

Document title

**OSLO BØRS MIGRATION TO OPTIQ®: DRESS REHEARSAL GUIDELINES
FOR OSLO BØRS DERIVATIVES AND FIXED INCOME MARKETS ON 14
NOVEMBER 2020**

Document type or subject

OSLO BØRS MIGRATION TO OPTIQ

Revision number

Revision Number: 1.2

Date

9 November 2020

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EXECUTIVE SUMMARY

Oslo Børs customers are invited to test the Oslo Børs migration to Optiq® : Order Entry Gateway (OEG) and Matching Engine (ME) on Derivatives, Cash Equities and Fixed Income Market Segments during the Dress Rehearsal organised in the Production environment on Saturday 14 November 2020 between 11:00 and 16:00 Central European Summer Time (CET).

This Dress Rehearsal will allow Oslo Børs customers to test the target Production implementation of Oslo Børs markets to be migrated in Optiq®. **Oslo Børs Customers will not be authorised to take part in the Dress Rehearsal week-end unless they have (i) validated their conformance test, (ii) confirmed Telnet connectivity to Production and (iii) ordered their Order Entry (OE) Sessions for Production.**

Markets will close on the evening of Friday 13 November 2020 and open on Monday 16 November 2020 as usual on the current market platform, without taking the activity of Saturday 14 November 2020 into account. Oslo Børs customers are responsible for purging all market data and order entry data sent and received during any Saturday test.

PREFACE

PURPOSE

The purpose of this document is to provide Oslo Børs customers with a detailed description of the Oslo Børs migration to Optiq® Dress Rehearsal on Saturday 14 November 2020.

ASSOCIATED DOCUMENTS

This document should be read in conjunction with the following documents.

TITLE	DESCRIPTION
Oslo Børs Migration Guidelines	Guidelines for the Oslo Børs migration to Optiq®
Optiq Euronext File Services User Guide	EFS user guide
Euronext Cash Markets - Optiq OEG Connectivity Configuration specifications	Description of the Production Order entry connectivity configuration
EURONEXT OPTIQ MARKET DATA GATEWAY PRODUCTION ENVIRONMENT V2.5	Description of the Production Market data connectivity configuration
Euronext Cash and Derivatives Markets – Optiq File Specification	Description of the files for Cash and Derivatives
Euronext Cash and Derivatives Markets – Optiq MDG Client Specifications	To be used by all segments for phase 3
Euronext Cash Markets - Optiq OEG Client Specifications - SBE Interface	Optiq binary protocol specifications for phase 3
Euronext Cash Markets - Optiq OEG Client Specifications - FIX 5.0 Interface	Optiq FIX 5.0 protocol specifications for phase 3
Euronext Cash Markets - Optiq Kinematics Specifications	
Euronext Cash Markets - Optiq & TCS Error List	
Oslo Børs Optiq® migration: production listing schedule	Info-Flash providing the list of Oslo product available for Dress rehearsal

DOCUMENT HISTORY

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

VERSION NO.	DATE	CHANGE DESCRIPTION
1.0	29 September 2020	First Dress Rehearsal Guidelines for Oslo Børs migration to Optiq®: ORDER ENTRY GATEWAY (OEG) AND MATCHING ENGINE (ME) for Cash Equities, ETFs and Structured Products Market Segments
1.1	26 October 2020	Second Dress Rehearsal Guidelines for Oslo Børs migration to Optiq®: ORDER ENTRY GATEWAY (OEG) AND MATCHING ENGINE (ME) for Cash Equities, ETFs and Structured Products Market Segments
1.2	9 November 2020	First Dress Rehearsal Guidelines for Oslo Børs migration to Optiq®: ORDER ENTRY GATEWAY (OEG) AND MATCHING ENGINE (ME) for Derivatives and Fixed income Market Segments

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

■ **Operational Client Support**

- Tel: +33 1 85 14 85 85

Email: clientsupport@euronext.com

Further Information :

- For the Oslo Project page please visit: <https://connect2.euronext.com/en/projects/oslo>
- For technical specifications visit: [IT Documentation](#)

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1. SCOPE OF THE TEST

1.1 TEST OVERVIEW

Oslo Børs customers are expected to conduct the following tests:

- Secure network resources on the day of the Dress Rehearsal to validate firewall / security path
- Connect to the Production environment
- Inject orders
- Purge the book at the end of the day and restore the order book to Friday night

Validate their participation at the end of the day [through the following web form](#).

1.2 ACCESS TO SERVICES & APPLICATIONS

Euronext services and applications will be set up as follows for the rehearsal:

- Optiq Order Entry and Market Data for Oslo Derivatives and Oslo Cash Market Segments, including Drop Copy
- For clearable instruments (securities and derivatives), Trading members' trading permissions on Oslo Børs markets with target clearing configuration regarding their target clearing member and (interoperable) CCPs
- Saturn OBOE

1.3 DETAILS

Below please find details relevant to the Oslo Børs migration to Optiq® Dress Rehearsal tests for Derivatives and Cash Fixed Income segments on Saturday 14 November 2020.

Before 11:00 CET

- Order entry connectivity may be available.

Between 11:00 and 15:00 CET, customers are required to:

- Connect to the Production environment:
 - Test and validate the Optiq Order Entry logical connectivity on Cash market segments.
 - Log on through their OEG connections for Cash:
 - OEG connectivity for: Derivatives and Cash segments.
 - Perform Market Data checks on MDG (Oslo Børs Derivatives & Cash channels).
 - Check the market data broadcast via multicast by connecting their application/feed handler to Real time and Snapshot.
 - Retrieve required files from Euronext Files Services (EFS).
- Inject orders
 - For example:
 - Any Oslo product on Derivatives and Cash segments order through OEG.
 - Customers can verify the publication of market data through the expected MDG channels.
 - On member request, Euronext can generate some activities for some dedicated Oslo products: such as Order creation, Trade creation or instrument suspension. Feel free to make dedicated request to:

Operational Client Servicesclientsupport@euronext.com

Tel: +33 1 85 14 85 85

- Purge the book at the end of the day and restore the order book to Friday night
 - This applies to orders sent through OEG for any Derivatives and Cash products and any internal data stored on the client side.
- Validate their participation at the end of the day via web form:
 - The [Dress Rehearsal Participation Form](#)

Between 15:00 and 16.00 CET, Euronext may conduct further internal tests. Customers are invited to ignore any data received after the Dress Rehearsal tests.

1.4 OUT OF SCOPE

The following services / markets are out of scope for this rehearsal:

- Tests with CCPs: LCH Ltd, EuroCCP, Six X-Clear, LCH SA
- Other Saturn services except OBOE

2. CUSTOMER SUPPORT

Customer support is provided as follows:

- On Saturday 14 November 2020, support will be provided by Euronext Market Services (EMS) from 11:00 to 16:00 CET;
- Customers who experience issues during the Dress Rehearsal are invited to contact the Operational Client Services Desk on clientsupport@euronext.com or +33 1 8514 8585 during the week following the dress rehearsal tests.

In the case of questions related to the tests, customers may contact the **Operational Client Services Desk** ahead of the tests and during the Dress Rehearsal by email at clientsupport@euronext.com or EMS by phone at +33 1 8514 8585.

- Real-time events will be posted on the Market Status website during the Dress Rehearsal validation at: www.euronext.com/market-status

3. MAIN PRINCIPLES OF THE TEST

Customers will be notified to connect to the platform via the [Market Status webpage](#).

Upon confirmation of start of test customers should be able to connect to the Euronext OEGs and MDGs for the market segments below:

- Cash Equities
- Cash Funds
- Cash Fixed Income
- Cash warrants and certificates
- Equity Derivatives
- Index Derivatives

The sequence for market opening is the following:

- Euronext will start a pre-opening trading session
- As soon as Euronext considers that Derivatives and Cash markets are ready to be fully operational, a continuous trading session will be set up on Optiq. Customers are invited to make sure that their internal systems and access means are correctly synchronised with Euronext Optiq.

Euronext would like to make this test as realistic as possible in order to draw the most relevant and useful conclusions, and therefore encourages customers to participate actively by sending orders.

3.1 TRADING DATES DETAILS

The trading date used for the purposes of the test will be Saturday 14 November 2020.

- For Oslo instruments and for all Derivatives and Cash segments: No orders will be present in the order book

Euronext invites customers to enter orders as they would do in the Production environment.

MDG Standing data files will be available on Saturday 14 November 2020 with the business date of Monday 16 November 2020. Please make sure you do not have any security in place that would prevent to process them. As always Index Standing Data files may be delivered later than the other Optiq standing data files.

3.2 PRE-REQUISITES FOR TAKING PART IN THE DRESS REHEARSAL

Following are mandatory for any customer expecting to take part in the Dress Rehearsal week-end:

- 1) To have validated their conformance test,**
- 2) To have confirmed Telnet connectivity to Production and**
- 3) To have ordered their OE Sessions for Production.**

Customers must have a Euronext File Services (EFS) account to access the Pre-Production Optiq Euronext File Services. Customers can request their account by contacting Customer Access Services (CAS):

- Phone: +33 1 85 148 589
- Email: cas@euronext.com

For Saturn users:

it is necessary to request an environment switch EUA to PROD of the current Admin access, in order to set the API access (Creation, IP, certificate) on Prod environment before the Dress Rehearsal.

The Switch web form is available at the following link <https://connect2.euronext.com/fr/form/saturn-environment-switch>

Please note that the EUA standard users (RSA token) in EUA will be automatically switched in PROD for the DR.

4. DRESS REHEARSAL TEST SCHEDULE

Note: All timings are approximate and are stated in CET

Timeline	Action	Cash	Derivatives
11:00	<ul style="list-style-type: none"> Beginning of the test Participants are invited to check the status and timeline on the Market Status web page 	✓	✓
11:15	<ul style="list-style-type: none"> Referential Files are made available: Standing Data File will be provided on the Euronext File Server (except for Index). Market Data: Optiq MDG Technical "Start Of Day" messages should be broadcasted over MDG Production multicast channels 	✓	✓
11:30	<ul style="list-style-type: none"> Euronext Optiq MDG real-time Standing Data messages will be provided over MDG Production multicast channels. Index Referential Files are made available: index Standing Data File will be provided on the Euronext File Server 	✓ ✓	✓
11:45	<ul style="list-style-type: none"> Euronext Optiq MDG real-time MarketUpdate, MarketStatusChange, MarketUpdate, TechnicalNotification, Price Update, OrderUpdate, Timetable messages will be provided over MDG Production multicast channels 	✓	✓
12:00	<ul style="list-style-type: none"> Pre-Opening (call) Session for the Oslo markets. Euronext will generate some orders on : FixedIncome: (ISIN: NO0010291040 SymbolIndex: 2284969) Equity Derivatives: EQ6 (ISIN: NO0010096985) Index Derivatives: OBF and OBX (ISIN: NO0000000021) Equities: SCHA (ISIN: NO0003028904 SymbolIndex: 2274159) Funds: OBXD (ISIN: NO0010257801 SymbolIndex: 2280082) 	✓	✓
12:30	<ul style="list-style-type: none"> Opening (continuous) Session for the Oslo markets. Euronext will generate some trades on FixedIncome: (ISIN: NO0010291040 SymbolIndex: 2284969) Equity Derivatives: EQ6 (ISIN: NO0010096985) Index Derivatives: OBF and OBX (ISIN: NO0000000021) Equities: SCHA (ISIN: NO0003028904 SymbolIndex: 2274159) Funds: OBXD (ISIN: NO0010257801 SymbolIndex: 2280082) Euronext will generate index price variation on OBX (ISIN: NO0007035376 SymbolIndex: 3546) 	✓	✓
15:00	<ul style="list-style-type: none"> End of customer tests Customers can disconnect from Euronext central systems A Market Status message is sent confirming the end of the Dress Rehearsal 	✓ ✓ ✓	✓

Timeline	Action	Cash	Derivatives
15:00 16:00	<ul style="list-style-type: none"> Euronext may conduct internal tests such as HA test on Equity Derivatives (Partition ID: 121) & Fixed Income (Partition ID: 30) segments broadcast of TechnicalNotification, MarketUpdate, PriceUpdate 	✓	✓

4.1 IMPORTANT REMINDERS

During the test, Euronext will not be able to broadcast the real-time Standing data messages over Optiq Market Data twice. Customers who have missed the broadcast of the referential data are requested to use the Optiq Standing Data files made available on the [EFS](#).

Euronext will not consider any requests or potential customer issues encountered on the day of the Production migration if the customer has not taken part in the prior rehearsal tests or EUA validation.

4.2 ROLL-BACK FOR CUSTOMERS' INTERNAL SYSTEMS

Upon completion of the Dress Rehearsal, customers must restore/rollback the order book data in their internal Production systems to the state of Friday 13 November 2020 evening after the end of the trading session. It is very important that customers do NOT synchronise their order book with the data from the **tests** performed on Saturday 14 November 2020.

The Saturday 14 November 2020 session will not be taken into account in the Live/Production environment which will start on Monday 16 November 2020 as usual. Customers are requested to ensure their readiness for the next trading day's activities following any Saturday test.

Customers are responsible for purging all market data and order entry data sent and received during any Saturday test.

4.3 CONTACTS

On Saturday 14 November 2020, Euronext Market Services (EMS) will be available for the Pre-Production support. Questions about the rehearsal (e.g. tests, timelines), associated MDG and EFS changes, can be directed to:

Operational Client Services
clientsupport@euronext.com
 Tel: +33 1 85 14 85 85

ANNEX 1: ORDER ENTRY AND DROP-COPY GATEWAY

Segment & Partition IP Information

Production environment

Optiq Segment Name	Partition ID	IP of Individual Partition
Equities	10	212.197.194.2
	11	212.197.194.5
	12	212.197.194.8
	13	212.197.194.11
Funds (ETFs)	20	212.197.194.13
Fixed Income (Bonds)	30	212.197.194.17
Equity Derivatives	120	212.197.194.35
	121	212.197.194.37
	122	212.197.194.33
Index Derivatives	110	212.197.194.31

IP Addresses for Drop Copy

For the Cash Markets

Production environment

Drop Copy ID	IP Address
990	212.197.194.61
991	212.197.194.62
992	212.197.194.63
993	212.197.194.64

For the Derivatives Markets

Production environment

Drop Copy ID	IP Address
980	212.197.194.83
981	212.197.194.84
982	212.197.194.87
983	212.197.194.88