

# **TECHNICAL DOCUMENT**

2 MINUTES SNAPSHOT DATA

CAPITAL MARKET

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**DOTEX INTERNATIONAL LIMITED  
EXCHANGE PLAZA,  
PLOT NO. C/1, G BLOCK,  
BANDRA-KURLA COMPLEX,  
BANDRA (E), MUMBAI 400 051.  
INDIA.**

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## CAPITAL MARKET 2 MINUTES SNAPSHOT DATA (STANDARD PRODUCT)

### 1. INTRODUCTION

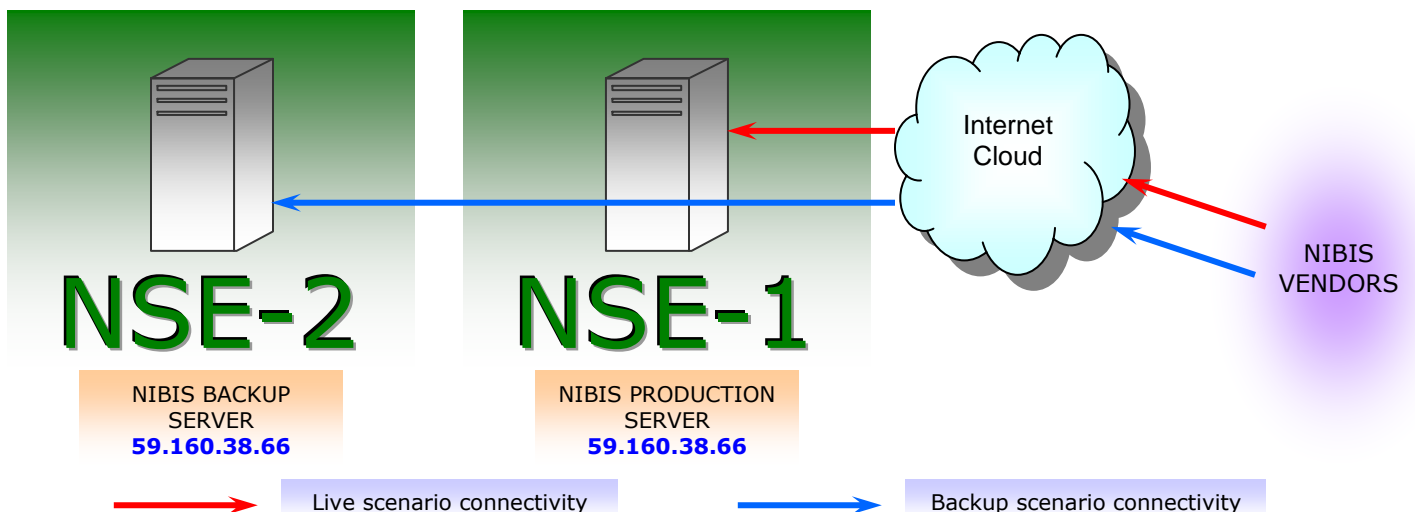
DotEx International Ltd. disseminates NSEIL's real time broadcast data to various information agencies. It provides the 3 different types of data to vendors, i.e. Real Time Data, Snapshot Data and End of Day Data. The real time data is a packet broadcast available in TCP/IP packet format, where as the delayed data and End of day data is available in the form of files.

The Nibis server that caters the NIBIS vendors is available through internet. All Nibis vendors connect the server through internet and use FTP protocol to download the files. The files on this server are generated on regular 2 minutes interval basis. The vendors are provided with a User ID and password that is enabled for the agreement period.

### 2. CONNECTION DETAILS

The vendors connect the NIBIS server through Internet using FTP protocol. The production and backup server IP address is 59.160.38.66. In NSE premises these two servers are in cluster. If primary server goes down automatically the vendor connections will be redirected to secondary server without doing any changes by NIBIS vendors

#### Structural Diagram



### **3. DATA DETAILS**

The Capital Market (CM) data files are generated in binary format at a regular interval of 2 minutes. These are \*.mkt, and \*. Ind. The other data files generate on server are \*.sec, \*.dat and \*.txt. These entire files have categorised into different categories according to their data contents i.e. Market Information Files, Security Information Files, Message Information Files and Bhavcopy Information Files.

#### **MARKET INFORMATION**

The Market information data files are generated in /CM02/DATA/"<Month>DDYYYY" folder on the server. i.e. \*.mkt and \*. Ind.

The \*.mkt (Where "\*" stands for a numeric number) files contains market statistics and order information of the securities that are being traded in last 2 minutes along with their open, high, low and close price. The file contains a single record for every security that is traded during that file interval. These files are generated during normal trading period i.e. 09:00 hrs. To 15:30 hrs and during Close Session i.e. 15:50 hrs to 16:00 hrs. These files are generated in incremental count number on a trading day starting from 1.mkt.

The \*.ind (Where "\*" stands for a numeric number) files contains NSEIL Indices information along with its open, high, low and close index values. Each file contains data of all 6 indices of Exchange. These files are generated at regular interval of 2 minute. These files are generated during normal trading period i.e. 09:00 hrs. to 15:30 hrs and during Close Session i.e. 15:50 hrs to 16:00 hrs thereafter up to 18:00 hrs.

#### **CALL AUCTION MARKET INFORMATION**

Two new market types Call Auction and Reserved (for future use) are introduced in the capital market trading system.

##### **Call Auction Market -**

Multiple sessions of call auction market can be held in a trading day.

The call auction session shall consist of

1. Order collection period (Order entry, modification and cancellation is allowed)
2. Order matching period.

The computation of Indicative Opening Price (IOP) and matching logic shall be same as pre-open session for Cash Market segment. In call auction market, after matching period is over all the outstanding orders shall be cancelled.

The Call Auction Market information data files are generated in /CM02/DATA/"<Month>DDYYYY" folder on the server. i.e. \*.ca1

The \*.ca1 (Where "\*" stands for a numeric number) files contains market statistics and order information of the securities that are being traded in the call auction market in the last 2 minutes along with their open, high, low and close price. The file contains a single record for every security that is traded during that file interval. These files are generated during normal trading period i.e. 09:00 hrs. to 15:30 hrs. These files are generated in incremental count number on a trading day starting from 1.ca1.

### **Call auction in pre-open session (IPO & Re-listed securities)**

A new market for IPO & Re-listed securities is introduced by NSE. Reserved market type will be used to generate the data files for this market.

The business functionality for this market type is same as the Call Auction Market (i.e. Order Collection and Order Matching period).

Following is the only difference for this market.

1. The Buy back and market maker concept is also not there in this market so the 'BBMM Flag' for buy and sell side will be sent as '0' (zero).

This Market information data files are generated in /CM02/DATA/"<Month>DDYYYY" folder on the server. i.e. \*.ca2

The \*.ca2(Where "\*" stands for a numeric number) files contains market statistics and order information of the securities that are being traded in the SML market in the last 2 minutes along with their open, high, low and close price. The file contains a single record for every security that is traded during that file interval. These files are generated during normal trading period. These files are generated in incremental count number on a trading day starting from 1.ca2.

### **SECURITY INFORMATION**

The security update files are generated in /CM02/security/"<Month>DDYYYY" folder on the server. These files are generated on receipt of security update broadcast from trading system. The files are generated with the security token number name and having sec extension. E.g. 7576.sec.

The securities.dat file is the master file that contains the updated information of all securities traded on the Exchange. The vendors need to download this file and decode it to resolve the "token number" of required security. The Token number of each security is unique. The data structure of securities.dat file is similar to as of \*.sec files.

**MESSAGE INFORMATION**

The \*.dat files are generated in /CM02/messages/<Month>DDYYYY folder. These are generated as and when the message broadcast is received from the trading system. These files are generated incremental count number in a day starting from 1.dat.

**BHAVCOPY INFORMATION**

The bhavcopy information file is generated at around 17:00 hrs in /CM02/bhavcopy folder on each trading day. The file name is CMBHAVCOPY\_DDMMYYYY.TXT. This file contains the End of the Day values of the securities that are traded on that trading day.

**4. DATA STRUCTURE DETAILS**

**MARKET INFORMATION**

**FILE PATH - /CM02/DATA/"<MONTH>DDYYYY"**  
**FILE NAME - \*.MKT**

**HEADER**

Transcode	Short 2 Bytes
Timestamp	Long 4 Bytes
Message Length	Short 2 Bytes

**Total 8 Bytes**

**DATA**

Security Token	Short 2 Bytes
Last Traded Price	Long 4 Bytes
Best Buy Quantity	Long 4 Bytes
Best Buy Price	Long 4 Bytes
Best Sell Quantity	Long 4 Bytes
Best Sell Price	Long 4 Bytes
Total Traded Quantity	Long 4 Bytes
Average Traded Price	Long 4 Bytes
Open Price	Long 4 Bytes
High Price	Long 4 Bytes
Low Price	Long 4 Bytes
Close Price	Long 4 Bytes

**Filler Long 4 Bytes (Blank)**

**Total 50 Bytes**

**INDICES INFORMATION**

**FILE PATH - /CM02/DATA/"<MONTH>DDYYYY"**  
**FILE NAME - \*.IND**

**HEADER**

Transcode	Short 2 Bytes
Timestamp	Long 4 Bytes
Message Length	Short 2 Bytes

**Total 8 Bytes**

**DATA**

Index Token	Short 2 Bytes
Current Index Value	Long 4 Bytes
High Index Value	Long 4 Bytes
Low Index Value	Long 4 Bytes

Percentage Change in Index	Long 4 Bytes
----------------------------	--------------

**Filler Long 4 Bytes (Blank)**

**Total 22 Bytes**

**NEW SECURITY INFORMATION**

**FILE PATH - /CM02/SECURITY/"<MONTH>DDYYYY"**  
**FILE NAME - \*.SEC & SECURITIES.DAT**

**HEADER**

Transcode	Short 2 Bytes
Timestamp	Long 4 Bytes
Message Length	Short 2 Bytes

**Total 8 Bytes**

**DATA**

Token Number	Short 2 Bytes
Symbol	Char 10 Bytes
Series	Char 2 Bytes
Issued Capital	Double 8 Bytes
Warning Percent	Short 2 Bytes
Freeze Percent	Short 2 Bytes
Credit Rating	Char 12 Bytes
Issue Rate	Short 2 Bytes
Issue Start Date	Long 4 Bytes
Issue Pdate	Long 4 Bytes
Issue Maturity Date	Long 4 Bytes
Board Lot Quantity	Long 4 Bytes

Tick Size	Long	4 Bytes
Name of Company	Char	25 Bytes
Record Date	Long	4 Bytes
Expiry Date	Long	4 Bytes
No Delivery Start Date	Long	4 Bytes
No Delivery End Date	Long	4 Bytes
Book Closure Start Date	Long	4 Bytes
Book Closure End Date	Long	4 Bytes

**Total 109 Bytes**

### **MESSAGE INFORMATION**

**FILE PATH - /CM02/MESSAGES/"<MONTH>DDYYYY"**  
**FILE NAME - \*.DAT**

#### **HEADER**

Transcode	Short	2 Bytes
Timestamp	Long	4 Bytes
Message Length	Short	2 Bytes

**Total 8 Bytes**

#### **DATA**

Message	Char	239 Bytes
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**Total 239 Bytes**

### **BHAVCOPY INFORMATION**

This data file does not contain the Header field.

**FILE PATH - /CM02/BHAVCOPY/"<MONTH>DDYYYY"**  
**FILE NAME - CMBHAVCOPY\_DDMMYYYY.TXT**

#### **DATA**

Symbol	Char	10
Series	Char	2
Trade High Price	Char	10
Trade Low Price	Char	10
Opening Price	Char	10
Closing Price	Char	10
Previous Close Price	Char	10
Total Traded Quantity	Char	12
Total Traded Value	Char	25
Carriage Return/ Line Feed	Char	2

**Total 101 Bytes****CALL AUCTION MARKET INFORMATION****FILE PATH - /CM02/DATA/"<MONTH>DDYYYY"****FILE NAME - \*.ca1 for Call Auction Market**

\*.ca2 for Reserved Market (IPO &amp; Re-listed securities)

**HEADER**

Transcode	Short 2 Bytes
Timestamp	Long 4 Bytes
Message Length	Short 2 Bytes

**Total 8 Bytes****DATA**

The format of the data sent is as follows:

<b>FIELD TYPE</b>	<b>DATATYPE</b>	<b>REMARKS</b>
Security Token	Short 2 Bytes	Security Token
Last Traded Price	Long 4 Bytes	During order collection as well as during matching, it contains LTP of the security
Best Buy Quantity	Long 4 Bytes	Best buy side limit order, price and quantity information.
Best Buy Price	Long 4 Bytes	
Buy BBMM Flag	Char 1 Byte	
		For BBMM flag refer point no.
Best Sell Quantity	Long 4 Bytes	Best sell side limit order, price and quantity information.
Best Sell Price	Long 4 Bytes	
Sell BBMM Flag	Char 1 Byte	
		For BBMM flag refer point no. 6.3
Total Traded Quantity	Long 4 Bytes	This field contains the total quantity of a security traded on the current day
Indicative Traded Quantity	Long 4 Bytes	During order collection period this field will contain Indicative Equilibrium Quantity
Average Traded Price	Long 4 Bytes	During order collection period it will always be zero. Once matching starts it will contain the Average Trade Price.
First Open Price	Long 4 Bytes	During first call auction

		order collection period this field will be zero. Once matching starts it will contain the First Trade Price. Once updated for all subsequent call auctions it will not change. This field may remain zero till the first trade happens
Open Price	Long 4 Bytes	This field contains the indicative opening price (IOP) of a security for order collection period session and Final Open Price of a security in matching period.
High Price	Long 4 Bytes	During order collection period it will always be zero. Once matching starts it will be updated.
Low Price	Long 4 Bytes	During order collection period it will always be zero. Once matching starts it will be updated.
Close Price	Long 4 Bytes	This field contains the closing price of a security.
Filler	Long 4 Bytes	Blank

**Total 60 Bytes**

**5. FILE TRANSCODE LIST**

<b>DETAILS</b>	<b>TRANSCODE NUMBER</b>
MARKET OPEN INFORMATION	1
MARKET CLOSE INFORMATION	2
MARKET PRE-OPEN INFORMATION	3
MARKET STATISTICS INFORMATION	5
BROADCAST MESSAGE INFORMATION	6
NEW SECURITY INFORMATION	7
MARKET INDICES INFORMATION	8
CALL AUCTION MARKET INFORMATION	9

**6. INDEX TOKEN NUMBERS LIST**

The Indices generated during the trading cycle are identified by Index names. The feed shall not bear these names. Instead, a unique Index token shall identify each index. The vendors need to decode the index files by providing following combinations of the Index Token number and Index Name.

<b>INDEX NAME</b>	<b>INDEX TOKEN NUMBER</b>
S&P CNX NIFTY	0
CNX IT	1
CNX NIFTY JUNIOR	2
S&P CNX DEFTY	3
BANK NIFTY	4
CNX MIDCAP 200	5
S&P CNX 500	6
CNX 100	7
NIFTY MIDCAP 50	8
CNX REALITY	9
CNX INFRASTRUCTURE	10
INDIA VIX	11
CNX Energy	12
CNX FMCG	13
CNX MNC	14
CNX Pharma	15
CNX PSE	16
CNX PSU Bank	17
CNX Service	18
CNX Smallcap	19
CNX 200	20
CNX Auto	21
CNX Media	22
CNX Metal	23

CNX Dividend Oppt	24
CNX Commodities	25
CNX Consumption	26
CNX Finance	27
Nifty Dividend	28

## **7. DATA FIELD DETAILS**

### **SECURITY TOKEN NUMBER**

The Security Token numbers uniquely identify each security listed on the National Stock Exchange of India Ltd. The token number, Symbol and Series identify a single and unique security. The vendor will be provided with a binary file i.e. securities.dat giving the combinations of all securities traded on the Exchange. Any further additions, modifications and deletions will be updated in securities.dat file as part of the feed in /CM02/Security folder.

### **TIME STAMP**

The time stamp is the number of seconds elapsed from midnight Jan 1, 1970.

## **8. CONTACT INFO**

Following are the contact details for business assistance:

<b>Name</b>	<b>Email Address</b>	<b>Contact Numbers</b>
Mr. Ved Malla	vmalla@nse.co.in	91-22-26598385
Ms. Prachee Chavan	pracheec@nse.co.in	91-22-26598385
Mr. Pankaj Agarwal	pagarwal@nse.co.in	91-22-26598385

You can also email us on **dotex@nse.co.in**

For technical assistance email us on **infofeed\_support@nse.co.in**.

## 9. **NOTE**

### 9.1 All prices are in Paisa

All price fields are multiplied by 100 and this implies that the prices received by the vendors have to be divided by 100.

### 9.2 Call Auction Market and Reserved Market:

Two new market types have been added in Capital Market segment. The first market has been added to support Call Auctions and the other market type has been added for future use. It has been termed as reserved market.

### Market Maker & Buy Back Flag (MMBB Flag):-

For the probable values of BBMM flag refer the table given below

1. **Sell BBMM Flag** : Buy Back or Market Maker order at that price point.
2. **Buy BBMM Flag** : Buy Back or Market Maker order at that price point.

<b>Buy_Back_Order Exists</b>	<b>Market_Maker_Order Exists</b>	<b>Sell BBMM Flag/ Buy BBMM Flag</b>
No	No	'0'
Yes	No	'1'
No	Yes	'2'
Yes	Yes	'3'

E.g. If Buy Back and Market Maker orders exist at particular price point then the above fields will contain '3'.