

EURONEXT FILE SERVICES

Scope and audience: This technical note intends to provide general technical information about Euronext's File Services (EFS), a file service mechanism that will be used during the implementation of OPTIQ. The primary audience of this document is Developers, Exchange Connectivity Managers, Trading Support Teams and anybody involved in the setup and the configuration of Optiq MDG solution in End User Acceptance (EUA) and Production environments.

FILE SERVICES OVERVIEW

Euronext Files Services is a Server providing critical files for Euronext's customers that have signed either an EMDDA (Euronext Market Data Distribution Agreement), a SPA (Service Provider Agreement) or a TPA (Trading Platform Agreement) to get access to the core trading chain of Euronext. This document provides the global overview of the service.

CURRENT SOLUTION VS FUTURE SOLUTION

Currently customers use the FTP protocol to download files from a centralized ftp server. On EUA platform, the access is granted through a generic account shared by all members. In production environment the service is only available through Internet.

Euronext File Services uses the HTTPS protocol. Euronext will provide an individual account to each and every customer. De facto the level of security will be immediately strengthened. The solution will be harmonized among environments and markets.

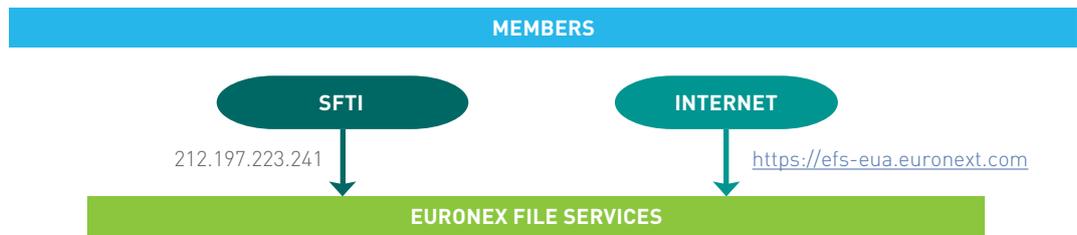
Euronext plans to leverage on the implementation of the European File Services. The service will be used in the near future to host various files, generic or customized per member.

USERS & ACCESS

Euronext File Services will be accessible via SFTI & Internet via the following links:

| | SFTI | INTERNET | URL |
|-------------|-----------------|-----------------|----------------------|
| | IP | IP | |
| EUA | 212.197.223.241 | 212.197.237.100 | EFS-EUA.EURONEXT.COM |
| PROD | 212.197.195.1 | 212.197.237.101 | EFS.EURONEXT.COM |
| DR | 212.197.225.1 | 212.197.239.101 | EFSDR.EURONEXT.COM |

In order to connect to the servers, customers will have the opportunity to use an Internet Browser or to automatize the download of the files through a script using the Rest API.



The information hosted on the servers and the structure of directories to access it will be strictly identical. Access to each solution will depend on company's contract and authorizations. If a client has access to a Market, all his entities will be granted access to the respective Market files.

PROCUREMENT

Companies having signed an agreement with Euronext are entitled to get access to European File Services. An account will be created per entity. For members, an account will be available per member code.

In order to get an account on EUA or Production platforms, customers (MCA) will be invited to fill in an online form. Customer Access Services (CAS) Team will provide the customer with a user id and a password.

During the first step of the OPTIQ implementation, European File Services will host MDG configuration and data files in EUA and Production environments.

OPTIQ MDG FILES

OVERVIEW

A client should connect to the file server:

- Every morning to download the OPTIQ MDG XML files containing static and daily data
- During the trading day to download the Full Trade Information files containing all the trades of the day

IMPACT OF OPTIQ INTRODUCTION

The following files will be decommissioned once Optiq has been deployed. These files are currently hosted on <ftp.eua-data.euronext.com> in EUA environment and on <ftp.data.euronext.com> in Production environment.

| | FILES TO BE DECOMMISSIONED | NEW FILES |
|----------------------------|---|---|
| Cash Markets | CSH_EU_ENXT_REF_TICKSIZE_BOD XDP_CSH_EU_ENXT_REF_BOD*_pr | OptiqMDG_v-EUA_CashTickSizeReferentialFile_ALL OptiqMDG_v-EUA_CashStandingDataFile_Equities OptiqMDG_v-EUA_CashStandingDataFile_FixedIncome OptiqMDG_v-EUA_CashStandingDataFile_Funds OptiqMDG_v-EUA_CashStandingDataFile_WarrantsAndCertificates |
| Derivatives Markets | nyseliffe_stdata_atomx_flex nyseliffe_stdata_eqt_* | OptiqMDG_v-EUA_DerivativesStandingDataFile_Commodities OptiqMDG_v-EUA_DerivativesStandingDataFile_Futures OptiqMDG_v-EUA_DerivativesStandingDataFile_Options |

Table 1 - Files to be decommissioned

In the table below you can see the folder structure that will be used for Optiq:

| FTP ARCHITECTURE | DESCRIPTION |
|------------------|--|
| OptiqMDG | Defines that all the following files are Optiq files for Market Data |
| ENVIRONMENT | Defines if this is in "Production", "v-EUA" or "p-EUA" |
| CURRENT | For the current day file. |
| OPTIQSEGMENT | Defines the segment on Optiq |
| CURRENT | For the current day file. |

Table 2 - Optiq folder structure

In the Environment folder you will be able to find the following files

- TimetableFile
- CashTickSizeReferentialFile
- SBETemplate

In folder OptiqSegment:

- OpenInterestFile
- PrevDayCapAndVolTradeFile
- FullTradeInformationFile
- CashStandingDataFile
- DerivativesStandingDataFile
- RepoSettlementPriceFile

Standing Data files are provided per Optiq segment.

Files will be available for 5 rolling days.

XDP VS MDG OPTIQ

In the table below you'll find a summary of what currently is provided for XDP and what will be for Optiq.

| | XDP FILE SERVICE | OPTIQ MARKET DATA FILE SERVICE |
|-------------------|-----------------------|------------------------------------|
| Protocol | FTP | HTTPS |
| Redundancy | Yes | Yes |
| High Availability | No | Yes |
| Certification | No | Yes |
| Internet | Yes | Yes |
| SFTI | EUA (Yes) & Prod (No) | Yes |
| File format | Fixml | XML |
| Account | Generic | Individual |
| Target | All users | Only clients with proper agreement |

Table 3 - XDP vs Optiq summary



MORE INFORMATION

Technical information relative to the rest API will be delivered in the European File Service User Guide. Optiq File Specification v1.4.0 will be updated with detailed information on file structure and schedule of files availability. These updates will be announced in due course.

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Customer focus

The migration onto the new Optiq platform has been designed with customers in mind. Technical relationship managers from the Euronext Client Readiness team will be available to meet with clients to review the technical specifications, facilitate impact assessment, hold development workshops, and provide regular updates on the migration timeline and status.

CONTACT DETAILS

For additional information, please reach out to your Optiq Programme client readiness team

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