

Document title

**OSLO BØRS MIGRATION TO OPTIQ®: DRESS REHEARSAL GUIDELINES
FOR CASH MARKET SEGMENTS ON 10 OCTOBER 2020**

Document type or subject

OSLO BØRS MIGRATION TO OPTIQ

Revision number

Revision Number: 1.0

Date

5 October 2020

This document is for information purposes only. The information and materials contained in this document are provided 'as is' and Euronext does not warrant the accuracy, adequacy or completeness and expressly disclaims liability for any errors or omissions. This document is not intended to be, and shall not constitute in any way a binding or legal agreement, or impose any legal obligation on Euronext. This document and any contents thereof, as well as any prior or subsequent information exchanged with Euronext in relation to the subject matter of this presentation, are confidential and are for the sole attention of the intended recipient. Except as described below, all proprietary rights and interest in or connected with this publication shall vest in Euronext. No part of it may be redistributed or reproduced without the prior written permission of Euronext. Portions of this presentation may contain materials or information copyrighted, trademarked or otherwise owned by a third party. No permission to use these third party materials should be inferred from this presentation.

Euronext refers to Euronext N.V. and its affiliates. Information regarding trademarks and intellectual property rights of Euronext is located at <https://www.euronext.com/terms-use>.

EXECUTIVE SUMMARY

Oslo Børs customers are invited to test the Oslo Børs migration to Optiq® : Order Entry Gateway (OEG) and Matching Engine (ME) on Cash Equities, ETFs and Structured Products Market Segments during the Dress Rehearsal organised in the Production environment on **Saturday 10 October 2020** between 11:00 and 16:00 Central European Summer Time (CEST).

This Dress Rehearsal will allow Oslo Børs customers to test the target Production implementation of Oslo Børs 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 9 October 2020 and open on Monday 12 October 2020 as usual on the current market platform, without taking the activity of Saturday 10 October 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 10 October 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 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	

DOCUMENT HISTORY

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

VERSION NO.	DATE	CHANGE DESCRIPTION
1.0	5 October 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

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](#)

CONTENTS

EXECUTIVE SUMMARY	2
PREFACE	3
PURPOSE	3
ASSOCIATED DOCUMENTS	3
DOCUMENT HISTORY	3
SUPPORT	3
1. SCOPE OF THE TEST	6
1.1 TEST OVERVIEW	6
1.2 ACCESS TO SERVICES & APPLICATIONS.....	6
1.3 DETAILS	6
1.4 OUT OF SCOPE.....	7
2. CUSTOMER SUPPORT	8
3. MAIN PRINCIPLES OF THE TEST	9
3.1 TRADING DATES DETAILS	9
3.2 PRE-REQUISITES FOR TAKING PART IN THE DRESS REHEARSAL	9
4. DRESS REHEARSAL TEST SCHEDULE	11
4.1 IMPORTANT REMINDERS	11
4.2 ROLL-BACK FOR CUSTOMERS' INTERNAL SYSTEMS.....	12
4.3 CONTACTS	12

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 Cash Equities, ETFs and Structured Products Market Segments, including Drop Copy
- For clearable securities, Trading members' trading permissions on Oslo Bors markets with target clearing configuration regarding their target clearing member and interoperable CCP
- Saturn

1.3 DETAILS

Below please find details relevant to the Oslo Børs migration to Optiq® Dress Rehearsal tests for Cash Equities, Structured Products and ETFs Segments on Saturday 10 October 2020.

Between 11:00 and 15:00 CEST, 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: Equities, Funds, Warrants And Certificates segments.
 - Perform Market Data checks on MDG (Oslo Bors 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 Cash Equities, ETFs and Structured Products segments order through OEG.
 - Customers can verify the publication of market data through the expected MDG channels.
- 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 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 CEST, 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
- Oslo Bors Fixed Income market
- Oslo Bors Derivatives market
- APA service on Saturn platform

2. CUSTOMER SUPPORT

Customer support is provided as follows:

- On Saturday 10 October 2020, support will be provided by Euronext Market Services (EMS) from 11:00 to 16:00 CEST;
- 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:

- Equities
- Funds
- Warrants And Certificates

The sequence for market opening is the following:

- Euronext will start a pre-opening trading session
- As soon as Euronext considers that the 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 10 October 2020.

- For all Derivatives and Fixed Income segments: No orders will be present in the book

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

MDG Standing data files for Oslo markets will be made available on Saturday 10 October 2020 with the business date of Monday 12 October 2020. Please make sure you do not have any security in place that would prevent to process them.

3.2 PRE-REQUISITES FOR TAKING PART IN THE DRESS REHEARSAL

It is mandatory for any customer expected 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) will be automatically switched in PROD for the Dress Rehearsal.

4. DRESS REHEARSAL TEST SCHEDULE

Note: All timings are approximate and are stated in CEST

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 	✓	No
11:15	<ul style="list-style-type: none"> Referential Files are made available: Standing Data File will be provided on the Euronext File Server. Market Data: Optiq MDG Technical "Start Of Day" messages should be broadcasted over MDG Production multicast channels 	✓	No
11:30	<ul style="list-style-type: none"> Euronext Optiq MDG real-time Standing Data messages will be provided over MDG Production multicast channels 	✓	No
11:45	<ul style="list-style-type: none"> Euronext Optiq MDG real-time MarketUpdate, MarketStatusChange, TechnicalNotification, Price Update, OrderUpdate messages will be provided over MDG Production multicast channels 	✓ ✓	No
12:00	<ul style="list-style-type: none"> Opening and Continuous Trading Session for the Oslo markets. 	✓	No
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 	✓ ✓ ✓	No
15:00 - 16:00	<ul style="list-style-type: none"> Euronext may conduct internal tests such as HA test on Equity & Funds segments broadcast of TechnicalNotification, MarketUpdate, PriceUpdate 	✓	No

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 09 October 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 10 October 2020.

The Saturday 10 October 2020 session will not be taken into account in the Live/Production environment which will start on Monday 12 October 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 10 October 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