S&P CAPITAL IQ
McGRAW HILL FINANCIAL

S&P Capital IQ Real-Time Solutions

FeedOS™ Feed Description

NSE INDIA

Reference n°: 20150630 – 18787 – 25847 – 26419

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Reference 20150630 – 18787 – 25847 – 26419
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France
52 Rue de la Victoire
75009 Paris
France
Tel: +33 (0) 1 73 02 32 11

United States
55 Water Street, 44th floor
New York, NY 10041
United States of America
Tel: +1-(212)-438-4346

130 East Randolph
One Prudential Plaza, Suite 2900
Chicago, IL 60601
United States of America
Tel: +1-(312)-233-7129

United Kingdom
20 Canada Square
Canary Wharf
London E14 5LH
United Kingdom
Tel: +44 (0) 203 107 1676

Singapore
12 Marina Boulevard
#23-01 Marina Bay
Financial Centre Tower 3
Singapore 018982
Tel: +65 6530 6546

www.spcapitaliq.com

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FEEDOS™ NSE INDIA FEED DESCRIPTION

As part of the S&P Capital IQ Real-Time Solutions FeedOS™ documentation, this feed description provides you with details about the types of data broadcast on the NSE INDIA market data stream, their possible values and current FeedOS technical implementation.

The topics this feed description covers include:

1. Referential Data

The following sections describe the characteristics of the referential data on the NSE INDIA market data stream, in terms of:

1.1. Available Markets and Branches

This section details the list of Markets and Branches available on the NSE INDIA market data stream.

1.1.1. Markets

The NSE INDIA market data stream broadcasts informations about the following markets:

Table 1 List of markets available on the NSE INDIA market data stream

FeedOS Market ID	Market
XNSE	National Stock Exchange of India

The following example shows the complete list of markets available on the NSE INDIA market data stream and their IDs, returned by the `dumps` command:

```
MARKETS
market # 119    CC=IN/INDIA/MUMBAI,DESCR=NATIONAL STOCK EXCHANGE OF INDIA,
WEB=www.nseindia.com
    MIC = XNSE
    TimeZone = Asia/Calcutta
    Country = IN
    NbMaxInstruments = 2000000
```

1.1.2. Branches

The example below shows the complete list of branches available on the NSE INDIA market data stream for each market, returned by the `dumps` command. Each branch displays the following details: `FOSMarketID`, `SecurityType`, `CFICode` and `Quantity` (of instruments):

```
BRANCHES
    { XNSE CD       EMXXXX } qty: 2
    { XNSE CS       ERXXXX } qty: 26
    { XNSE CS       ESXXXX } qty: 11705
    { XNSE CS       EXXXXX } qty: 2243
    { XNSE ETF      EUXXXX } qty: 3963
    { XNSE GO       DBXTXX } qty: 146
    { XNSE GO       DBXXXX } qty: 647
    { XNSE GO       DCXXXX } qty: 53
    { XNSE INDEX    MRIXXX } qty: 35
    { XNSE WAR      RWXXXX } qty: 7
```

1.2. Types of Instruments

The following sections describe the instruments available on the NSE INDIA market data stream, according to their type:

- 1.2.1. Equities
- 1.2.2. Indices
- 1.2.3. Bonds
- 1.2.4. Warrants.

1.2.1. Equities

The sample below illustrates the details of an equity:

```
instr # 119/1017544 = 250578632
    PriceCurrency               string{INR}
    Symbol                      string{TATAMOTORS}
    Description                 string{TATA MOTORS LIMITED}
    SecurityType                string{CS}
    FOSMarketId                 XNSE
    IssueDate                   Timestamp{1984-10-23 18:30:00}
    CFICode                     string{ESXXXX}
    RoundLot                    float64{1}
    SecurityStatus              uint8{1}
    InternalCreationDate        Timestamp{2015-05-27 16:18:29:161}
    InternalModificationDate    Timestamp{2015-05-27 16:18:29:161}
    InternalSourceId            uint16{147}
    InternalEntitlementId       NSE
    LocalCodeStr                string{TATAMOTORS_EQ}
    ISIN                        string{INE155A01022}
    PriceIncrement_static       float64{0.05}
    OperatingMIC                string{XNSE}
    OutstandingShares           int32{-2147483648}
    FaceValue                   float64{2}
```

1.2.2. Indices

The sample below illustrates the details of an index:

```
instr # 119/1020139 = 250581227
    PriceCurrency               string{INR}
    Symbol                      string{CNX_NIFTY}
    Description                 string{CNX NIFTY}
    SecurityType                string{INDEX}
    FOSMarketId                 XNSE
    CFICode                     string{TIXXXX}
    InternalCreationDate        Timestamp{2015-05-27 16:17:45:470}
    InternalModificationDate    Timestamp{2015-05-27 16:17:45:470}
    InternalSourceId            uint16{218}
    InternalEntitlementId       NSE
    LocalCodeStr                string{CNX_NIFTY}
    OperatingMIC                string{XNSE}
```

1.2.3. Bonds

The sample below illustrates the details of a bond:

```
instr # 119/1007222 = 250568310
    PriceCurrency               string{INR}
    Symbol                      string{HUDCO}
    Description                 string{8.20 NCD05MAR27 FV 1000}
    SecurityType                string{GO}
    FOSMarketId                 XNSE
    IssueDate                   Timestamp{2002-03-20 18:30:00}
    CFICode                     string{DBXXXX}
    RoundLot                    float64{1}
    SecurityStatus              uint8{1}
    InternalCreationDate        Timestamp{2015-05-04 13:42:12:401}
    InternalModificationDate    Timestamp{2015-05-04 13:42:12:401}
    InternalSourceId            uint16{147}
    InternalEntitlementId       NSE
    LocalCodeStr                string{HUDCO_N2}
    ISIN                        string{INE031A07840}
    PriceIncrement_static       float64{0.01}
    OperatingMIC                string{XNSE}
    OutstandingShares           int32{25182247}
    FaceValue                   float64{1000}
```

1.2.4. Warrants

The sample below illustrates the details of a warrant:

```
instr # 119/1012901 = 250573989
    PriceCurrency               string{INR}
    Symbol                      string{IBULHSGFIN}
    Description                 string{INDIABULLS HSG FIN LTD}
    SecurityType                string{WAR}
    FOSMarketId                 XNSE
    IssueDate                   Timestamp{2003-07-23 18:30:00}
    CFICode                     string{RWXXXX}
    RoundLot                    float64{20000}
    SecurityStatus              uint8{3}
    InternalCreationDate        Timestamp{2015-04-10 15:01:36:324}
    InternalModificationDate    Timestamp{2015-04-10 15:01:36:324}
    InternalSourceId            uint16{147}
    InternalEntitlementId       int32{1189}
    LocalCodeStr                string{IBULHSGFIN_K1}
    ISIN                        string{INE148I13017}
    PriceIncrement_static       float64{0.05}
    OperatingMIC                string{XNSE}
    OutstandingShares           int32{27500000}
    FaceValue                   float64{5}
```

1.3. Specific Referential Tags

The following sections describe additional, specific referential tags available on the NSE INDIA market data stream:

1.3.1. SecurityStatus

The values of the referential tag **SecurityStatus** conveyed on the NSE INDIA market data stream are disseminated via FeedOS data stream in *Referential* to indicate the status of an instrument.

FeedOS implementation of the tag `SecurityStatus` is described in the table below:

Table 2 SecurityStatus – technical implementation in FeedOS

Component	Value	Description
Tag Name	`SecurityStatus`	FeedOS tag name.
Numeric ID	`965`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`UInt8`	UInt8 data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the status of an instrument.
Possible Values	`1`	Active (Default value)
	`2`	Inactive
	`3`	Suspended

1.3.2. OperatingMIC

The values of the referential tag **OperatingMIC** conveyed on the NSE INDIA market data stream are disseminated via FeedOS data stream in *Referential* to specify the parent MIC.

FeedOS implementation of the tag `OperatingMIC` is described in the table below:

Table 3 OperatingMIC – technical implementation in FeedOS

Component	Value	Description
Tag Name	`OperatingMIC`	FeedOS tag name.
Numeric ID	`9533`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`String`	String data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, specifying the parent MIC.
Possible Values	`XNSE`	National Stock Exchange of India

2. Quotation Data

The sections below describe the characteristics of the quotation data on the NSE INDIA market data stream, in terms of:

2.1. Quotation Values

The example below shows the possible values of an instrument on the NSE INDIA market data stream:

```
InstrumentStatusL1
-- 119/1008974
        BID: 34.25      393
        ASK: 34.45      116
        LastPrice                       float64{34.25}
        DailyHighPrice                  float64{35.8}
        DailyLowPrice                   float64{34}
        DailyTotalVolumeTraded          float64{36901}
        DailyTotalAssetTraded           float64{1291535}
        InternalDailyOpenTimestamp      Timestamp{2015-04-27 03:45:00:442}
        InternalDailyCloseTimestamp     Timestamp{2015-04-24 10:00:00:184}
        InternalDailyHighTimestamp      Timestamp{2015-04-27 03:46:53:739}
        InternalDailyLowTimestamp       Timestamp{2015-04-27 03:45:15:055}
        InternalPriceActivityTimestamp  Timestamp{2015-04-27 09:35:05:472}
        PriceActivityMarketTimestamp    Timestamp{2015-04-27 09:35:05}
        LowLimitPrice                   float64{27.75}
        HighLimitPrice                  float64{41.55}
        TradingStatus                   17=ReadyToTrade
        DailyOpeningPrice               float64{35}
        PreviousDailyTotalVolumeTraded  float64{31082}
        PreviousDailyTotalAssetTraded   float64{1091154.85}
        PreviousDailyClosingPrice       float64{34.65}
        PreviousBusinessDay             Timestamp{2015-04-24}
        CurrentBusinessDay              Timestamp{2015-04-27}
        LastAuctionPrice                float64{35}
        LastAuctionVolume               float64{1254}
        PreviousInternalDailyClosingPriceType  char{a}
        InternalLastAuctionTimestamp            Timestamp{2015-04-27 03:36:20:762}
        InternalDailyBusinessDayTimestamp       Timestamp{2015-04-27 01:30:00:437}
        DailyOpeningPriceTimestamp              Timestamp{2015-04-27 03:45:04}
        DailyHighPriceTimestamp                 Timestamp{2015-04-27 03:46:53}
        DailyLowPriceTimestamp                  Timestamp{2015-04-27 03:45:14}
        PreviousDailyClosingPriceTimestamp      Timestamp{2015-04-24 10:01:17}
        InternalDailyVWAP                       float64{35}
```

For more details about the fields and tags available in quotation data type, and their possible values, see *FeedOS Quotation Tags Guide*.

2.2. Trading Status

Each time a modification of the trading status occurs, the values of the quotation tag **TradingStatus** conveyed on the NSE INDIA market data stream are disseminated via FeedOS data stream in *Other Values*:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#

- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag **Trading Status** is described in the table below:

Table 4 Trading Status of the NSE INDIA market data stream – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradingStatus`	FeedOS tag name.
Numeric ID	9100	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Type	`Enum`	Enumeration data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, as described below, concerning the characteristics of the trading status.
Possible Values	2	Trading Halt
	5	Price Indication
	16	Trade Dissemination Time
	17	Ready to Trade
	18	Not Available for Trading
	21	Pre-Open

2.3. Specific Quotation Tags

The following section describe the specific quotation tags available on the NSE INDIA market data stream:

- 2.3.1. Other Values.

2.3.1. Other Values

The following sections describe the specific quotation tags available on the NSE INDIA market data stream:

- 2.3.1.1. InternalDailyClosingPriceType.

2.3.1.1. InternalDailyClosingPriceType

The values of the quotation tag **InternalDailyClosingPriceType** conveyed on the NSE INDIA market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the type of the internal daily closing price:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `InternalDailyClosingPriceType` is described in the table below (the values currently disseminated are highlighted in `green`):

Table 5 InternalDailyClosingPriceType – technical implementation in QuantFEED®

Component	Value	Description
Tag Name	`InternalDailyClosingPriceType`	FeedOS tag name.
Numeric ID	`9155`	FeedOS unique ID disseminated on S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Char`	Char data type.
Format	*`[Internal Specific Value]`*	An ***internal specific value***, detailing the type of daily closing price, as described below.
Possible Values	0	**Undefined**
	a	**Official Close** – Explicit closing price value calculated and distributed by an exchange for the main trading session of a given trading day.
	b	**Official Indicative** – Exchange has provided an indicative price and marked it as indicative, however no trading activity is observed.
	c	**Official Carry Over** – Explicit Closing price value from a previous trading day carried forward by the exchange to the given trading day.
	d	**Last Price** – Final price disseminated by the exchange for the main trading session or dissemination period of a given trading day (for indices).
	e	**Last Eligible Price** – Execution price of the final trade (subject to trade qualifiers) accepted by the exchange for the main trading session of a given trading day.
	z	**Manual** – Price disseminated manually (in case of production correction).

2.4. MBL and MBO Data*

The MBL and MBO books are full depth.

3. Closing Price

The closing price is the last trade price upon close, as provided by the exchange. If the instrument has an auction phase, the market sends the last auction price, which becomes the closing price. When a stock splits, the closing price is adjusted after the closing. The settlement price is handled when provided by the market.

* The MBL and MBO data may not be included by default in your Level1 data subscription, but sold separately. Depending on your contract, additional terms, conditions and fees may apply. For more details about the subscription options, please contact S&P Capital IQ Real-Time Solutions.

4. Session Kinematics

Some instruments follow a multi-session kinematics, as described in the table below:

Table 6 Possible multi-session kinematics example (New Delhi Standard Time)

Session	Trading Hours (New Delhi Time)	Signal	Event
I	09:30	**OPEN**	• TradingSessionId = 1 • RESET DailyOpeningPrice • RESET DailyClosingPrice • RESET DailyTotalVolumeTraded • RESET SessionTotalAssetTraded • RESET SessionClosingPrice • PreviousDailyClosingPrice = DailyClosingPrice • SessionOpeningPrice • CurrentBusinessDay = today's trade date • PreviousDailyTotalVolumeTraded = DailyTotalVolumeTraded
	10:30	close	
II	10:30	open	• Trading Session ID +1 • RESET SessionClosingPrice • RESET SessionHigh/Low Price • PreviousSessionOpeningPrice = SessionOpeningPrice of the previous SessionID • SessionOpeningPrice
	11:30	close	
III	11:30	open	• Trading Session ID +1 • RESET SessionClosingPrice • RESET SessionHigh/Low Price • PreviousSessionOpeningPrice = SessionOpeningPrice of the previous SessionID • SessionOpeningPrice
	12:30	close	
IV	12:30	open	• Trading Session ID +1 • RESET SessionClosingPrice • RESET SessionHigh/Low Price • PreviousSessionOpeningPrice = SessionOpeningPrice of the previous SessionID • SessionOpeningPrice
	13:30	close	
V	13:30	open	• Trading Session ID +1 • RESET SessionClosingPrice • RESET SessionHigh/Low Price • PreviousSessionOpeningPrice = SessionOpeningPrice of the previous SessionID • SessionOpeningPrice
	14:30	close	
VI	14:30	open	• DailyClosingPrice • DailyTotalVolumeTraded • SessionClosingPrice • PreviousDailyClosingPrice = DailyClosingPrice of the previous trading day • RESET TradingSessionId (invalid)
	15:30	**CLOSE**	

Note Single-session instruments, such as the equities, follow a different, simplified kinematics, as shown below:

09:00 – 09:08 Pre-Open Phase
09:15 – 15:30 Regular Trading
15:40 – 16:00 Closing Phase

5. Special Behavior

The following sections describe the special behavior of the NSE INDIA market data stream:

5.1. Level1 Market Data Kinematics – OPEN

Effective June 2015, the OPEN signal in the Level1 Market Data Kinematics is trade-independent, as shown in the example below:

```
“TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE
ASK_QTY *CONTENT_MASK* *FLAGS*"
"VU (ValuesUpdate) : SERVER_TIME INSTRUMENT VALUES..."
"SI (TradeEvent) *SIGNAL* : SERVER_TIME INSTRUMENT SIGNAL LAST_PRICE"

VU   00:30:33:130.546   250581080    HighLimitPrice=?        LowLimitPrice=?
VU   02:45:26:991.251   250581080    HighLimitPrice=3.85     LowLimitPrice=3.15
SI   04:00:00:341.434   250581080    OPEN    3.5
TE   04:00:00:341.434   250581080    3.5     *       *       *       *       *       O
VU   04:00:00:341.434   250581080    TradingSessionId=1      SessionOpeningPrice=?
TradingStatus=5
TE   04:00:02:000.408   250581080    *       *       *       *       3.7     401
TE   04:04:19:488.162   250581080    *       *       *       *       3.7     411
```

5.2. Theoretical Opening Price for Indices

Effective June 2015, the indices are sending the Theoretical Opening Price via the tag `LastAuctionPrice` between 03:30 UTC and OPEN time, as shown in the example below:

```
“TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE
ASK_QTY *CONTENT_MASK* *FLAGS*"
"VU (ValuesUpdate) : SERVER_TIME INSTRUMENT VALUES..."
"SI (TradeEvent) *SIGNAL* : SERVER_TIME INSTRUMENT SIGNAL LAST_PRICE"

VU   03:30:00:182.887   250581227    TradingStatus=21
VU   03:30:22:170.748   250581227    LastAuctionPrice=8436.35
VU   03:30:23:183.534   250581227    LastAuctionPrice=8439.35
VU   03:37:50:347.106   250581227    LastAuctionPrice=8326.9
VU   03:37:51:339.198   250581227    LastAuctionPrice=8326.4
SI   03:37:52:355.673   250581227    OPEN    8327.1
TE   03:37:52:355.673   250581227    8327.1  *       *       *       *       *       OHLy
VU   03:37:52:355.673   250581227    LastAuctionPrice=8327.1
VU   03:45:00:299.696   250581227    TradingStatus=17
```

5.3. AT_OPEN Prices

Effective June 2015, in the Level1 Market Data Kinematics, the tags `LastAuctionPrice`, `LastAuctionVolume` and the AT_OPEN price will be disseminated during the PreOpen Phase:

```
“TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE
ASK_QTY *CONTENT_MASK* *FLAGS*"
"VU (ValuesUpdate) : SERVER_TIME INSTRUMENT VALUES..."
"SI (TradeEvent) *SIGNAL* : SERVER_TIME INSTRUMENT SIGNAL LAST_PRICE"

VU   null               250578632    HighLimitPrice=532.75   LowLimitPrice=435.95
VU   null               250578632    TradingStatus=21
TE   03:30:01:000.051   250578632    *       *       AT_OPEN 8854    482.95  1
VU   03:30:01:000.051   250578632    LastAuctionPrice=?      LastAuctionVolume=?
VU   03:30:02:000.643   250578632    LastAuctionPrice=525    LastAuctionVolume=1416
VU   03:30:03:000.745   250578632    LastAuctionPrice=526.6  LastAuctionVolume=1433
```

5.4. Trades Removal

Effective **June 2015**, there are no more trades, as shown in the example below:

```
“TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE
ASK_QTY *CONTENT_MASK* *FLAGS*"
"VU (ValuesUpdate) : SERVER_TIME INSTRUMENT VALUES..."
"SI (TradeEvent) *SIGNAL* : SERVER_TIME INSTRUMENT SIGNAL LAST_PRICE"

VU   09:59:59:000.125   250578632    LastTradePrice=483.7    LastTradeQty=1
DailyTotalVolumeTraded=7889125  DailyTotalAssetTraded=3818809847.5
```

5.5. Feed Delay Removal

Effective June 2015, the NSE INDIA market data stream is no longer delayed.

5.6. Microsecond Timestamp Precision

Effective **June 2015**, the server timestamps displays microsecond units on the Level1 Market Data, as shown in the example below (highlighted in `green`):

```
“TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE
ASK_QTY *CONTENT_MASK* *FLAGS*"

TE   04:00:00:341.434   250581080    3.5     *       *       *       *       *       O
```

6. Finding the Latest Information

For the latest documentation and product updates, additional support and training, please contact our support services one of the following ways:

- E-mail: rts-support@spcapitaliq.com
- Web: https://support.quanthouse.com.