



TECHNICAL DOCUMENT

POST TRADE DATA TECHNICAL SPECIFICATION
(FUTURES AND OPTIONS MARKET)

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FUTURES AND OPTIONS MARKETS POST TRADE DATA

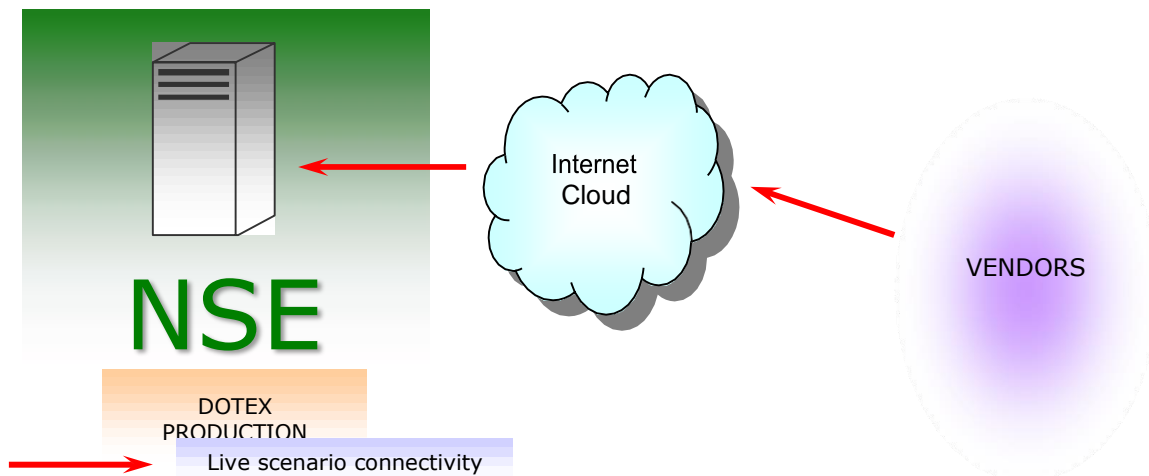
1. INTRODUCTION

The NSE data & Analytics Ltd. (100% subsidiary of NSE) is the sole distributor of the various types of data such as real-time trade data, end of day data, corporate announcements, historical trade and order data etc. reported at NSE. In order to expand current product offerings and to facilitate the market participants, NSE data & Analytics Ltd has introduced a new product 'Post Trade Data'. The product provides information such as daily settlement prices, market wide position limits, SPAN risk parameter files etc. on an end of day basis. The clients connect to the NSE Data FS server that contains the EOD data files, through Internet and FTP to the server with a valid user name and password. The user name and password authentication provides the secured login to the server. There are number of files are populated on the server throughout the day. A detailed description of the product is mentioned below in the specifications.

2. CONNECTION DETAILS

All vendors need to connect internet and FTP to the NSE Data FS server with an IP address <59.160.38.110>. The FTP connection requires a User Name and Password for logging in and that is provided by NSE data & Analytics Ltd after the vendors subscribes for it.

Structural Diagram



3. PRODUCT DETAILS

Post Trade Data is a data service which contains all the post trade data files of the capital markets, futures & options markets, Index Segment and Corporate Bonds settlement data which gives wide information about the markets.

These products eases the downloading of multiple files, by using it all the files specified in the configuration file will get downloaded at one go.

It also maintains repository directories which will store all the downloaded data in date-wise directories.

The product also features a data archival facility, which will help you in managing archival directories at your end. (Refer Configuration section for details)

This list of the generated files on the NSE Data FS along with their scheduled time of availability is listed below.

4. LIST OF FILES

The list of the files provided as Post Trade Data for Futures & Options market is given below –

File Type	Segment	File Nomenclature	No of Files	Time (Approx)	Day
Client level position limits	FAO	oi_cli_limit_DD-MON-YYYY.lst	1	5:12:48 PM	Same day
Clients Position % greater than equal to 3% of Stock MWPL	FAO	mwpl_cli_ddmmyyyy.xls	1	11:26:00 PM	Next day
Combined/NSE open Interest	FAO	nseoi_ddmmyyyy.zip	1	4:34:30 PM	Same day
Daily settlement price	FAO	FOsett_prce_ddmmyyyy.csv	1	3:48:45 PM	Last day every 2 months
Daily volatility – Futures	FAO	FOVOLT_ddmmyyyy.csv	1	3:50:00 PM	Same day
Market wide Position Limits	FAO	mpl_monyyyy.csv	1	11:15:00 PM	Last day of the month
Participant wise Open Interest	FAO	fao_participant_oi_ddmmyyyy.csv	1	4:22:00 PM	Next day
Participant wise Trading Volumes	FAO	fao_participant_vol_ddmmyyyy.csv	1	4:22:00 PM	Next day
Security in Ban period	FAO	fo_secban_ddmmyyyy.csv	1	10:10:00 PM	Same day
TM/FII / MF Futures Position Limits	FAO	tmfpl_monyyyy.csv	1	11:15:00 PM	Last day of the month
TM/FII / MF Overall Position Limits	FAO	tmopl_monyyyy.csv	1	11:15:00 PM	Last day of the month
Top 10 Clearing Members Volume	FAO	fao_top10cm_to_ddmmyyyy.csvmonyyyy.csv	1	2:06:00 PM	Next day
Span Risk parameter file	FAO	nscl.yyyymmdd.*.zip	11	SPAN Parameter files - 6 times a day(11:00,12:30,14:00 and 15:30),EOD SPAN Parameter file 15:50 and BOD SPAN Parameter file at 17:40.	BOD File (Previous day) , Remaining files (Same day)

DotEx POST TRADE DATA SYSTEM

Implied volatility data	FAO	Imp_volt_ddmmyyyy.csv	1	5:30 PM	Same day
Put call ratio data (Based on contracts traded)	FAO	fo_ddmmyyyy.csv.gz	1	5:08:00 AM	Same day

5. DIRECTORY STRUCTURE

The contents of the distributed directory are mentioned below.

Directory Name: autoFTP

Directory Contents:

FILE NAME	DESCRIPTION
autoFTP_APP.CFG	IP and download directory details of the FTP server
fetchFiles.sh	FTP script
manage_archival_dirs.sh	Script for handling daily archival directories
.wgetrc	Stores Client's user ID and Password provided by NSE Data & Analytics
FILES_LIST.CFG	Nomenclature details of files to be downloaded

6. INSTALLATION & CONFIGURATION DETAILS

6.1.1 Installation Details

1. Keep the distributed **autoFTP** directory in the desired path of your file system.
2. Install **wget** tool on your linux system.
3. Open the hidden file “**.wgetrc**” (Using vi **.wgetrc**)
4. Edit the **user** and **password** field with provided username and password
File should look like this after editing,
user=provided_user_name
password=provided_password
5. Now move the file to the root folder of your linux file system.
(Using cp **.wgetrc ~**)

6.1.2 CONFIGURATION DETAILS

There are two configuration files present in the distributed directory

1. **autoFTP_APP.CFG**
It should contain connection details to FTP server and other details briefly explained later.
2. **FILES_LIST.CFG**
It should contain the list of keywords (file nomenclature) of files which specifies the type of file that will be downloaded, brief details are described later

Edit both the provided configuration files as per the below details

6.1.3 CONFIGURATION DETAILS FOR **autoFTP_APP.CFG**

This configuration file stores the technical details required by the FTP script.

If any of the required information is not set, then FTP script will stop its execution and throw appropriate error.

Below is the description of configuration fields:

FIELDS	DESCRIPTION
FTP_SERVER_IP	Remote FTP Server IP
LOCAL_FOLDER	Path for local download directory
ARCH_DIR_LIMIT	Limit value for archival directories

Format

FIELD_1=VALUE_1
FIELD_2=VALUE_2

.

Note: Each field detail should be written on a new line.

Sample of autoFTP.CFG

FTP_SERVER_IP=172.20.6.98
LOCAL_FOLDER=Downloads
ARCH_DIR_LIMIT=5

6.1.4 CONFIGURATION DETAILS FOR FILES_LIST.CFG

This configuration file stores the nomenclature of files to be downloaded by the FTP script.

If file is empty no file will be downloaded.

Note: Each nomenclature detail should be written on a new line.

Nomenclature of post trade data files to be specified into the config file is as follows

File Type	Config File Name
Client level position limits	oi_cli_limit
Clients Position % greater than equal to 3% of Stock MWPL	mwpl_cli
Combined/NSE open Interest	nseoi
Daily settlement price	FOsett_prce
Daily volatility – Futures	FOVOLT
Market wide Position Limits	mpl
Participant wise Open Interest	fao_participant_oi
Participant wise Trading Volumes	fao_participant_vol

Security in Ban period	fo_secban
TM/FII / MF Futures Position Limits	tmfpl
TM/FII / MF Overall Position Limits	tmopl
Top 10 Clearing Members Volume	fao_top10cm_to
Put call ratio data (Based on contracts traded)	fo
Span Risk parameter file	nscl.
Implied volatility data	imp_volt(file will be generated by NSEIT)

Format

Nomenclature_file_type1
 Nomenclature_file_type2
 Nomenclature_file_type3

.
 .

Sample of FILES_LIST.CFG

fao_participant_vol
 mpl
 fopl
 ffpl
 short_selling
 nscl
 nseoi

6.1.5 CONFIGURATION DETAILS FOR DATA ARCHIVAL FEATURE

For using this feature you will have to set the "ARCH_DIR_LIMIT" value in the autoFTP_APP.CFG file to the desired number of days for which you want to retain the date-wise directories. Any directory older than that value set will get deleted from the file system.

For eg:

If you have set the ARCH_DIR_LIMIT value in autoFTP_APP.CFG to 10, Viz. ARCH_DIR_LIMIT=10, then till 10 days under your local download directory (mentioned in the "LOCAL_FOLDER" of the autoFTP_APP.CFG) date-wise folder will get created each day which will contain all the files downloaded for that day.

No deletion of directories will happen until 10 days

On the 11th day, when you will run the fetchFiles.sh script for the first time, a new directory will get created which will store the 11th day files and the oldest directory will get deleted.

Note: For switching off this feature assign a very high value to the "ARCH_DIR_LIMIT" field (Value should be greater than the total number of archived directories present in the LOCAL_FOLDER)

7. DOWNLOADING FILES

For downloading files use the following steps

Pre-requisites:

Make sure details are filled in the configuration files.

- A. autoFTP_APP.CFG
- B. FILES_LIST.CFG

Using the FTP script to download files

- A. Navigate to autoFTP directory
- B. Execute “fetchFiles.sh” script by typing the script name and pressing enter.
- C. Wait for complete execution of the script.
- D. If “**Downloaded all the files successfully!!**” message occurs, then all the files are downloaded successfully, check your local download directory.
- E. If “**File is missing error**” occurs, then try again later. This error will usually occur if any requested file is unavailable in the remote repository directory.

Using the FTP script to download archived data

- A. Navigate to autoFTP directory
- B. Execute “**fetchFiles.sh 1**” script by typing the script name and pressing enter.
- C. Wait for complete execution of the script.
- D. If “**Downloaded all the files successfully!!**” message occurs, then all the files are downloaded successfully, check your local download directory.
- E. If “**File file_name not yet available,**” occurs, then try again later. This error will usually occur if any requested file is unavailable in the remote repository directory.

Note: All the downloaded archived files would be compressed and packed using “tgz” i.e. (tar + gz).

To extract the files use the following command on your Linux terminal.

tar -xzf filename.tgz

8. DATA DETAILS

8.1 FAO SEGMENT FILES

8.1.1 Participant wise Trading Volumes

Nomenclature: fao_participant_vol_ddmmyyyy.csv

Data Structure of the file

Field Names
Client Type
Future Index Long
Future Index Short
Future Stock Long
Future Stock Short
Option Index Call Long
Option Index Put Long
Option Index Call Short
Option Index Put Short
Option Stock Call Long
Option Stock Put Long
Option Stock Call Short
Option Stock Put Short
Total Long Contracts
Total Short Contracts

8.1.2 Participant wise Open Interest

Nomenclature: fao_participant_oi_ddmmyyyy.csv

Data Structure of the file

Field Names
Client Type
Future Index Long
Future Index Short
Future Stock Long
Future Stock Short
Option Index Call Long
Option Index Put Long
Option Index Call Short
Option Index Put Short
Option Stock Call Long
Option Stock Put Long
Option Stock Call Short
Option Stock Put Short
Total Long Contracts
Total Short Contracts

8.1.3 Client level position limits

Nomenclature: oi_cli_limit_dd-MON-yyyy.lst

Data Structure of the file

Field Names
SYMBOL
CLIENT_LIMIT

8.1.4 Combined/NSE Open Interest

Nomenclature: nsei_ddmmyyyy.zip

Data structure for: nsei_ddmmyyyy.csv

Field Names
Date
ISIN
Scrip Name
NSE Symbol

MWPL
NSE Open Interest

Data structure for: nsei_ddmmyyyy.xml

Field Names
Date
ISIN
Scrip Name
NSE Symbol
MWPL
NSE Open Interest
Limit_for_Next_Day

8.1.5 Daily volatility – Futures

Nomenclature: FOVOLT_ddmmyyyy.csv

Data Structure of the file

Field Names
Date
Symbol
Underlying Close Price (A)
Underlying Previous Day Close Price (B)
Underlying Log Returns (C) = LN(A/B)
Previous Day Underlying Volatility (D)
Current Day Underlying Daily Volatility (E) = Sqrt (0.94*D*D + 0.06* C*C)
Underlying Annualised Volatility (F) = E*sqrt(365)
Futures Close Price (G)
Futures Previous Day Close Price (H)
Futures Log Returns (I) = LN(G/H)
Previous Day Futures Volatility (J)
Current Day Futures Daily Volatility (K) = Sqrt (0.94*J*J + 0.06* I*I)
Futures Annualised Volatility (L) = K*sqrt(365)
Applicable Daily Volatility (M) = Max (E or K)
Applicable Annualised Volatility (N) = Max (F or L)

8.1.6 Daily settlement price

Nomenclature: FOSett_prce_ddmmyyyy.csv

Data Structure of the file

Field Names
DATE
INSTRUMENT
UNDERLYING
EXPIRY DATE
MTM SETTLEMENT PRICE

8.1.7 Span Risk parameter file

Nomenclature: nsccl.yyyymmdd.i1.zip
 nsccl.yyyymmdd.i1_1.zip
 nsccl.yyyymmdd.i2.zip
 nsccl.yyyymmdd.i2_1.zip
 nsccl.yyyymmdd.i3.zip
 nsccl.yyyymmdd.i3_1.zip
 nsccl.yyyymmdd.i4.zip
 nsccl.yyyymmdd.i4_1.zip
 nsccl.yyyymmdd.i5.zip
 nsccl.yyyymmdd.i5_1.zip
 nsccl.yyyymmdd.s.zip
 nsccl.yyyymmdd.s_1.zip

For data structure of SPAN files, Refer to the given link:

<http://www.cme-ch.com/span/spanl300.htm>

8.1.8 Put call ratio data (Based on contracts traded)

Nomenclature: fo_ddmmyyyy.csv.gz

Data Structure of the file

Field Names
Product
No of Contracts
Traded Value (Rs. Crs.)
Put Call Ratio(Only for Options Contract)

8.1.9 Top 10 Clearing Members Volume

Nomenclature: fao_top10cm_to_ddmmyyyy.csv

Data Structure of the file

Field Names
Serial Number
Indx Futures Vol(Contracts)
Index Futures Trnvr(Crores)
Stock Futures Vol(Contracts)
Stock Futures Trnvr(Crores)
Index Options Vol(Contracts)
Index Options Trnvr(Crores)
Indx Opt Trnvr(prm)(Crores)
Stock Options Vol(Contracts)
Stock Options Trnvr(Crores)
Stock Opt Trnvr(prm)(Crores)

8.1.11 TM/FII / MF Overall Position Limits

Nomenclature: tmopl_monyyyy.csv

Data Structure of the file

Field Names
SYMBOL
EFF_POS_LMT (MonthYYYY)

8.1.12 TM/FII / MF Futures Position Limits

Nomenclature: tmfpl_monyyyy.csv

Data Structure of the file

Field Names
SYMBOL
EFF_FUT_LMT (MonthYYYY)

8.1.13 Market wide Position Limits

Nomenclature: mpl_monyyyy.csv

Data Structure of the file

Field Names
UNDERLYING_NAME
MWPL (MonthYYYY)

8.1.14 Security in Ban period

Nomenclature: fo_secban_ddmmyyyy.csv

Data Structure of the file

Field Names
SR NO
SYMBOL

8.1.15 Clients Position % greater than equal to 3% of Stock MWPL

Nomenclature: mwpl_cli_ddmmyyyy.xls

Data Structure of the file

Field Names
Sr No.
Underlying Stock
Client 1
Client 2
Client 3
Client 4
Client 5
Client 6
Client 7
Client 8

8.1.16 Implied Volatility Data

Nomenclature: imp_volt_ddmmyyyy.csv

Field Names
Contract Name
Strike Price
Option Type
IV

9. CONTACT INFO

Following are the contact details for business assistance:

Name	Email Address	Contact Numbers
NSE data & Analytics Ltd	marketdata@nse.co.in	91-22-26598385

For technical assistance email us on iisl_it@nse.co.in.