EURONEXT

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EURONEXT DATA CENTRE - MIGRATION GUIDELINES

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INTRODUCTION

PURPOSE

Euronext will migrate its Production Data Centre, currently located in Basildon, United Kingdom, to the Aruba Global Cloud Data Centre (IT3), located in Bergamo, Italy. The objective of this document is to present the migration guidelines as well as the client testing approach. It aims to describe the prerequisites for participation in the Dress Rehearsals and prepare clients for the Go-Live Weekend.

TARGET AUDIENCE

The intended audience of this document is any Euronext client impacted by the migration of the Data Centre from Basildon to Bergamo. This document is for informational purposes only and should be consulted alongside the related documentation detailed in the Associated Documents section.

DEFINITIONS

- **Production** – Euronext Markets on Optiq and surrounding systems hosted in the <u>Data Centre in Basildon, United Kingdom.</u>
- **"New" Production** – Euronext Markets on Optiq and surrounding systems hosted in the <u>Data Centre in Bergamo, Italy.</u>
- **Current EUA** (also called V-EUA) – Euronext External User Acceptance (EUA) platform on Optiq and surrounding systems reflecting the current Production environment, hosted in the <u>Data Centre in Basildon, United Kingdom.</u>
- **"New" Current EUA** - Euronext EUA platform on Optiq and surrounding systems reflecting the "New" Production environment, hosted in the <u>Data Centre in Bergamo, Italy.</u>
- **Next EUA** (also called P-EUA) - Euronext EUA platform on Optiq and surrounding systems reflecting the future Production environment based on forthcoming/next releases, hosted in the <u>Data Centre in Basildon, United Kingdom.</u>
- **"New" Next EUA** - Euronext EUA platform on Optiq and surrounding systems reflecting the future Production environment based on forthcoming/next releases, hosted in the <u>Data Centre in Bergamo, Italy.</u>
- **Disaster Recovery (DR)** – A Euronext Disaster Recovery event occurs when Euronext switches client systems processing from the Euronext production environment to the Euronext DR environment. The DR environment provides redundant standby systems to be used upon the failure of the Euronext Production environment.
- **"New" Disaster Recovery (DR)** – A Euronext Disaster Recovery event occurs when Euronext switches client systems processing from the future Euronext

production environment to the future Euronext DR environment. The future DR environment - hosted in the <u>Data Centre in Saint-Denis, France -</u> must provide redundant standby systems to be used upon the failure of the Euronext future Production environment.

- **Dress Rehearsal** – The Dress Rehearsals will take place before the Go-Live weekend, allowing customers to test the target "New'' Production Data Centre infrastructure in advance.
- **Roll-back** – Data and applications are reverted back to the situation of Friday evening, before each Dress Rehearsal.
- **SP –** Service Provider

ASSOCIATED DOCUMENTS

The following lists show the associated technical documents which either should be read in conjunction with this document or which provide other relevant information for clients. Please refer to the latest version of the documents.

- Euronext Colocation Services:
- Euronext Colocation Services – Service Policy
- Euronext Colocation Services – Acceptable Usage Policy
- Euronext Colocation Services – Service and Technical Descriptions

- Euronext Connectivity Services:
- Euronext Client Managed Connectivity - Service and Technical Descriptions

- Other Euronext technical documentation:
- Euronext Optiq Market Data Gateway Production Environment *(updated version)*
- Euronext Optiq Market Data Gateway External User acceptance Environment *(updated version)*
- Euronext Markets – OPTIQ® OEG Connectivity Specifications *(updated version)*
- Euronext Markets - OEG Connectivity Telnet Tests *(updated version)*

For the latest version of documentation please visit <u>Data Centre Migration page</u> of the Connect customer web portal and <u>IT documentation page</u>.

Client who are interested in the technical documents for the Euronext Wireless Services should contact their Sales Representative or <u>clientsupport@euronext.com</u>.

CONTENTS

1. MIGRATION SCOPE

The below information describes the Data Centre migration scope.

1.1 MARKETS

- **Euronext Markets**

  All Euronext Cash & Derivatives Markets

- **Other Markets**

  Bourse De Luxembourg

1.2 EURONEXT ENVIRONMENTS

The four (4) existing Euronext environments are in scope of the migration. Please see the table below lists the four environments:

CURRENT ENVIRONMENT	CURRENT LOCATION	NEW TARGET ENVIRONMENT	NEW LOCATION
Disaster Recovery	St Denis – FR	Disaster Recovery	St Denis – FR
Production	Basildon – UK	Production	Aruba - Bergamo – IT
Current EUA	Basildon - UK (Access) St Denis - FR (Hosted)	Current EUA	Aruba – Bergamo - IT
Next EUA	Basildon – UK	Next EUA	Aruba – Bergamo – IT

1.3 EURONEXT APPLICATIONS AND SERVICES INCLUDED IN THE DATA CENTRE MIGRATION

EURONEXT APPLICATION	SERVICES
Optiq	Order Entry Gateways (OEG) Market Data Gateway (MDG) Drop Copy
Saturn Web	Approved Publication Arrangement (APA) Approved Reporting Mechanism (ARM) Short Code Long Code Management (SLC) Off Book On Exchange Trade Reporting (OBOE) OTC Cleared functionalities Commodity Positions Reporting

Trade Confirmation System (TCS) Web	Web for Off-Market and Dutch Funds services
End Of Day services	Orders and trades reconciliation files
Plug Web	Warrants and Certificates listing tool for Issuers
Euronext File Services (EFS)	Standing Data SBE templates Tick Sizes
SCORE	Centralisation application, collecting orders from intermediaries

2. GO-LIVE DATES

Key Dates

DATE	ENVIRONMENT	
7 April 2022	"New" Next EUA	**EUA Go-Live**
4 June 2022	"New" Production "New" Disaster Recovery	**Go-Live weekend**
6 June 2022	"New" Production "New" Disaster Recovery	**Go-Live**

Please refer to the section 5 Detailed Migration Schedule for the full timeline.

3. GLOBAL APPROACH

Overview

Euronext is building a New infrastructure for Euronext services and its four technical environments:

- Production
- Current EUA
- Next EUA
- Disaster Recovery (DR)

Once the Data Centre migration is complete, the Production, Current EUA and Next EUA environments will be hosted in the Aruba Data Centre in Bergamo, Italy. The Disaster Recovery environment will continue to be hosted in Saint Denis, France. For the complete migration scope please see section 1.

The Go-Live date of the Euronext Data Centre Migration from Basildon to Bergamo is scheduled for **6 June 2022**.

3.1 NEW DATA CENTRE, NEW INFRASTRUCTURE

Euronext is currently building a New Production Data Centre infrastructure, which also includes a colocation offering, in the Aruba DC IT3 located in Bergamo, Italy.

The infrastructure will include four (4) New environments, each with its own dedicated configuration.

All configurations currently used will change, meaning that Euronext will implement New IP addresses. The current range of IP addresses will not be used after the migration to Bergamo.

The changes include:

- New range of unicast target IP addresses;
- New IP ranges for multicast channels set-up;
- New internet target IP addresses and URLs.

The current servers in the Basildon Data Centre will not be moved to the Bergamo (Aruba IT3) Data Centre.

Euronext will make available testing phases with the New Data Centre in Bergamo, Italy, for its Production, EUA and Disaster Recovery environments. Clients will be able to run validation tests in parallel with their connection to the Basildon Data Centre.

3.2 MIGRATION STRATEGY

As this Data Centre migration is a purely technical implementation, with no functional changes, a "big-bang implementation" approach has been chosen as the Go-Live scenario.

All markets in scope, including surrounding systems, will switch from the current Production Data Centre in Basildon, United Kingdom, to the New infrastructure supported by the Bergamo Data Centre in Italy at a single point in time over the Go-Live weekend.

All the services (i.e. all Euronext markets and BDL) will go live simultaneously.

Euronext will implement the best practices for this migration: a robust testing phase, data validation, a detailed contingency plan and a strict roll-back procedure.

These mitigating actions are detailed in this document and are included in the migration schedule.

3.3 DATA INTEGRITY

Euronext will copy and migrate all functional data as is. This includes, but is not limited to:
- Referential data: member set-up and product/instrument referential
- Market Making/Liquidity Provider set-up;
- Orders and priority of orders.

The scope of the Data Centre migration from Basildon to Bergamo is as follows:
1. Euronext Optiq:
   a. Central Order Book (including all properties such as order priority)
   b. Logical Access ID and connection port
   c. DropCopy ID and connection port
   d. Multicast Channel IP Addresses
   e. Product referential (including last corporate events)
   f. Member referential:
      i. Trading Membership configuration
      ii. Clearing Membership configuration
2. Surrounding applications
3. Euronext colocation and connectivity services

3.3.1 Changes as a result of the migration

The listed services below will be impacted by the planned migration:
- Order Entry Gateway IP addresses

- DropCopy IP addresses
- Market Data Multicast IP/Ranges and BGP switches
- Web/Internet target IP addresses and URLs

Please refer to the Appendix regarding the details on the 4 points mentioned above.

- IP Filtering: clients are requested to inform Euronext of their New IP addresses if these change as result of the migration

IP Filtering will be communicated to the clients on a one-to-one basis, depending on Client's installation dates.

3.3.2 Membership - Technical Onboarding

As of 1 February 2022, Euronext has introduced a freeze on all technical onboarding activities in order to secure the migration of Euronext clients and their services. The admission process will continue as normal. However applicants should be aware that following the admission process Euronext will **not perform any technical onboarding activity after the cut-off date of 31 January 2022**, until the completion of the migration, planned for 6 June 2022.

3.3.3 Corporate Actions

Corporate Actions will not be impacted by the migration. Products will keep their usual life cycles over the migration. Euronext will replicate all ongoing Corporate Actions to the New infrastructure automatically.

3.4 CONTINGENCY PLAN

The contingency plan is a safety measure to be activated by Euronext in the unlikely event that not all testing criteria are fully validated and the migration Go-Live is at risk. This would only be considered as an emergency scenario.

The contingency plan is integrated in the global schedule, available in section 5 Detailed Migration schedule.

In the event that the contingency plan is activated, an Info-Flash will be sent to all Euronext Clients. Clients can subscribe to receive Info-Flashes and review past Info-Flashes via the Euronext Customer Connect Portal.

3.5 DISASTER RECOVERY

Euronext will also implement a New infrastructure for its Disaster Recovery environment, which is currently hosted in the St Denis Data Centre in France and will remain in the St Denis Data Centre after the migration of the Production Data Centre to Italy.

Clients connected to the Disaster Recovery environment should therefore also validate their Disaster Recovery set-up.

3.6 DRESS REHEARSAL

The Dress Rehearsals will take place before the Go-Live Weekend, allowing customers to test the target Production Data Centre infrastructure in advance. **All clients are required to participate in at least one Saturday Dress Rehearsal prior to the Go-Live.**

Usually performed during Saturdays to avoid impact on Production services, the Dress Rehearsals support functional testing on critical environments such as Production and Disaster Recovery. The Saturday testing simulates the exact same behaviour that can be expected on the Monday morning following the Go-Live.

Please note that clients will be authorised to take part in the Dress Rehearsals weekend only if they have validated their connectivity set-up during the technical testing phase.

At the end of the Dress Rehearsal, all data and applications will be rolled back to the situation as it was on the previous Friday evening.

Dress Rehearsal guidelines covering test scenarios will be made available at least one month before the first Dress Rehearsal. Clients participating in the Dress Rehearsals should manage the roll-back of their own applications ensuring a smooth start-up on the next trading day. To ensure that clients roll back their applications successfully from the Bergamo infrastructure to the Basildon infrastructure, Euronext will enable clients to connect to the Basildon infrastructure at the end of each Dress Rehearsal.

3.7 GO-LIVE WEEKEND

Active participation in the Go-Live Weekend, on the Saturday before the Go-Live on Monday, is highly recommended.

At the end of the Go-Live weekend, **the data will be rolled back** to the situation as it was on the previous Friday evening situation, as for the Dress Rehearsal weekend.

However, unlike for the Dress Rehearsals, all changes at application level will be kept to ensure the migration for the Monday morning. In summary, **applications will not be rolled back** at the end of the Go-Live weekend.

Go-Live Weekend guidelines will be available at least one month before the Go-Live date.

3.8 ROLL-BACK PROCEDURE

In the unlikely event of an unsatisfying result on the Saturday of the Go-Live Weekend (i.e. on Saturday 4 June 2022), a Roll-Back plan will be activated. The Roll-Back, as with the migration itself, concerns all markets. It is an ALL (roll-back on all markets) or NONE (no roll-back) roll-back procedure.

Clients must ensure the necessary resources available over the Go-Live weekend to support the Roll-Back scenario, if activated.

4. TESTING PHASES

The migration of the Data Centre will be conducted in one Go-Live Weekend – described as a "big bang" approach. Prior to this Go-Live date, a number of preparatory events, infrastructure tests and Dress Rehearsals will be held to ensure a smooth migration.

4.1 TESTING PHASES

Euronext will provide dedicated periods of time on the New infrastructure for client testing and support. Technical and Functional testing periods will be available for each New environment:

- "New" Production[1]
- "New" Current EUA
- "New" Next EUA
- "New" Disaster Recovery[2]

The testing periods will consist of two main phases: **technical** and **functional**. The below timeline is provided for all markets in scope.

TEST PHASE	ENVIRONMENT	START DATE
Technical Test [Mandatory]	"New" Production	**17 January 2022**
	"New" Next EUA	**03 March 2022**
	"New" Disaster Recovery	**04 April 2022**
	"New" Current EUA	**25 May 2022**
Administrative Test [Mandatory] & Functional Test [Optional]	"New" Next EUA	**24 March 2022**
	"New" Production	**First Dress Rehearsal - 23 April 2022** **Second Dress Rehearsal - 07 May 2022** **Third Dress Rehearsal - 21 May 2022**
	"New" Disaster Recovery	**First Dress Rehearsal - 23 April 2022** **Second Dress Rehearsal - 07 May 2022** **Third Dress Rehearsal - 21 May 2022 (telnet only)**

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[1] [2]Available during the dress rehearsal weekends only.

4.2 PREREQUISITES FOR TESTING

To participate in the technical (connectivity) and functional testing phase, clients should ensure they have met the following prerequisites:

- Clients should ensure that their source infrastructure has been validated before moving to the testing phase.

4.2.1 Prerequisites for clients using Euronext Colocation Services and Euronext Wireless services:

1. To validate the colocation set-up / the wireless set-up, clients must confirm to Euronext that their infrastructure is installed and that clients can connect to the Bergamo Data Centre.
2. Check that the connection from the Meet Me Room (MMR) to the client colocation cabinet / wireless cabinet is working.
3. Confirm to Euronext that all ports (FTEx) are up and running and a BGP (Border Gateway Protocol) ping has been successfully performed.

4.2.2 Prerequisite for clients using Euronext Connectivity Services:

- Clients that connect to the Euronext Production Data Centre should ensure that all ports are up and running and a BGP ping has been successfully performed.

4.2.3 Prerequisite for clients behind a Service Provider:

- Clients that use a Service Provider to connect to the Euronext Production Data Centre should consult with their Service Provider. The Service Provider should execute the prerequisites for clients using Euronext Connectivity Services as defined in section 4.2.1.

4.3 TECHNICAL TESTING PHASE – CONNECTIVITY TO THE NEW DATA CENTRE SERVICES

The technical testing phase is mandatory for **clients with direct connectivity** to Euronext services. Please see section 4.8 for a complete overview on the client types and mandatory technical test. Clients are strongly recommended to start their testing several weeks before the first Dress Rehearsal.

The technical testing phase is to validate connectivity to Euronext services, whether the client accesses from Euronext Production Data Centre via colocation, through customer managed connectivity (CMC) or any other access type. The technical testing phase is designed to ensure that clients' infrastructure can access the Euronext Markets and Services, therefore clients are requested to go through the technical testing prior to participation in the first Dress Rehearsal.

This phase allows to secure technical access to:
- Order Entry Gateway and DropCopy
- Market Data Gateway
- Internet Webhosting

4.3.1 Order Entry Gateway and DropCopy

Euronext will enable Telnet connectivity testing for the Euronext Production Data Centre, EUA and Disaster Recovery site. Clients should refer to the Euronext Markets – Optiq OEG Connectivity Telnet Tests document for more information.

Technical connectivity testing does not require any specific connectivity set-up (i.e., Logical Access information) as it covers generic Telnet testing.

Clients are requested to provide feedback on Telnet command at least one week before the first Dress Rehearsal (i.e. before 15 April 2022), via Test form available on DC migration project page on Connect, in order for Euronext to receive the network validation of the connectivity.

This test can be performed at the convenience of the client, as Telnet is available 24/7 during the technical phase with some exceptions, please refer to the section 4.7 for the client testing schedule.

Note: The connectivity testing phase will be available on all four (4) New environments. Please refer to section 5 for the dates on which each environment will be available.

4.3.2 Market Data Gateway

Market Data non-functional packets will be broadcast on both network Feeds (A & B) for all Real Time and Snapshot channels in order to support Clients capacity to test their non-functional connection.

- Production and EUA environments will be available during business hours, from 06:30 to 23:00 CET (Monday to Friday) with some exceptions, please refer to the section 4.7 for the client testing schedule and maintenance windows.
- Disaster Recovery environment will be available from Saturday 06:30 to Sunday 18:00 CET

Note: as the Disaster Recovery environment relies on the same Multicast configuration as the Production environment, Disaster Recovery non-functional packets must be broadcast in a dedicated timeslot to avoid any conflict with Production environment testing.

Clients are requested to fill in the Test form available on DC migration project page on Connect on MDG[3] connectivity readiness at least one week before the first (1) Dress Rehearsal (i.e. before 15 April 2022).

4.3.3 Internet – Web hosting

The documents containing the New target parameters such as the New URLs and New IP addresses are available in the Appendix.

4.4 ADMINISTRATIVE TESTING PHASE

The technical testing phase is a prerequisite for the administrative testing phase.

The administrative testing phase is to validate for all Euronext end-user clients the access to Euronext services, whether the client accesses from Euronext Production Data Centre via colocation, through Customer Managed Connectivity (CMC) or any other access type.

4.4.1 Order Entry Gateway & Drop Copy

The administrative testing phase for Order Entry is **mandatory** for all trading members.

This test is designed to confirm that clients are able to connect to the trading system. This test should be performed by all the trading members and should meet the following criteria:

- Client are requested to send a Logon message and receive a Logon Ack for every segment that they trade on. Client should use at least one unique Logical Access per segment, it is up to the client to extend this test to all their Logical Accesses.
- The above test should be performed for every FIRM ID assigned to the Trading Member.

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[3] Market Data Gateway

Client should be aware that they also need to perform a successful Logon for their Drop Copy Logical Access for each Drop Copy ID they connect to.

Euronext requests that clients participate actively in the administrative testing phase and run functional testing in the EUA, Production, and Disaster Recovery environments. Logon tests to the Production environment will only be possible during the Dress Rehearsals. However, clients can perform their logon tests outside of the Dress Rehearsals on the "New" Next EUA environment.

4.4.2 Web Applications

Testing of the administrative Web Application services is optional, but is highly recommended for any end-user clients on Saturn.

However, clients can use the administrative testing phase to validate that any of the existing Web Application services subscribed is working.

In order to validate the readiness of Web Application services, clients will have to fill a dedicated Webform, soon to be available on Connect.

Clients are required to perform this test during one of the three (3) Dress Rehearsal planned (i.e. see timeline) in order for Euronext to receive the Web Application Logon access validation. Administrative testing in the Production environment will only be possible during the Dress Rehearsals.

However, clients can perform their administrative tests outside of the Dress Rehearsals on the "New" Next EUA environment. The Euronext support team remains at the client's disposal.

4.5 FUNCTIONAL TESTING PHASE

The technical and administrative testing phase are prerequisites for the functional testing phase.

The functional testing phase is not mandatory for clients, since Euronext will not implement any functional change with the migration of the Production Data Centre to Bergamo. For the same reason, clients are not required to perform any conformance test if they are not changing their software or algo as part of this migration.

However, clients can use the functional testing phase to validate that their infrastructure is equipped for all services, such as front-to-back testing with clearing houses. Clients can validate their set-up by sending orders and receiving market data.

Euronext strongly encourages clients to participate actively in all testing phases and to run functional testing in the EUA, Production, and Disaster Recovery environments. Clients wishing to participate in the Dress Rehearsals are encouraged to validate their set-up in the "New" Next EUA environment prior to participation. Functional testing in the Production environment will only be possible during the Dress Rehearsals.

However, clients can perform their functional tests outside of the Dress Rehearsals on the "New" Next EUA environment, which is functionally equivalent to Production. Functional testing can be carried out by the client autonomously. The Euronext support team remains at the client's disposal.

4.6 CCP REPORTING (FRONT-TO-BACK)

The functional testing phase will include the front-to-back testing capacity with real-time CCP trade reporting. This will be available only on the "New" Next EUA environment in Bergamo prior to Production Go-Live.

Please note that front-to-back testing will not be available during the Dress Rehearsal weekends.

The data configuration for all clearing members will be transferred from Basildon to the New Data Centre in Bergamo as described in the data integrity section of this document.

4.7 ENVIRONMENT AVAILABILITY

In the final weeks before the migration, clients can perform functional tests on the 'New' Next EUA environment. Please see the schedule below for more details.

ENVIRONMENT	AVAILABILITY	WEEKLY MAINTENANCE WINDOW
'New' Next EUA	Monday, Tuesday, Thursday, Friday during business hours from 06:30-22:00	Weekly maintenance window on Wednesday

4.8 SUMMARY OF THE TESTING PHASES

New Production

TYPE OF CLIENTS	TECHNICAL TEST		TEST PHASE ON NEW PRODUCTION			
	Telnet test	Technical MDG	Administrative - Logon for OEG	Functional – OEG	Functional - MDG	Administrative - Web Applications
Colocation direct	Mandatory	Mandatory	Mandatory (1 logical access per segment per FIRM ID)	Optional	Optional	Optional
Colocation behind Service Provider	Optional	Optional				
Connectivity direct (CMC / London PoP)	Mandatory	Mandatory				
Connectivity behind Service Provider	Optional	Optional				

New Next EUA

TYPE OF CLIENTS	TECHNICAL TEST		TEST PHASE ON NEW NEXT EUA			
	Telnet test	Technical MDG[4]	Administrative - Logon for OEG[5] (unicast services)	Functional – OEG	Functional - MDG	Administrative - Web Applications
Colocation direct	Mandatory	Mandatory	Mandatory (1 logical access per segment per FIRM ID)	Optional	Mandatory (1 channel by client)	Optional
Colocation behind Service Provider	Optional	Optional			Optional	
Connectivity direct (CMC / London PoP)	Mandatory	Mandatory			Mandatory (1 channel by client)	
Connectivity behind Service Provider	Optional	Optional			Optional	

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[4] MDG: Market Data Gateway

[5] OEG: Order Entry Gateway

New Current EUA

TYPE OF CLIENTS	TECHNICAL TEST		TEST PHASE ON NEW CURRENT EUA			
	Telnet test	Technical MDG	Administrative - Logon for OEG	Functional – OEG	Functional - MDG	Administrative - Web Applications
Colocation direct	Optional	Optional	Optional	Optional	Optional	Optional
Colocation behind Service Provider						
Connectivity direct (CMC / London PoP)						
Connectivity behind Service Provider						

New Disaster Recovery

TYPE OF CLIENTS	TECHNICAL TEST		TEST PHASE ON NEW DISASTER RECOVERY			
	Telnet test	Technical MDG	Administrative - Logon for OEG	Functional – OEG	Functional - MDG	Administrative – Web Applications
Colocation direct	*Not applicable*	*Not applicable*	*Not applicable*	*Not applicable*	*Not applicable*	*Not applicable*
Colocation behind Service Provider						
Connectivity direct (CMC / London PoP)	Mandatory depending on set up	Mandatory (covered by Test Phase on New Production - same infrastructure)	Optional	Optional	Optional	Optional
Connectivity behind Service Provider	Optional	Optional				

5. DETAILED MIGRATION SCHEDULE

Overview

On Saturday 4 June 2022, clients are invited to participate in the Go-Live preparation session in the Production environment. The Euronext systems will start and clients can perform tests in the same way as during any other Dress Rehearsal. During the Saturday, an official communication will be sent with the Go-Live decision for the following Monday.

On Monday 6 June 2022[6], all markets (Euronext and Bourse De Luxembourg) will be hosted from the Production Data Centre in Bergamo, Italy. The markets will open as normal in the same way as on any other trading day and clients can perform their usual trading activities as required.

Euronext will apply a Change reduction period from 24 March 2022 to 6 June 2022.

Schedule

| DATE	EVENT	DESCRIPTION
17 January 2022	"New" Production	**Technically available:** validation of Optiq Production access available for clients during the working hours for Production technical testing phase (until 30 April 2022)
01 February 2022	Freeze on Technical Onboarding activities for new memberships	Following the admission process Euronext will not perform any new technical set-up (new and/or additional IDs) after the cut-off date of 31 January 2022 until Go Live
28 February – 04 March 2022	Euronext internal testing of the "New" Production environment	From 28 February till 4 March Euronext will perform internal testing on the "New Production" environment. Client testing is available, but clients can experience side effects of the test performed by Euronext.
03 March 2022	"New" Next EUA	**Technically available:** validation of Optiq EUA access available for clients during working hours until Go Live
21 - 25 March 2022	Euronext internal testing of the "New" Production environment	From 21 March till 25 March Euronext will perform internal testing on the "New Production" environment. Client testing is available, but clients can experience side effects of the test performed by Euronext.
24 March 2022	"New" Next EUA	**Functionally available:** clients are able to perform Optiq functional tests.

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[6] Pending regulatory approval

		The environment will exist in parallel with Next EUA hosted in the DC in Basildon until Next EUA Go-Live (6 April 2022)
04 April 2022	"New" Disaster Recovery	**Technically available:** validation of DR access available for clients already connected to DR. As a reminder DR is not accessible from the Colocation.
07 April 2022	"New" Next EUA	**EUA Go-Live** Only Next EUA hosted in the DC in Bergamo remains available for client's tests
23 April 2022	"New" Production "New" Disaster Recovery	First Dress Rehearsal
07 May 2022	"New" Production "New" Disaster Recovery	Second Dress Rehearsal
21 May 2022	"New" Production "New" Disaster Recovery	Third Dress Rehearsal
25 May 2022	"New" Current EUA	**Technically available:** validation of Optiq EUA access available for clients
04 June 2022	"New" Production	**Go-Live weekend**
06 June 2022	"New" Production "New" Disaster Recovery	**Go-Live**

Contingency Plan Schedule

DATE	EVENT	DESCRIPTION
20 April 2022	"New" Next EUA	Contingency EUA Go Live
25 June 2022	"New" Production "New" Disaster Recovery	Contingency Dress Rehearsal
02 July 2022	"New" Production "New" Disaster Recovery	Contingency Go-Live weekend
04 July 2022	"New" Production "New" Disaster Recovery "New" Current EUA	Contingency Go-Live

Environment readiness planning
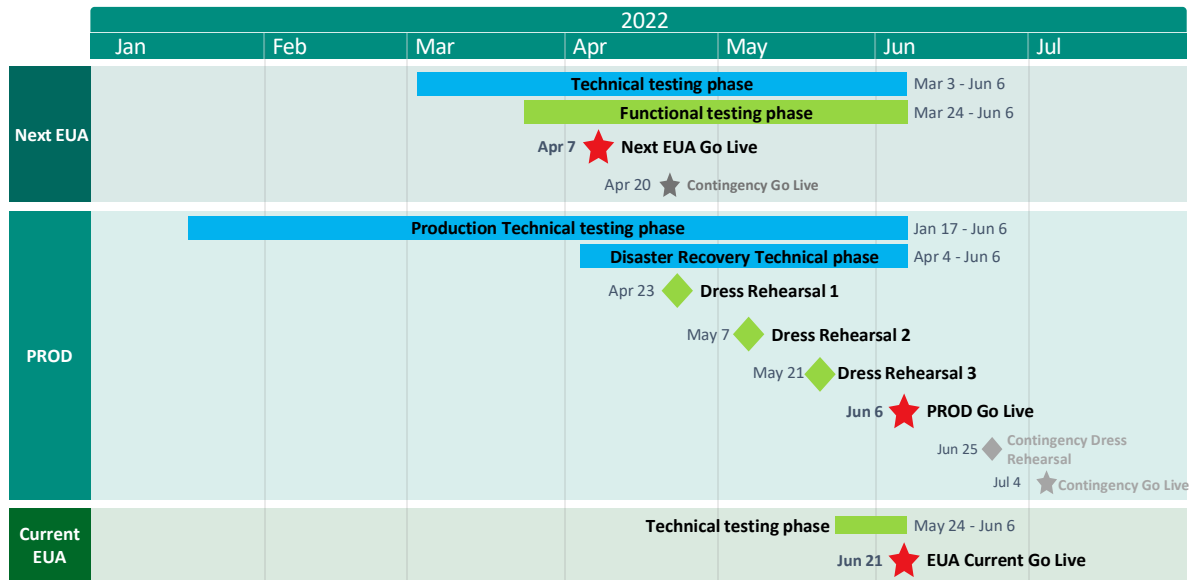
Client's readiness planning

Please note that the red arrow is marking the requested date (being at least one week before the first Dress Rehearsal, i.e. before 15 April 2022) for the completion of the client's connectivity test for OEG and MDG.

6. COMMUNICATION PLAN

Throughout the Data Centre migration project Euronext will provide communication and updates through dedicated channels, in order to ensure that all clients have access to clear and useful information for the duration of the project.

The following communications will be sent to convey key details and clients should ensure that they subscribe to the relevant distribution lists.

- **Info-Flashes:** these operational communications will announce key milestones of the project, and details that all clients should be aware of, such as: documentation publication, the opening of each platform, and confirmed Production implementation dates. Clients can subscribe to Info-Flashes through My subscriptions page on the Euronext Connect Customer portal.

- **Operational Notices:** these operational communications will announce technical updates on the project. Clients can subscribe to Info-Flashes through My subscriptions page on the Euronext Connect Customer portal.

- **Technical Documentation:** New and updated documentation will be provided throughout the course of the migration to provide clients with the technical information they need. This documentation will be available in the IT Documentation section of the Euronext Connect Customer portal.

7. CONTACTS

Find below the contact details of Euronext's teams:

TEAM	CONTACT DETAILS
Operational Client Services Desk Members' first point of contact for the Data Centre migration. Technical & functional assistance with the development and testing on Optiq. Assistance with the use of the Production, EUA and Disaster Recovery environment, timeline and customer readiness checklist.	**Tel:** Belgium +32 2 620 0585 France +33 1 8514 8585 Ireland +353 1 617 4289 Netherlands +31 20 721 9585 Norway +31 20 721 9585 Portugal +351 2 1060 8585 UK +44 20 7660 8585 **Email:** clientsupport@euronext.com
Euronext Membership Support on the onboarding process for becoming a Data Centre Client, including contracts (Order Form).	**Tel:** +31 207 214 264 **Email:** EuronextMembership@euronext.com
Customer Access Services Support to market participants' access and connections to Euronext markets, including Logical Accesses on Optiq.	**Tel:** +33 1 85 14 85 89 **Email:** cas@euronext.com

8. WHAT'S NEW?

The following lists only the most recent modification made to this version. For the Document History table, see the Appendix.

REVISION NO./ VERSION NO.	DATE	CHANGE DESCRIPTION
1.0	06/10/2021	**Version 1**
1.1	11/10/2021	**Correction on page 7:** "New" Next EUA available on <u>7 April</u>, as stated in the rest of the document.
1.2	03/11/2021	**Correction on page 3:** "New Disaster Recovery (DR)" definition is now referring to the Data Centre in Saint-Denis, France.
1.3	15/12/2021	<u>**Main section**</u> **Part 4 "Testing Phases":** **Minor changes for "Technical Testing phase" including a few precision on Telnet test.** **Additional "Administrative Testing phase" description added.** All information are available in: - 4.4.1 Order Entry Gateway and Drop Copy - 4.4.2 Web Applications - 4.7 Summary of the testing phases **Appendix section:** New information available on IPs for: - Order Entry on Segment & Partition and drop copy IPs Information: Production Environment added - Order Entry on Segment & Partition and drop copy IPs Information: Next EUA Environment added
1.4	12/01/2022	<u>**Main section**</u> **Additional information on page 22:** **Minor precision added on the 1st of February 2022 milestone "**Freeze on Technical Onboarding activities ***for new memberships***". **Additional planning information on page 14 and 24:** The former **"Extra"** dress rehearsal on the 21/05/2022 is becoming a **"Third"** dress rehearsal.

REVISION NO./ VERSION NO.	DATE	CHANGE DESCRIPTION
1.5	10/02/2022	**Section 4.7** Section added to clarify schedule for client testing. **Section 5** Schedule update to reflect 2 weeks of Euronext internal testing.
2.0	04/03/2022	**Section 4.7:** - Maintenance Window updated **Appendix section:** - IP addresses and DNS added for Web Hosted Applications - Disaster Recovery IP addresses
2.1	11/04/2022	**Appendix section:** **-**Segment Financial Derivatives removed.
2.2	23/05/2022	**Appendix section:** Current EUA IP Addresses DNS & IP Addresses Web Hosted Application Disaster Recovery environment

REVISION NO./ VERSION NO.	DATE	CHANGE DESCRIPTION
2.3	25/10/2022	**Introduction and Section 7 Contacts:** **dcmigration@euronext.com** replaced with **clientsupport@euronext.com**

9. APPENDIX

ORDER ENTRY ON SEGMENT & PARTITION AND DROP COPY IPS INFORMATION

OPTIQ SEGMENT NAME	PARTITION ID	BERGAMO PROD IP
Equities	10	212.107.95.2
	11	212.107.95.5
	12	212.107.95.8
	13	212.107.95.11
Funds (ETFs)	20	212.107.95.14
Fixed Income (Bonds)	30	212.107.95.20
Warrants and Certificates	40	212.107.95.23
	41	212.107.95.47
Bourse De Luxembourg	50	212.107.95.17
Block	140	212.107.95.60
Commodities	80	212.107.95.29
Equity Derivatives	120	212.107.95.38
	121	212.107.95.41
	122	212.107.95.35
Index Derivatives	110	212.107.95.32
Drop Copy Cash	990	212.107.95.66
	991	212.107.95.67
	992	212.107.95.68
	993	212.107.95.69
Drop Copy Derivatives	980	212.107.95.72
	981	212.107.95.73
	982	212.107.95.74
	983	212.107.95.75

Disaster Recovery environment

OPTIQ SEGMENT NAME	PARTITION ID	"NEW" DISASTER RECOVERY (ST DENIS)
Equities	10	212.197.254.1
	11	212.197.254.3
	12	212.197.254.4
	13	212.197.254.5
Funds (ETFs)	20	212.197.254.7
Fixed Income (Bonds)	30	212.197.254.6
Warrants and Certificates	40	212.197.254.9
	41	212.197.254.10
Bourse De Luxembourg	50	212.197.254.13
Block	140	212.197.254.16
Commodities	80	212.197.254.25
Equity Derivatives	120	212.197.254.20
	121	212.197.254.21
	122	212.197.254.22
Index Derivatives	110	212.197.254.24
Drop Copy Cash	990	212.197.254.12
	991	212.197.254.26
	992	212.197.254.27
	993	212.197.254.28
Drop Copy Derivatives	980	212.197.254.31
	981	212.197.254.32
	982	212.197.254.33
	983	212.197.254.34

Next EUA environment

OPTIQ SEGMENT NAME	PARTITION ID	IP OF INDIVIDUAL PARTITION	
		NEXT EUA (BASILDON)	"NEW" NEXT EUA (BERGAMO)
Equities	10	212.197.222.2	212.107.92.2
	11	212.197.222.5	212.107.92.5
	12	212.197.222.8	212.107.92.8
	13	212.197.222.11	212.107.92.11
Funds (ETFs)	20	212.197.222.14	212.107.92.39
Fixed Income (Bonds)	30	212.197.222.20	212.107.92.37
Warrants and Certificates	40	212.197.222.18	212.107.92.14
	41	212.197.222.84	212.107.92.17
Bourse De Luxembourg	50	212.197.222.28	212.107.92.40
Block	140	212.197.222.39	212.107.92.43
Commodities	80	212.197.222.66	212.107.92.46
Equity Derivatives	120	212.197.222.30	212.107.92.23
	121	212.197.222.34	212.107.92.26
	122	212.197.222.24	212.107.92.29
Index Derivatives	110	212.197.222.22	212.107.92.35
Drop Copy CASH	990	212.197.222.51	212.107.92.47
	991	212.197.222.52	212.107.92.48
	992	212.197.222.53	212.107.92.49
	993	212.197.222.54	212.107.92.50
Drop Copy Derivatives	980	212.197.222.33	212.107.92.53
	981	212.197.222.69	212.107.92.54
	982	212.197.222.70	212.107.92.55
	983	212.197.222.71	212.107.92.56

Current EUA environment

OPTIQ SEGMENT NAME	PARTITION ID	IP OF INDIVIDUAL PARTITION	
		CURRENT EUA (BASILDON)	"NEW" CURRENT EUA (BERGAMO)
Equities	10	212.197.223.23	212.107.92.135
	11	212.197.223.24	212.107.92.136
	12	212.197.223.25	212.107.92.137
	13	212.197.223.26	212.107.92.138
Funds (ETFs)	20	212.197.223.27	212.107.92.140
Fixed Income (Bonds)	30	212.197.223.29	212.107.92.139
Warrants and Certificates	40	212.197.223.28	212.107.92.142
	41	212.197.223.5	212.107.92.143
Bourse De Luxembourg	50	212.197.223.35	212.107.92.145
Block	140	212.197.223.1	212.107.92.148
Commodities	80	212.197.223.34	212.107.92.129
Equity Derivatives	120	212.197.223.32	212.107.92.134
	121	212.197.223.33	212.107.92.133
	122	212.197.223.31	212.107.92.132
Index Derivatives	110	212.197.223.30	212.107.92.130
Drop Copy CASH	990	212.197.223.61	212.107.92.157
	991	212.197.223.62	212.107.92.158
	992	212.197.223.63	212.107.92.159
	993	212.197.223.64	212.107.92.160
Drop Copy Derivatives	980	212.197.223.51	212.107.92.151
	981	212.197.223.52	212.107.92.152
	982	212.197.223.53	212.107.92.153
	983	212.197.223.54	212.107.92.154

MARKET DATA CONFIGURATION INFORMATION

Production & Disaster Recovery environments

	"NEW" PRODUCTION (BERGAMO)	
	FEED A	FEED B
Rendez-vous Point (RP) for Colocation	212.107.67.240	212.107.67.241
Rendez-vous Point (RP) for CMC	212.107.67.248	212.107.67.249
Primary IP Address	212.107.93.0/24	212.107.94.0/24
Secondary IP Address	212.107.93.0/24	212.107.94.0/24
Disaster Recovery IP Address	212.107.240.0/24	212.107.241.0/24

Channel ID 1(n)xxx Real-Time	224.0.208.0/24	224.0.209.0/24
Channel ID 2(n)xxx Snapshot	224.0.210.0/24	224.0.211.0/24

Next EUA

	NEXT EUA (BASILDON)		"NEW" NEXT EUA (BERGAMO)	
	FEED A	**FEED B**	**FEED A**	**FEED B**
Rendez-vous Point (RP) for Colocation	156.48.99.5		212.107.67.242	212.107.67.243
Rendez-vous Point (RP) for CMC	N/A		212.107.67.248/32	212.107.67.249/32
Primary IP Address	212.197.220.0/25	212.197.221.0/25	212.107.90.0/25	212.107.90.128/25
Secondary IP Address	212.197.220.0/25	212.197.221.0/25	212.107.90.0/25	212.107.90.128/25
Channel ID 1(n)xxx Real-Time	224.0.52.xxx	224.0.53.xxx	224.0.212.0/24	224.0.213.0/24
Channel ID 2(n)xxx Snapshot				

Current EUA

	CURRENT EUA (BASILDON)		"NEW" CURRENT EUA (BERGAMO)	
	FEED A	**FEED B**	**FEED A**	**FEED B**
Rendez-vous Point (RP) for Colocation	156.48.99.5		212.107.67.242	212.107.67.243
Rendez-vous Point (RP) for CMC	N/A		212.107.67.248/32	212.107.67.249/32
Primary IP Address	212.197.220.128/25	212.197.221.128/25	212.107.91.0/25	212.107.91.128/25
Secondary IP Address	224.0.52.xxx	224.0.53.xxx	224.0.212.0/24	224.0.213.0/24

WEBHOSTING CONFIGURATION INFORMATION

Production environment

	"New" Production (Bergamo)	
	IP address	**DNS**
EFS Internet Access	212.107.68.129	https://efsweb-prod.euronext.com
EFS on Euronext network	212.107.67.1	https://efsoptiq-prod.euronext.com
EOD Web	212.107.68.130	https://eod-prod.euronext.com
Plug-Web	212.107.68.131	https://plug-prod.euronext.com
Saturn API	212.107.68.132	https://saturnapi-prod.euronext.com
Saturn Web using RSA/TOTP	212.107.68.133	https://saturn-prod.euronext.com
TCS Web	212.107.68.134	https://tcs-prod.euronext.com

Next EUA environment

	Next EUA (Basildon)		"New" Next EUA (Bergamo)	
	IP address	**DNS**	**IP address**	**DNS**
EFS Internet Access	212.197.237.100	https://efs-eua.euronext.com/	212.107.69.129	https://efsweb-eua.euronext.com
EFS on Euronext network	212.197.223.241	https://efs-eua.sfti.euronext.com/	212.107.67.17	https://efsoptiq-eua.euronext.com
EOD Web	212.197.237.115	https://eod-t.euronext.com	212.107.69.130	https://eod-eua.euronext.com
Plug-Web	212.197.237.114	https://plug-h.euronext.com	212.107.69.131	https://plug-eua.euronext.com
Saturn API	212.197.237.98	https://saturn-api-h.euronext.com	212.107.69.132	https://saturnapi-eua.euronext.com
Saturn Web using RSA/TOTP	212.197.237.99	https://saturn-h.euronext.com/	212.107.69.133	https://saturn-eua.euronext.com
TCS Web	212.197.237.113	https://tcs-h.euronext.com	212.107.69.134	https://tcs-eua.euronext.com

Disaster Recovery environment

	"New" Disaster Recovery (ST Denis)	
	IP address	**DNS**
EFS Internet Access	212.197.239.104	https://efsweb-dr.euronext.com
EFS on Euronext network	212.107.67.97	https://efsoptiq-dr.euronext.com
EOD Web	212.197.239.69	https://eod-dr.euronext.com
Plug-Web	212.197.239.70	https://plug-dr.euronext.com
Saturn API	212.197.239.67	https://saturnapi-dr.euronext.com
Saturn Web using RSA/TOTP	212.197.239.103	https://saturn-dr.euronext.com
TCS Web	212.197.239.68	https://tcs-dr.euronext.com