES

Environment	PROD	MDGSetOfChannels ID	15
Optiq Segment name	Indices	MDGSetOfChannelsName	Third Party Indices

Channel Type	REFI	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.252	10252			
Multicast Group IP Feed B	224.0.65.252				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.252	20252			
Multicast Group IP Feed B	224.0.67.252				

11. OPTIQ SEGMENT – 10. TRADE REPORTING AND PUBLICATION REAL-TIME AND SNAPSHOT CONFIGURATION

11.1 MDG SET OF CHANNELS ID 29 – APA SI QUOTES

Environment	PROD	MDGSetOfChannels ID	29
Optiq Segment name	Trade Reporting and Publication	MDGSetOfChannelsName	APA SI Quotes

Channel Type	APSI	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.145		11145		
Multicast Group IP Feed B	224.0.65.145				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.145		21145		
Multicast Group IP Feed B	224.0.67.145				

11.2 MDG SET OF CHANNELS ID 30 – APA TRADE PUBLICATION

Environment	PROD	MDGSetOfChannels ID	30
Optiq Segment name	Trade Reporting and Publication	MDGSetOfChannelsName	APA Trade Publication

Channel Type	APTR	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.64.146		11146		
Multicast Group IP Feed B	224.0.65.146				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.66.146		21146		
Multicast Group IP Feed B	224.0.67.146				