

Tick42 BLP Bridge for Open Mama

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T I C K 4 2

Overview

Over the years Bloomberg have provided APIs to allow desktop applications direct access to the same data that is delivered to the Bloomberg terminal.

Bloomberg themselves have used the APIs to implement their various Excel add-ins.

Over the last 10 years Bloomberg have introduced a range of data feed products (Server API, B-Pipe, B-Pod and Managed B-Pipe) and enhanced their API's and started to standardise them.

Tick42 have built subscribers on the same APIs as a component of its Real Time Toolkit (RTT). These have been used in the RTTXL and RttRTD add-ins to deliver terminal data into Excel and also as a more generic component of RTT to allow users to build custom applications that consume the data.

The Open Bloomberg API provides access to Bloomberg Terminal, Server API and Managed B-Pipe and can run in both a Windows and Linux environment. This API was provided as open source in Feb 2012

The Tick42 BLP Bridge for OpenMama (tick42blpBridge) is an open source project released by Tick42 as part of OpenMama (OM) that builds on Tick42's experience of presenting Bloomberg data feeds to market data style client API's to provide a convenient way of requesting Bloomberg data in an Open Mama environment.

The Tick42 Bridge v 1.0 can be downloaded as source code from the OpenMama site. A binary build is available from the Tick42 web site that includes pre-built components that allow mamalistenc and other OpenMama applications to run "out of the box".

This document provides an overview of the capabilities of the bridge.

Bloomberg API features supported.

This code is based on the Bloomberg Open API which can be downloaded from <http://www.openbloomberg.com/open-api/>

To build the source code the Bloomberg Open API must be installed.

To run the Tick42 Blp Bridge, the user must either have access to a Bloomberg data feed e.g. Terminal, Server API or Managed B-Pipe.

OM Services

The Bloomberg API provides access to a number of Bloomberg data feeds:

- Real time values (`//blp/mktdata`)
- Reference data (`//blp/refdata`)
- Delayed Real time data (`//blp/mktdata` with delayed data options)
- Historical data.
- Contributions.

The Tick42 blpBridge provides access to what Bloomberg describe as the “Core Services” (Real Time Data, Delayed Data and Reference data). Each of these services is presented as a separate OM service by the bridge.

The first release of the Bridge does not provide access to the Historical Data or Contribution services.

Examples of mamalstenc output are provided below.

Fields

The Open Bloomberg API requires data subscriptions to specify which fields are required from any data request for an instrument.

The standard OM data request requires a symbol name, and the expectation for market data is that all the fields for an instrument will then be provided. This is obviously not practical for the Bloomberg data feed with its rich set of static and real time data, and the Tick42 blp bridge, provides two mechanisms for controlling the fields returned.

The Tick42 blpBridge provides

- A set of hard coded default fields that will be delivered for a symbol. The bridge will shortly be enhanced to make this list configurable from the `mama.properties` file.
- A syntax that can be used to qualify the security name to specify the fields the client wishes to receive.
`VOD LN Equity,[BID, ASK, LAST_PRICE]`

Deliverables

The blpBridge package delivers

- A “ready-to-run” binary zip file including a copy of mamalistenc. This has no external dependencies other than an ability to connect to Bloomberg, and allows very easy evaluation of the Tick42 Blp Bridge.
- The source code of blpBridge. This requires the Bloomberg Open API, <http://www.openbloomberg.com/open-api/>, OpenMama <http://www.openmama.org/downloads>, and the boost libraries (<http://www.boost.org/>) to be installed, and allows the bridge to be built and extended.

The source release will be contributed to Open Mama under the same licence as Open Mama. Please e-mail blpbridge@tick42.com if you wish to download the binary release.

Installation and build

This section describes how to install the blpBridge.

The binary release just requires the release to be unzipped. All dependencies are included in the zip file.

The source can be obtained from the OpenMama git repository. Once the source has been downloaded detailed instructions on how to build and run can be found in docs\Tick42 BLP Bridge Development environment.pdf

The current release (2.1.1.2) of OpenMama does not contain the bridge name for the tick42blp bridge so to run the bridge it is necessary to either build the Open Mama libraries from source having applied the patches provided in the tick42blp bridge source download or to use the OpenMama library dlls form the tick42 binary release

These patches have been submitted to OpenMama and are expected to be incorporated in the next release

Configuration

Mama.properties must be configured in order to load and run the bridge and be located in the directory named by the WOMBAT_PATH environment variable

Currently the bridge uses a single property in the mama.properties file

```
mama.tick42blp.transport.blp_tport.url=localhost:8194
```

Future versions are likely use more properties.

Usage

Appendix 1 gives some sample output from mamalistenc in different usages scenarios

This version of the bridge provides three sources BlpMktData, BlpMktDataDelayed and BlpRefData that map onto the Bloomberg core services.

The BlpMktData service will deliver live data while the BlpMktDataDelayed service will deliver delayed data. If the feed is not provisioned for live data then the data from the BlpMktData service will also be delayed.

The ability to explicitly request delayed data is useful when the bridge is being used to deliver data to multiple users, not all of whom may be permissioned for live data

The BlpMktData sources provide an initial image followed by a stream of updates while the BlpRefData source provides just an initial image.

Default Fields

Simply passing the ticker symbol to an Open Mama data request will result in a default set of fields requested from Bloomberg. For BlpMktData (and BlpMktDataDelayed) we request

LAST_PRICE, LAST_SIZE, BID, BID_SIZE, ASK, ASK_SIZE, HIGH, LOW, VOLUME

And for ref data we request

NAME, PX_YEST_CLOSE, PX_CLOSE_DT, PX_BID, PX_ASK, PX_LAST, ID_ISIN, VOLUME_AVG_5D,
VOLUME_AVG_10D

Note that for BlpMktData requests Bloomberg typically deliver more fields than are actually requested. In this default mode we deliver all the fields that bloomberg send.

Specifying fields

Appending a list of field names in [] will request those fields from Bloomberg. This overrides the default field list from the previous section for example VOD LN Equity, [BID, ASK, LAST_PRICE]

In this case the content of the update is filtered to just those fields specified. See the second example in Appendix 1.

This syntax applies similarly to requests on the BlpRefData source allowing access to the enormous set of reference data that is available from Bloomberg.

Some of the fields that are available of the Bloomberg reference data service might change relatively frequently for example the VWAP field "EQY_WEIGHTED_AVG_PX" This field could be re-requested on demand on the BlpRefData service

Appendix 1 – sample output from mamalistenc

BlpMktData service – default fields

```
mamalistenc -B -S "BlpMktData" -s "VOD LN Equity" -tport blp_tport -m blp -threads 1
```

There is a lot of output here but this shows the complete image, a quote, a trade and a recap

Type CTRL-C to exit.

Created subscription: source=[BlpMktData], symbol=[VOD LN Equity]

Processing SUBSCRIPTION_STATUS

2012/09/25 09:18:20: VOD LN Equity - SubscriptionStarted

Processing SUBSCRIPTION_DATA

2012/09/25 09:18:20: MarketDataEvents

message type 1

number of fields: 143

```
EXCH_AUCTION_MKT_STATUS_RT is NULL
EXCH_OFF_HOUR_MKT_STATUS_RT is NULL
LAST_YLD_TDY is NULL
PREVIOUS_CLOSE_ADJ_BY_GR_DVD_RT is NULL
OFFICIAL_PREVIOUS_DAY_CLOSE_RT is NULL
CLOSE_LOCAL_SOURCE_RT is NULL
CLOSE_CC_BLOOMBERG_RT is NULL
PRICE_CLOSE_RT is NULL
PRICE_CLOSE_TIME_RT is NULL
```

Number of processed fields: 134

.BlpMktData.Update Type: INITIAL Status OK

API_MACHINE	0	STRING	n246
ASK	0	F64	178.600000
ASK_ALL_SESSION	0	F64	178.600000
ASK_ALL_SESSION_TDY_RT	0	F64	178.600006
ASK_PX_LOCAL_EXCH_SOURCE_RT	0	STRING	LN
ASK_SIZE	0	I32	8039
ASK_SIZE_ALL_SESSIONS_RT	0	I32	8039
ASK_SIZE_TDY	0	I32	8039
ASK_TDY	0	F64	178.600000
AT_TRADE_VOLUME	0	I32	5715701
AUCTION_EXTENSION_RT	0	I8	0
AUCTION_TYPE_REALTIME	0	STRING	OPEN
BEST_ASK	0	F64	178.600000
BEST_BID	0	F64	178.500000

BID	0	F64	178.500000
BID_ALL_SESSION	0	F64	178.500000
BID_ALL_SESSION_TDY_RT	0	F64	178.500000
BID_ASK_TIME	0	TIME	08:28:49
BID_PX_LOCAL_EXCH_SOURCE_RT	0	STRING	LN
BID_SIZE	0	I32	10789
BID_SIZE_ALL_SESSIONS_RT	0	I32	10789
BID_SIZE_TDY	0	I32	10789
BID_TDY	0	F64	178.500000
EQY_TURNOVER_REALTIME	0	F64	1119978801.659454
EXCH_CODE_ASK	0	STRING	L
EXCH_CODE_BID	0	STRING	L
EXCH_CODE_LAST	0	STRING	L
EXCH_VWAP	0	F64	178.357000
HIGH	0	F64	178.950000
HIGH_LOCAL_SOURCE_RT	0	STRING	LN
HIGH_TDY	0	F64	178.950000
ID_BB_SEC_NUM_SRC	0	I64	678605358297
IND_ASK_FLAG	0	I8	0
IND_BID_FLAG	0	I8	0
IN_AUCTION_RT	0	I8	0
IS_DELAYED_STREAM	0	I8	1
LAST_ALL_SESSIONS	0	F64	178.550000
LAST_AT_TRADE	0	F64	178.550003
LAST_AT_TRADE_TDY	0	F64	178.550000
LAST_PRICE	0	F64	178.550000
LAST_PX_LOCAL_EXCH_SOURCE_RT	0	STRING	LN
LAST_TRADE	0	F64	178.550000
LAST_TRADE_TDY	0	F64	178.550000
LAST_UPDATE_ASK_RT	0	TIME	08:28:49
LAST_UPDATE_BID_RT	0	TIME	08:28:49
LONDON_MANUAL_VOLUME	0	I32	563528
LOW	0	F64	177.600000
LOW_LOCAL_SOURCE_RT	0	STRING	LN
LOW_TDY	0	F64	177.600000
MID	0	F64	178.550000
MID_TDY	0	F64	178.550000
MKTDATA_EVENT_SUBTYPE	0	STRING	INITPAINT
MKTDATA_EVENT_TYPE	0	STRING	SUMMARY
MdMsgNum	0	I32	0
MdMsgStatus	0	I32	0
MdMsgTotal	0	I32	0
MdMsgType	0	I32	1
NEWS_HEAT_STORY_FLOW_RT	0	I32	2
NEWS_HEAT_USER_ACTIVITY_RT	0	I32	0
NEWS_SENTIMENT_RT	0	F64	0.139946
NO_SHORT_SELL_REALTIME	0	I8	0
NUM_TRADES_RT	0	I32	1052
OFFICIAL_AUCTION_VOLUME_RT	0	I32	0
OFFICIAL_CLOSE_AUCTION_PRICE_RT	0	F64	0.000000
OFFICIAL_CLOSE_AUCTION_VOLUME_RT	0	I32	0
OFFICIAL_CLOSING_MID_RT	0	F64	177.975006
OFFICIAL_OPEN_AUCTION_PRICE_RT	0	F64	178.000000
OFFICIAL_OPEN_AUCTION_VOLUME_RT	0	I32	1438535
OPEN	0	F64	178.000000
OPEN_CC_BLOOMBERG_RT	0	STRING	UC
OPEN_LOCAL_SOURCE_RT	0	STRING	LN
OPEN_TDY	0	F64	178.000000
OPEN_TRADE_PRICE_REALTIME	0	F64	178.000000
PER_TRADE_VWAP_REALTIME	0	F64	178.360000
PER_TRADE_VWAP_TURNOVER_RT	0	F64	1115644294.059066
PER_TRADE_VWAP_VOLUME_RT	0	F64	6255000.000000


```

PREV_CLOSE_VALUE_REALTIME | 0 | F64 | 178.000000
PREV_SES_LAST_PRICE | 0 | F64 | 178.000000
PREV_TRADING_DT_REALTIME | 0 | TIME | 2012-09-24 00:00:00
PRICE_52_WEEK_HIGH_DATE_RT | 0 | TIME | 2012-08-14 00:00:00
PRICE_52_WEEK_HIGH_RT | 0 | F64 | 191.750000
PRICE_52_WEEK_LOW_DATE_RT | 0 | TIME | 2011-09-26 00:00:00
PRICE_52_WEEK_LOW_RT | 0 | F64 | 155.320000
PRICE_CHANGE_ON_DAY_RT | 0 | F64 | 0.550000
PRICE_DISPLAY_FORMAT_TYPE_RT | 0 | STRING | DECIMAL
PRICE_HIGH_RT | 0 | F64 | 178.950000
PRICE_LAST_ASK_RT | 0 | F64 | 178.600000
PRICE_LAST_BID_RT | 0 | F64 | 178.500000
PRICE_LAST_RT | 0 | F64 | 178.550000
PRICE_LAST_TRADE_RT | 0 | F64 | 178.550000
PRICE_LOW_RT | 0 | F64 | 177.600000
PRICE_OPEN_RT | 0 | F64 | 178.000000
PRICE_PREVIOUS_CLOSE_RT | 0 | F64 | 178.000000
PRICING_METHOD_REALTIME | 0 | STRING | PRC
PX_DISPLAY_FMT_MAX_#_DECIMALS_RT | 0 | I32 | 3
PX_DISPLAY_FMT_MIN_#_DECIMALS_RT | 0 | I32 | 2
PX_METHOD | 0 | STRING | PRC
PX_OFFICIAL_AUCTION_RT | 0 | F64 | 0.000000
QUOTED_CURRENCY_REALTIME | 0 | STRING | GBp
QUOTE_LOT_SIZE_REALTIME | 0 | F32 | 1.000000
RT_API_MACHINE | 0 | STRING | apipubx3@y733
RT_EXCH_MARKET_STATUS | 0 | STRING | ACTV
RT_EXCH_TRADE_STATUS | 0 | I8 | 1
RT_PRICING_SOURCE | 0 | STRING | LN
RT_PX_CHG_NET_1D | 0 | F64 | 0.550000
RT_PX_CHG_PCT_1D | 0 | F32 | 0.308989
RT_QUOTE_STATUS | 0 | I8 | 1
RT_SIMP_SEC_STATUS | 0 | STRING | TRAD
RT_TIME_OF_TRADE | 0 | TIME | 09:02:57
RT_TRADING_PERIOD | 0 | STRING | TRAD
RT_VWAP_VOLUME | 0 | F64 | 4366196.000000
SCALING_FACTOR_REALTIME | 0 | F32 | 1.000000
SECURITY_STATUS_VERSION | 0 | I32 | 2
SES_END | 0 | TIME | 17:00:00
SES_START | 0 | TIME | 08:00:00
SIZE_LAST_AT_TRADE | 0 | I32 | 947
SIZE_LAST_AT_TRADE_TDY | 0 | I32 | 947
SOURCE_TRADING_PERIOD_REALTIME | 0 | STRING | T
THEO_PRICE | 0 | F64 | 178.000000
TICK_SIZE_TABLE_IDENTIFIER_RT | 0 | I32 | 5959
TIME | 0 | TIME | 09:03:15
TIME_AUCTION_CALL_CONCLUSION_RT | 0 | TIME | 08:00:00
TRADE_LOT_SIZE_REALTIME | 0 | I32 | 1
TRADE_UPDATE_STAMP_RT | 0 | TIME | 2012-09-25 09:03:15
TRADING_CONDITIONS_1_REALTIME | 0 | STRING |
TRADING_CONDITIONS_2_REALTIME | 0 | STRING |
TRADING_CONDITIONS_3_REALTIME | 0 | STRING |
TRADING_CONDITIONS_4_REALTIME | 0 | STRING |
TRADING_DT_REALTIME | 0 | TIME | 2012-09-25 00:00:00
TRADING_HALT_REASON_TYPE_RT | 0 | STRING | NONE
TURNOVER_TODAY_REALTIME | 0 | F64 | 1119978801.659454
VOLUME | 0 | I64 | 6279229
VOLUME_TDY | 0 | I64 | 6279229
VOLUME_THEO | 0 | I32 | 1438535
VWAP | 0 | F64 | 178.273900
VWAP_NUM_TRADES_RT | 0 | I32 | 595
VWAP_STANDARD_DEV_RT | 0 | F64 | 0.364558
VWAP_TURNOVER_RT | 0 | F64 | 778378954.032074

```

.BlpMktData.Update Type: QUOTE Status OK

ASK	0	F64	178.650000
ASK2	0	F64	178.650000
ASK_ALL_SESSION	0	F64	178.650000
ASK_ALL_SESSION_TDY_RT	0	F64	178.650000
ASK_PX_LOCAL_EXCH_SOURCE_RT	0 0	STRING	LN
ASK_SIZE	0	I32	19894
ASK_SIZE_ALL_SESSIONS_RT	0	I32	19894
ASK_SIZE_TDY	0	I32	19894
ASK_TDY	0	F64	178.650000
ASK_UPDATE_STAMP_RT	0	TIME	2012-09-25 09:03:39.703000
BEST_ASK	0	F64	178.650000
BID_ASK_TIME	0	TIME	09:03:39
EVENT_TIME	0	TIME	09:03:39
EVT_QUOTE_ASK_LOCAL_EXCH_SRC_RT	0	STRING	LN
EVT_QUOTE_ASK_PRICE_RT	0	F64	178.650000
EVT_QUOTE_ASK_SIZE_RT	0	I32	19894
EXCH_CODE_ASK	0	STRING	L
IND_ASK_FLAG	0	I8	0
IS_DELAYED_STREAM	0	I8	1
LAST_UPDATE_ASK_RT	0	TIME	09:03:39
LAST_UPDATE_CHG_1D_RT	0	F32	0.650000
MKTDATA_EVENT_SUBTYPE	0	STRING	ASK
MKTDATA_EVENT_TYPE	0	STRING	QUOTE
MdMsgNum	0	I32	5
MdMsgStatus	0	I32	0
MdMsgTotal	0	I32	5
MdMsgType	0	I32	13
PRICE_LAST_ASK_RT	0	F64	178.650000

.BlpMktData.Update Type: TRADE Status OK

ALL_PRICE	0	F64	178.618000
ALL_PRICE_SIZE	0	I32	4741
EQY_TURNOVER_REALTIME	0	F64	1120825629.579514
EVENT_TIME	0	TIME	09:03:39
EVT_TRADE_DATE_RT	0	TIME	2012-09-25 00:00:00
EVT_TRADE_IDENTIFIER_RT	0	STRING	-1459614467
EVT_TRADE_LOCAL_EXCH_SOURCE_RT	0 0	STRING	LN
EVT_TRADE_PRICE_RT	0	F64	178.618000
EVT_TRADE_SIZE_RT	0	I32	4741
IS_DELAYED_STREAM	0	I8	1
MKTDATA_EVENT_SUBTYPE	0	STRING	NEW
MKTDATA_EVENT_TYPE	0	STRING	TRADE
MdMsgNum	0	I32	3
MdMsgStatus	0	I32	0
MdMsgTotal	0	I32	3
MdMsgType	0	I32	14
NUM_TRADES_RT	0	I32	1054
PER_TRADE_VWAP_REALTIME	0	F64	178.355000
PER_TRADE_VWAP_TURNOVER_RT	0	F64	1116457487.409683
PER_TRADE_VWAP_VOLUME_RT	0	F64	6259741.000000
RT_TIME_OF_TRADE	0	TIME	09:03:38
TURNOVER_TODAY_REALTIME	0	F64	1120825629.579514
UPDATE_ACTIONS_RT	0	I32	55040
VOLUME	0	I64	6283970
VOLUME_TDY	0	I64	6283970

2012/09/25 09:18:31: MarketDataEvents

message type 6

number of fields: 7

Number of processed fields: 7

.BlpMktData.Update Type: RECAP Status OK

EVENT_TIME	0	TIME	09:03:39
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```

IS_DELAYED_STREAM      | 0 |          I8 | 1
LONDON_MANUAL_VOLUME  | 0 |          I32 | 568269
MKTDATA_EVENT_SUBTYPE | 0 |    STRING | INTRADAY
MKTDATA_EVENT_TYPE    | 0 |    STRING | SUMMARY
MdMsgNum              | 0 |          I32 | 4
MdMsgStatus           | 0 |          I32 | 0
MdMsgTotal            | 0 |          I32 | 4
MdMsgType             | 0 |          I32 | 6
VOLUME                | 0 |          I64 | 6283970
VOLUME_TDY           | 0 |          I64 | 6283970
.MktData.Update Type: TRADE Status OK
ALL_PRICE              | 0 |          F64 | 180.550000
ALL_PRICE_COND_CODE    | 0 |    STRING | AT
ALL_PRICE_SIZE         | 0 |          I32 | 1923
EQY_TURNOVER_REALTIME | 0 |          F64 | 4891633700.012243
EVT_TRADE_CONDITION_CODE_RT | 0 |    STRING | AT
EVT_TRADE_IDENTIFIER_RT | 0 |    STRING | 671133293
EVT_TRADE_LOCAL_EXCH_SOURCE_RT | 0 |    STRING | LN
EVT_TRADE_PRICE_RT    | 0 |          F64 | 180.550000
EVT_TRADE_SIZE_RT     | 0 |          I32 | 1923
EXCH_CODE_LAST        | 0 |    STRING | L
IS_DELAYED_STREAM     | 0 |          I8 | 1
LAST2_DIR             | 0 |          I32 | 0
LAST2_TRADE           | 0 |          F64 | 180.500000
LAST_ALL_SESSIONS     | 0 |          F64 | 180.550000
LAST_AT_TRADE         | 0 |          F64 | 180.550000
LAST_AT_TRADE_TDY     | 0 |          F64 | 180.550000
LAST_DIR              | 0 |          I32 | 1
LAST_PRICE            | 0 |          F64 | 180.550000
LAST_PRICE_COND_CODE_RT | 0 |    STRING | AT
LAST_PX_LOCAL_EXCH_SOURCE_RT | 0 |    STRING | LN
LAST_TRADE            | 0 |          F64 | 180.550000
LAST_TRADE_TDY       | 0 |          F64 | 180.550000
LAST_UPDATE_CHG_1D_RT | 0 |          F32 | 2.750000
MKTDATA_EVENT_SUBTYPE | 0 |    STRING | NEW
MKTDATA_EVENT_TYPE    | 0 |    STRING | TRADE
MdMsgStatus           | 0 |          I32 | 0
MdMsgType             | 0 |          I32 | 14
NUM_TRADES_RT         | 0 |          I32 | 5218
PER_TRADE_VWAP_REALTIME | 0 |          F64 | 179.537000
PER_TRADE_VWAP_TURNOVER_RT | 0 |          F64 | 4794992958.786332
PER_TRADE_VWAP_VOLUME_RT | 0 |          F64 | 26707577.000000
PRICE_CHANGE_ON_DAY_RT | 0 |          F64 | 2.750000
PRICE_LAST_RT         | 0 |          F64 | 180.550000
PRICE_LAST_TRADE_RT   | 0 |          F64 | 180.550000
RT_PX_CHG_NET_1D     | 0 |          F64 | 2.750000
RT_PX_CHG_PCT_1D    | 0 |          F32 | 1.546680
SIZE_LAST_AT_TRADE   | 0 |          I32 | 1923
SIZE_LAST_AT_TRADE_TDY | 0 |          I32 | 1923
SIZE_LAST_TRADE      | 0 |          I32 | 1923
SIZE_LAST_TRADE_TDY  | 0 |          I32 | 1923
TRADE_SIZE_ALL_SESSIONS_RT | 0 |          I32 | 1923
TURNOVER_TODAY_REALTIME | 0 |          F64 | 4891633700.012243
VOLUME                | 0 |    UNKNOWN | Unknown
VOLUME_TDY           | 0 |    UNKNOWN | Unknown

```

BlpMktData Service – specified fields

```
mamalistenc -B -S "BlpMktData" -s "VOD LN Equity, [BID,ASK,LAST_PRICE]" -tport
blp_tport -m blp -threads 1
```

Here we limit the field set to BID, ASK and LAST_PRICE and the fields delivered in messages are limited to those three fields

```
.BlpMktData.Update Type: INITIAL Status OK
  ASK          |    0 |          F64 | 178.550000
  BID          |    0 |          F64 | 178.500000
  LAST_PRICE   |    0 |          F64 | 178.500000
  MdMsgNum     |    0 |          I32 | 1
  MdMsgStatus  |    0 |          I32 | 0
  MdMsgTotal   |    0 |          I32 | 1
  MdMsgType    |    0 |          I32 | 1
```

```
Processing SUBSCRIPTION_DATA
2012/09/25 09:26:08: MarketDataEvents
message type 13
number of fields: 28
  ASK_COND_CODE is NULL
  ASK_BROKER_CODE is NULL
  EVT_QUOTE_ASK_CONDITION_CODE_RT is NULL
  EVT_QUOTE_ASK_BROKER_RT is NULL
```

```
Number of processed fields: 1
.BlpMktData.Update Type: QUOTE Status OK
  ASK          |    0 |          F64 | 178.550000
  MdMsgNum     |    0 |          I32 | 2
  MdMsgStatus  |    0 |          I32 | 0
  MdMsgTotal   |    0 |          I32 | 2
  MdMsgType    |    0 |          I32 | 13
```

```
.BlpMktData.Update Type: TRADE Status OK
  LAST_PRICE   |    0 |          F64 | 178.550000
  MdMsgNum     |    0 |          I32 | 7
  MdMsgStatus  |    0 |          I32 | 0
  MdMsgTotal   |    0 |          I32 | 7
  MdMsgType    |    0 |          I32 | 14
```

BlpRefData Service – default fields

```
mamalistenc -B -S "BlpRefData" -s "VOD LN Equity" -tport blp_tport -m blp -threads 1
```

If we just specify the security name, the default set of fields is requested.

```
Created subscription: source=[BlpRefData], symbol=[VOD LN Equity]
number of fields: 9
Number of processed fields: 9
.BlpRefData.VOD LN Equity Type: INITIAL Status OK
ID_ISIN           | 0 | STRING | GB00B16GWD56
MdMsgStatus      | 0 | I32    | 0
MdMsgType        | 0 | I32    | 1
NAME             | 0 | STRING | VODAFONE GROUP PLC
PX_ASK           | 0 | F64    | 178.700000
PX_BID           | 0 | F64    | 178.650000
PX_CLOSE_DT      | 0 | TIME   | 2012-09-24 00:00:00
PX_LAST          | 0 | F64    | 178.700000
PX_YEST_CLOSE    | 0 | F64    | 178.000000
VOLUME_AVG_10D  | 0 | F64    | 96408500.000000
VOLUME_AVG_5D   | 0 | F64    | 93614500.000000
```

BlpRefData Service – specified fields

```
mamalistenc.exe -B -S "BlpRefData" -s "VOD LN Equity,[PX_HIGH, PX_LOW,
PX_VOLUME, VOLUME_AVG_12D]" -tpport blp_tport -m tick42blp -threads 1
```

In this example we specify exactly the ref data fields we want. Note that VOLUME_AVG_12D is not a valid field name. Bloomberg handles invalid fields on reference data requests by setting the value of the field to an error code

```
Created subscription: source=[BlpRefData], symbol=[VOD LN Equity,[PX_HIGH, PX_LOW,
PX_VOLUME, VOLUME_AVG_12D]]
number of fields: 3
Number of processed fields: 3
.BlpRefData.VOD LN Equity,[PX_HIGH, PX_LOW, PX_VOLUME, VOLUME_AVG_12D] Type: INITIAL
Status OK
MdMsgStatus      | 0 | I32    | 0
MdMsgType        | 0 | I32    | 1
PX_HIGH          | 0 | F64    | 179.000000
PX_LOW           | 0 | F64    | 177.600000
PX_VOLUME        | 0 | F64    | 7974076.000000
VOLUME_AVG_12D  | 0 | STRING | Field not valid
```