

## PRODUCTION DATES:

Cash Markets (Equities, Funds, ETNs) & Indices: Monday 9 November 2020

Fixed Income & Derivatives Markets: Monday 30 November 2020

## Customer readiness checklist for Go-Live:

### CONNECTIVITY

- Ensure that all connectivity is in place via ICE Global Network or your provider for:
  - Unicast bandwidth (OEG & Drop copy)
  - Multicast bandwidth (MDG channels)

For any questions about connectivity through ICE Global Network, please contact your ICE Sales representative or email: [iceglobalnetwork-info@theice.com](mailto:iceglobalnetwork-info@theice.com).

Market data is available as 'Shaped' and / or 'Compressed'. Note that as a general rule, the maximum bandwidth for cash and Derivatives markets is expected to be under 1Gb.

**Please note that connectivity for production is subject to signature of the Euronext Market Data Agreement (EMDA).** For further questions, contact [databyeuronext@euronext.com](mailto:databyeuronext@euronext.com).

- Configure network
- Conduct telnet test

Telnet testing is a prerequisite to participate in a Dress Rehearsal. The test allows you to validate the route between your IP addresses to the Euronext Optiq Order Entry Gateways (OEGs) for both Cash and Derivatives markets.

Production telnet tests can be performed from **20:30 to 01:00 CET** on **Port 45000**. DR Telnet testing can be performed throughout the day. For EUA telnet testing, please use your Logical Access connection details (IP address & port) provided to your Member Connectivity Administrator (MCA) by the Euronext Market Access team.

## PRODUCTION CONNECTIVITY

### OSLO MDG CHANNEL IDs

Cash			Fixed Income		Derivatives		Indices
Equities Norway	Funds	ETNs	Regulated Market	Nordic ABM	EQD	IDD	
<b>ID 10</b> <i>*NEW*</i>	ID 1	ID 4	ID 2	<b>ID 12</b> <i>*NEW*</i>	ID 22	ID 25	ID 13

### OPTIQ OEG AND DROP COPY: PRODUCTON & DISASTER RECOVERY CONNECTION DETAILS

## CASH MARKETS

Application	Segment	Partition	IP ADDRESS <i>* PRODUCTION *</i>	IP ADDRESS <i>DISASTER RECOVERY</i>
OEG	Equities	10	<a href="#">212.197.194.2</a>	212.197.229.2
OEG	Equities	11	<a href="#">212.197.194.5</a>	212.197.229.3
OEG	Equities	12	<a href="#">212.197.194.8</a>	212.197.229.4
OEG	Equities	13	<a href="#">212.197.194.11</a>	212.197.229.5
OEG	Funds (ETFs)	20	<a href="#">212.197.194.13</a>	212.197.229.8
OEG	Warrants and Certificates	40	<a href="#">212.197.194.19</a>	212.197.229.6
OEG	Fixed Income (Bonds)	30	<a href="#">212.197.194.17</a>	212.197.229.9
Drop Copy	Drop Copy Gateway 1	990	<a href="#">212.197.194.61</a>	212.197.229.21
Drop Copy	Drop Copy Gateway 2	991	<a href="#">212.197.194.62</a>	212.197.229.22
Drop Copy	Drop Copy Gateway 3	992	<a href="#">212.197.194.63</a>	212.197.229.23
Drop Copy	Drop Copy Gateway 4	993	<a href="#">212.197.194.64</a>	212.197.229.24

## PRODUCTION CONNECTIVITY

### DERIVATIVES MARKETS

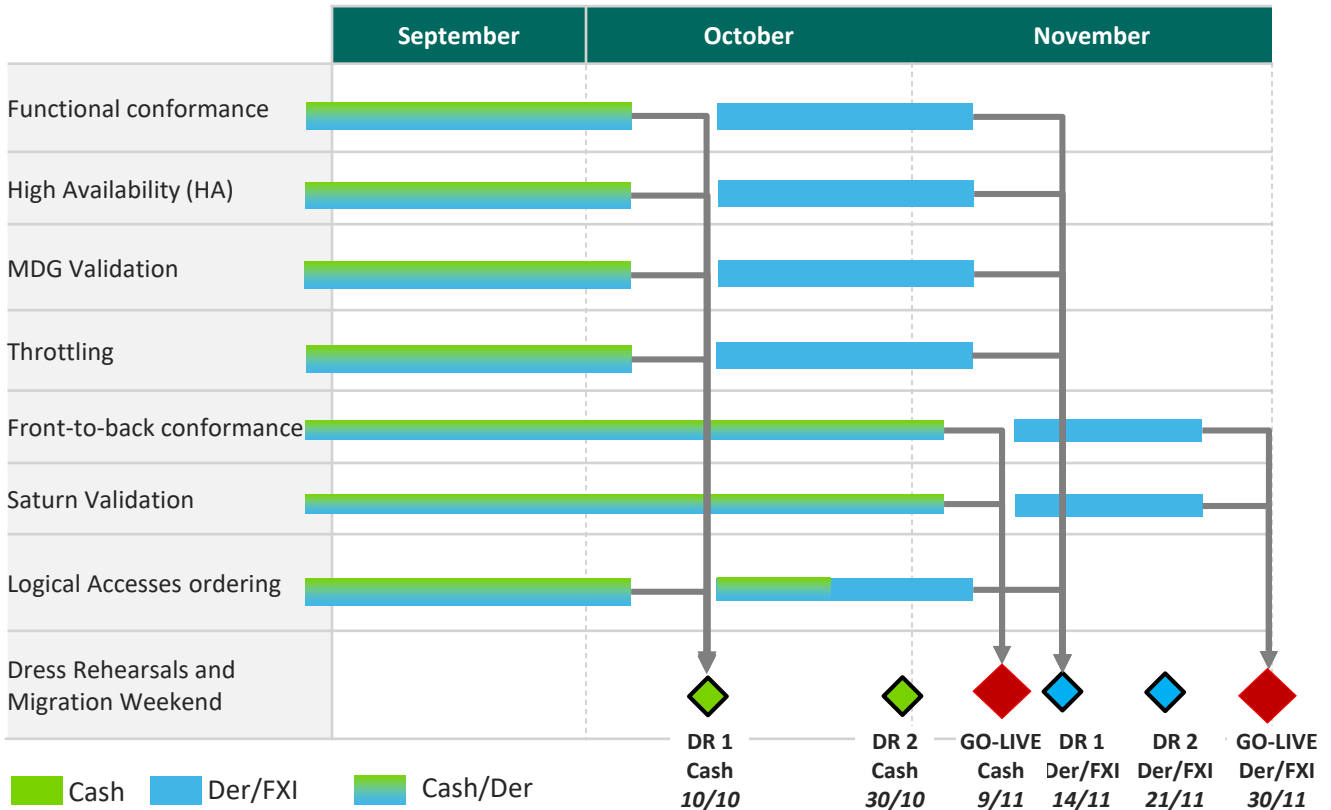
Application	Segment	Partition	IP ADDRESS * <b>PRODUCTION</b> *	IP ADDRESS <i>DISASTER RECOVERY</i>
OEG	Commodities	80	<a href="#">212.197.194.29</a>	212.197.229.11
OEG	Equity Derivatives	120	<a href="#">212.197.194.35</a>	212.197.229.14
OEG	Equity Derivatives	121	<a href="#">212.197.194.37</a>	212.197.229.15
OEG	Equity Derivatives	122	<a href="#">212.197.194.33</a>	212.197.229.13
OEG	Index Derivatives	110	<a href="#">212.197.194.31</a>	212.197.229.12
Drop Copy	Drop Copy Gateway 1	980	<a href="#">212.197.194.83</a>	212.197.229.40
Drop Copy	Drop Copy Gateway 2	981	<a href="#">212.197.194.84</a>	212.197.229.41
Drop Copy	Drop Copy Gateway 3	982	<a href="#">212.197.194.87</a>	212.197.229.42
Drop Copy	Drop Copy Gateway 4	983	<a href="#">212.197.194.88</a>	212.197.229.43

#### **Note on the SBE Template**

We remind you that the minimum versions of the SBE Template are the following ones:

- For Cash markets (Equities, ETNs and Funds): V. 302
- For Fixed Income markets: V. 302
- For Derivatives markets: V. 217

## CONFORMANCE TESTING



### Functional Conformance Test

It is mandatory to complete an Order Entry functional conformance test at least five (5) days before the Dress Rehearsal in which you want to participate. This applies to Cash, Derivatives and Fixed Income.

If you are a new member of Euronext and not previously connected to Optiq:

- A full conformance test is required if you have built your own application
- A light conformance test is required if you use a software provider. One light conformance test is required per software vendor. Please liaise with your provider(s) to ensure that you have the appropriate binaries in place to complete the test.

For existing Euronext members already connected to Optiq, only a light conformance test is required.

There is one script covering both the full and light conformance tests. The Euronext analyst will confirm the relevant test scenarios to complete. Conformance scripts can be download via the Connect customer portal for: [Cash Markets](#), [Derivatives](#) and [Fixed Income](#).

Please liaise with [Oslomigration@euronext.com](mailto:Oslomigration@euronext.com) to book a test slot.

## CONFORMANCE TESTING

- High Availability (HA) testing

High Availability tests guarantee that the application you use to connect to Optiq correctly handles recovery in case of failure of the Matching Engine.

If you are a new member of Euronext not previously connected to Optiq, the test is:

- Mandatory if you have built your own application
- Recommended if you use a software provider

**If High Availability testing is mandatory for you, you must have performed this test in order to receive your Conformance Certification.**

High Availability tests are planned regularly in the EUA platforms for Cash and Derivatives segments. Please refer to the [high availability notice](#).

Completion of the test must be confirmed via a web form in the Connect portal (link available in the [Migration Guidelines](#)).

- MDG validation

It is key that full testing on market data is completed to have a complete understanding of the standing data provided as well as the sequencing and logic of real-time data. If you are using a data vendor, please ensure that you have the relevant binaries available to complete your testing on time.

All members wishing to trade on the Oslo market must complete testing and confirm completion via a web form available in the Connect portal (link available in the [Migration Guidelines](#)).

The MDG validation web form must be filled at least five (5) days before the Dress Rehearsal in which you want to participate.

- Throttling

Application messages sent to Optiq can be throttled. Throttling is defined per second, per partition and per Logical Access. At log-on, clients can choose to Queue or Reject their throttled messages (for queuing of messages, the throttling queue is equal to twice the 'per second' throughput of the Logical Access. Any message above the queue size is rejected). It is therefore highly recommended for new members not yet connected to Optiq to perform testing. If you use a software vendor, please liaise with them in order to understand which method(s) they support based on your trading profile.

If you are a new member building your own application, this test is mandatory. Please contact [oslomigration@euronext.com](mailto:oslomigration@euronext.com) to book a test slot.

Completion of the test should be confirmed via a web form available in the Connect portal (link available in the [Migration Guidelines](#)).

- Saturn validation

Saturn is the Euronext global reporting service covering **mandatory services (SLC Manager)** as well as **OBOE, APA and ARM**.

Members wishing to use the OBOE service on Oslo must complete a self-conformance test which involves submitting a number of declarations with the status "Checked & Ready" with the reference ID for each.

Completion of the test should be confirmed via a web form available in the Connect portal (link available in the [Migration Guidelines](#)).

## CONFORMANCE TESTING

- Front to Back testing

Front to Back testing is **mandatory for all Trading Members** wishing to trade on Oslo Cash and / or Derivatives markets.

- For Trading Firms, it allows you to ensure that clearing instructions are correctly processed from front-office to back-office systems
- For Clearers, it allows you to ensure that clearing & reconciliation are correctly processed

Completion of the test must be confirmed via web form in the Connect portal (links available in the [Migration Guidelines](#)). Note that there a dedicated script and web forms are available for the Derivatives markets. Front To Back testing must be completed before Go-Live on Cash and / or Derivatives.



## ORDERING YOUR LOGICAL ACCESS FOR PRODUCTION

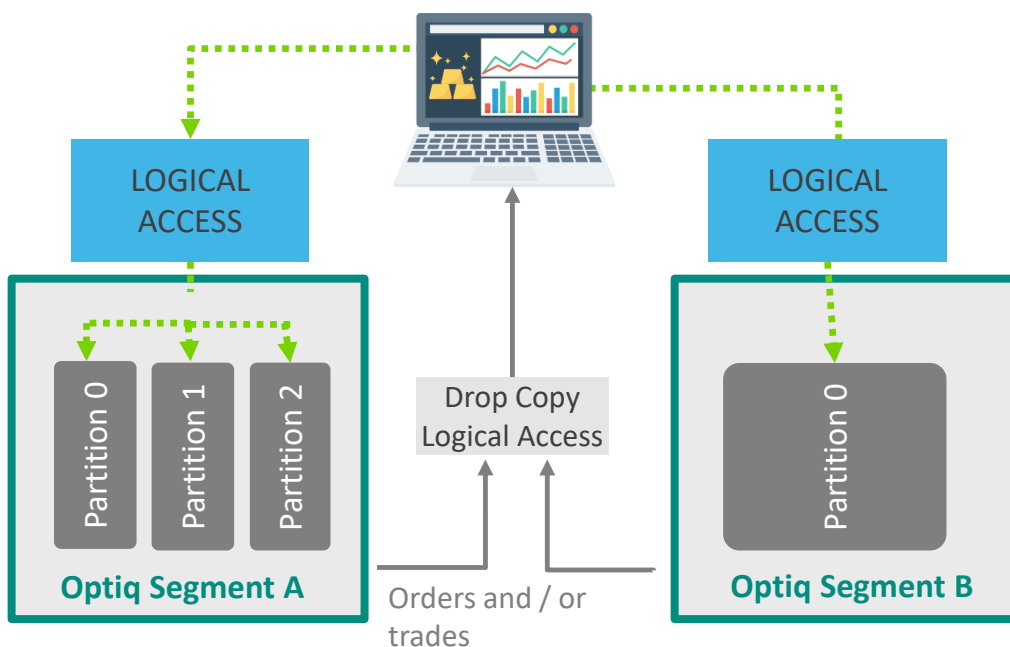
All Trading Members should make sure that they have ordered Logical Accesses for production at least one week before the Dress Rehearsal in which they wish to participate.

The below provides guidelines for new Euronext members.

Existing Euronext members wishing to trade Oslo Cash and / or Derivatives can use their existing Logical Accesses or may alternatively order additional ones.

For additional details, please contact Euronext Customer Access Services at [cas@euronext.com](mailto:cas@euronext.com), Euronext Client Support or your local Sales relationship manager.

### GENERAL OVERVIEW



Customers must have at least one Logical Access per market segment on which they have trading authorisations.

A Logical Access provides access to all partitions of a segment. Please note that the capacity of Logical Accesses is always provided at partition level. Drop Copy sessions are cross-segment, meaning that through a Drop Copy session, you can monitor all your trading activity on Cash or Derivatives markets across all segments.

For each market segment, Trading Members can choose between low bandwidth or high capacity Logical Accesses, depending on their trading profile.

Market Makers / Liquidity Providers may order dedicated Logical Accesses. For both Cash and Derivatives Markets, these sessions allow firms to submit orders flagged as LP or not on the Cash Markets, and Quotes and single orders on the Derivatives markets.

## ORDERING YOUR LOGICAL ACCESS FOR PROD

The following provides high-level guidance for ordering Logical Accesses based on your trading profile

Trading	MMs / LPs
<ul style="list-style-type: none"> <li>▪ Standard Cash &amp; Derivatives Logical Accesses available:               <ul style="list-style-type: none"> <li>- <b>Derivatives:</b> fixed capacity per session (100 msgs/s per partition)</li> <li>- <b>Cash:</b> from 5 msgs/s to 200 msgs/s per partition with an increment of 5 msgs/s</li> </ul> </li> <li>▪ Low capacity Logical Accesses available on Derivatives (30 msgs/s per partition)</li> <li>▪ Free low capacity package available on Cash with a maximum capacity of 30 msgs/s across all segments</li> <li>▪ Orders only (no Quotes allowed on Derivatives)</li> <li>▪ SBE &amp; FIX</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dedicated sessions for MMs &amp; LPs:               <ul style="list-style-type: none"> <li>- <b>Derivatives:</b> standard session with fixed capacity (400 msgs/s per partition)</li> <li>- <b>Cash:</b> from 5 msgs/s to 400 msgs/s per partition with an increment of 5 msgs/s. Note that certain conditions apply per segment.</li> </ul> </li> <li>▪ Low capacity Logical Accesses available on Derivatives (50 msgs/s per partition)</li> <li>▪ Orders and Quotes (for Derivatives, Warrants &amp; Certificates segments) allowed</li> <li>▪ SBE protocol mandatory for Derivatives</li> <li>▪ SBE &amp; FIX for Cash</li> </ul>

Note that dedicated Logical Accesses for RiskGuard, the Euronext Pre-Trade Risk Management Service, are also available on Derivatives.

For all details, please refer to the [Euronext OEG Sessions Fee Guide Effective 9 Nov 2020](#).

### CONNECTIVITY TO OPTIQ PARTITIONS

- Customers have the possibility to establish a physical connection to each partition of a segment and send messages directly to the partition on which the instrument is located (data provided in the Standing Data files).
- This configuration is recommended not only for optimal latency, to benefit from the whole capacity set at the Optiq segment, but also for resilience.



## ORDERING YOUR LOGICAL ACCESS FOR PROD

### HOW TO ORDER YOUR LOGICAL ACSESSES

Logical Accesses can only be ordered by your Member Connectivity Administrator (MCA) in the Connect portal and must be requested at least one week before the Dress Rehearsal in which you wish to participate.

If you use an application hosted by an external software provider (ASP), please note that providers do not have the ability to order Logical Accesses on behalf of their clients.

The Logical Access connectivity details will be communicated to your MCA two days before the Dress Rehearsal.

For any questions, please contact Euronext Customer Access Services at [cas@euronext.com](mailto:cas@euronext.com) (Tel: +33 1 85 148 589).

MCAs can access the Production Order Forms via the Connect portal:  
[Logical Access Production Order Forms](#)

## PARTICIPATE IN A DRESS REHEARSAL

Only Trading Members that have completed the steps described above will be allowed to participate in Dress Rehearsals.

It is mandatory for all Trading Members to participate in at least one Dress Rehearsal.

The Dress Rehearsal is a key milestone for you prior to the migration to ensure that:

- All your connectivity for Go-Live is in place;
- You can successfully receive standing data files and real-time market update across the channels;
- You can successfully submit orders and quotes.

We strongly advise that you participate fully in this test.

Note that Front to Back testing will not be part of the Dress Rehearsals.

The Dress Rehearsal Schedule will be communicated on the Monday before each Dress Rehearsal.

### CONTACT:

For any further questions, please do not hesitate to contact [oslomigration@euronext.com](mailto:oslomigration@euronext.com) or the Euronext Operational Client Support desk at [clientsupport@euronext.com](mailto:clientsupport@euronext.com).