

ICE Trade Capture FAQ

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Is B2BITS ICE Trade Capture Solution certified by ICE?

Yes, B2BITS ICE Trade Capture Solution is a certified software. You can find us among ICE Trade Capture Vendors listed on the ICE website - <https://www.theice.com/connectivity/trade-capture-vendors>.

How to deploy the package and make it work

Follow the step-by-step instruction below:

1. Install FIXEdge using these instructions: <https://kb.b2bits.com/display/B2BITS/FIXEdge+Installation+Guide>
2. Create a database for ICE trades storing:
 - a. Create a database itself. 'ICE_Trades' is suggested as the default name.



Make sure that the parameter **Server authentication** of the SQL Server Database Engine is set to **SQL Server and Windows Authentication mode**. Change it, if necessary. For more information please refer to SQL Server technical manual.

- b. Create user login, database user and database tables using the 'MSSQL_ICE_database.sql' script – adjust it if necessary (database name, user, etc)
 - c. Execute 'MSSQL_ICETrdCapt.sql', 'MSSQL_ICEStrategies.sql', and 'MSSQL_ICESecDef.sql' scripts against the database to create stored procedures (adjust change the database name if necessary)
 - d. Add ODBC data source for the database on the server with installed FIXEdge
3. Adjust FIXEdge configuration (typically located here 'C:/B2BITS/FIXEdge/FIXEdge1/conf/')
- a. ICE Handler property file (*ICEProperties.properties*)
 - i. Specify SenderCompID for:
 1. The *ICESession* property so that its final format is: *SenderCompID[SOH]TargetCompID*
 2. The *ICESession.SenderCompID* property
 - ii. Add Security Definitions subscriptions to the necessary markets using provided examples in the "Security Definition Subscriptions" section:
 1. Add a security definition subscription name to the list in the *ICESession.SecurityDefinitionSubscriptions* property
 2. Specify *SecurityID* and *CFICode* for added security definition subscription as described in the property file commentsCodes of ICE markets can be found at: https://www.theice.com/publicdocs/technology/Supported_Market_Types_on_ICE_API.pdf
 - iii. Add Define Strategy (UDS) subscriptions to the necessary markets using provided examples in the "Security Definition Subscriptions" section:
 1. Add a security definition subscription name to the list in the *ICESession.UDSSubscriptions* property
 2. Specify *SecurityID* for added defined strategy subscription as described in the instruction below
*ICESession.UDSSubscriptions.<Subscription_Name>.SecurityID = ice_market_type_id*Codes of ICE markets can be found at: https://www.theice.com/publicdocs/technology/Supported_Market_Types_on_ICE_API.pdf



Defined Strategy (35=UDS) messages support is implemented in the ICE Trade Capter Solution (with DB Stored Procedures) based on FIXEdge 6.7.1

- iv. Specify an appropriate value of the *ICESession.SecurityDefinitionSubscriptions.RequestMode* property
 1. If you wish to receive SecurityDefinitions and UDS from p.ii only once a day, set *ICESession.SecurityDefinitionSubscriptions.RequestMode = OnceADay*
 2. If you wish to receive SecurityDefinitions and UDS from p.ii at each logon, set *ICESession.SecurityDefinitionSubscriptions.RequestMode = EachLogon*
- v. Specify a correct path in the *ICESession.StorageFileName* property.

- b. Make changes to the '*FIXEdge.properties*' configuration file:
 - i. For 'ICESession' specify SenderCompID, your ICE Username and Password. By default the parameters are filled with dummy values / not filled
 - c. 'BL_Config.xml'
 - i. Make sure that all <History> entities point to the correct DSN, also adjust username and password if they are different from default ones
 - ii. Specify correct SenderCompID in the rule "*Launch ICE Handler*" at the line: `<MatchMessage Value=" *PLACE YOUR SENDER COMP ID HERE. *" />`
E.g., if your SenderCompID is 1234, the rule will look like: `<MatchMessage Value=" *1234. *" />`
4. Start FIXEdge via [FIX Integrated Control Center \(FIXICC\)](#)

How to subscribe to the particular ICE market

ICE markets ICE Trade Capture Solution will subscribe to are specified in the *ICEProperties.properties* configuration file.

In order to subscribe to the particular ICE market, follow the step-by-step instruction below:

Security Definition Subscriptions

1. Review https://www.theice.com/publicdocs/technology/Supported_Market_Types_on_ICE_API.pdf and find the ICE Market Type ID you are interested in;
2. Come up with the name for the subscription and specify it in the *ICESession.SecurityDefinitionSubscriptions* property (it supports several values delimited by comma).
3. Add subscription details in the following format:
ICESession.SecurityDefinitionSubscriptions.<Subscription_Name>.SecurityID = ice_market_type_id
ICESession.SecurityDefinitionSubscriptions.<Subscription_Name>.CFICode = FXXXXX (for Futures) or OXXXXX (for Options) or OXXFXX (for Unique Option market IDs)



Parameter values *SecurityDefinitionSubscriptions* and *UDSSubscriptions* must be unique. Names of subscriptions should not be the same for receiving Security Definition response (35=d) and Defined Strategies (35=UDS) messages.

Below is the example of the subscription to the Atlantic Coal Futures market type. Market ID is 123. Let's say we are interested in options and the subscription name is ICEAtlanticCoalOptions:

Snippet from ICEProperties.properties

```
ICESession.SecurityDefinitionSubscriptions = ICEAtlanticCoalOptions
ICESession.SecurityDefinitionSubscriptions.ICEAtlanticCoalOptions.SecurityID = 123
ICESession.SecurityDefinitionSubscriptions.ICEAtlanticCoalOptions.CFICode = OXXXXX
```

To add a new ICE market, just repeat the steps 1-3 and update the *ICEProperties.properties* configuration file. Let's say we are interested in Singapore Energy futures (Market ID is 133) and subscription name is the ICESingaporeEnergyFutures:

Snippet from ICEProperties.properties

```
ICESession.SecurityDefinitionSubscriptions = ICEAtlanticCoalOptions, ICESingaporeEnergyFutures
# Atlantic Coal Futures
ICESession.SecurityDefinitionSubscriptions.ICEAtlanticCoalOptions.SecurityID = 123
ICESession.SecurityDefinitionSubscriptions.ICEAtlanticCoalOptions.CFICode = OXXXXX
# Singapore Energy
ICESession.SecurityDefinitionSubscriptions.ICESingaporeEnergyFutures.SecurityID = 133
ICESession.SecurityDefinitionSubscriptions.ICESingaporeEnergyFutures.CFICode = FXXXXX
```

Defined Strategies Subscriptions

Defined Strategy (35=UDS) messages support is implemented in the ICE Trade Capter Solution (with DB Stored Procedures) based on FIXEdge 6.7.1. Receiving UDS messages is possible only when switching to New Security Definition interface. Make sure that the values for StrategyPreference(9006) tag equal to "1" in Logon (35=A) message for New Security Definition messages support. Also recommended to specify PublishMktCreationRealtime(9010) tag equal to "1" in Logon (35=A) message for receiving in real-time the created defined strategies during the trading session.



See custom Logon in ICETC_Logon.msg file (typically located here 'C:\B2BITS\FIXEdge\FIXEdge1\conf')

1. Review https://www.theice.com/publicdocs/technology/Supported_Market_Types_on_ICE_API.pdf and find the ICE Market Type ID you are interested in;
2. Come up with the name for the subscription and specify it in the *ICESession.UDSSubscriptions* property (it supports several values delimited by comma).

3. Add subscription details in the following format:

ICESession.UDSSubscriptions.<Subscription_Name>.SecurityID = ice_market_type_id



Parameter values *SecurityDefinitionSubscriptions* and *UDSSubscriptions* must be unique. Names of subscriptions should not be the same for receiving Security Definition response (35=d) and Defined Strategies (35=UDS) messages.

Below is the example of the subscription to the:

- IPE Natural Gas Futures (Market ID is 3, subscription name is the ICEEuropeNaturalGas),
- IPE Gas Oil Futures (Market ID is 4, subscription name is the ICEEuropeGasOil),
- IPE Brent Futures (Market ID is 5, subscription name is the ICEEuropeBrent) market type.

Snippet from *ICEProperties.properties*

```
ICESession.UDSSubscriptions = ICEEuropeNaturalGas, ICEEuropeGasOil, ICEEuropeBrent
ICESession.UDSSubscriptions.ICEEuropeNaturalGas.SecurityID = 3
ICESession.UDSSubscriptions.ICEEuropeGasOil.SecurityID = 4
ICESession.UDSSubscriptions.ICEEuropeBrent.SecurityID = 5
```

How to perform recovery and re-request trades from some period

ICE Trade Capture Solution has inbuilt abilities to restore the trade data missed due to the outage. Basic recovery mechanism is based on the persistence file (*ICE_persistStorage.out*), where the date & time of the last received trade are preserved with the time accuracy received in the incoming message.

After the session is started, ICE Trade Capture Solution populates tags 75 (TradeDate) and 60 (TransactTime) in the Trade Capture Report Request based on the date & time (see LastTransactTime field) from the persistence file to request the snapshot of trades starting from the time when the latest trade was received.



If the file is absent or empty, ICE Trade Capture Solution will request the snapshot of trades from last 2 days starting from the "current" time (in UTC). Otherwise, data stated in the file will be used.

In order to re-request trades which have already been received earlier, just remove the persistence file (*ICE_persistStorage.out*) or specify the desired time in a LastTransactTime field (from which the snapshot of trades should be requested) and restart the session. Keep in mind [how long ICE keeps trade records](#) when specifying LastTransactTime in *ICE_persistStorage.out*.



The name of ICE storage file is specified in *ICEProperties.properties*:

```
ICESession.StorageFileName = ../FIXEdge1/log/ICE_persistStorage.out
```

How long does ICE keep trades records

According to [ICE Trade Capture specification](#), ICE holds trade capture data for last 2 business days only.

What is the ICE Trade Capture behavior in case of the ICE session termination

1. ICE Trade Capture Solution determines that connection with ICE is lost.
2. ICE Trade Capture Solution considers the Trade Capture Report subscription terminated.
3. ICE Trade Capture Solution tries to reconnect in accordance with the [ReconnectMaxTries](#) and [ReconnectInterval](#) session properties specified in the *FIXEdge.properties*.

Once the connection is back, ICE Trade Capture Solution starts execution of the [main flow](#) from:

1. step 2, if *ICESession.SecurityDefinitionSubscriptions.RequestMode = EachLogon* is specified in the *ICEProperties.properties*
2. step 6, if *ICESession.SecurityDefinitionSubscriptions.RequestMode = OnceADay* is specified in the *ICEProperties.properties*



Start time in Trade Capture Report Request (MsgType = "AD") will be populated [based on the data specified in the persistence file](#) (*ICE_persistStorage.out*)

What is the ICE session schedule and how to setup it in ICE Trade Capture Solution

According to [ICE Trade Capture specification](#), all FIX sessions in Production will be reset by the ICE FIX host after every 24 hours, i.e. at the beginning of the next trading day (during maintenance window **between 6:30 PM to 7:30 PM EST/EDT**).

As for Test environment, ICE has daily maintenance times **at 6:05 PM to 8:30 PM EST/EDT** except for Wednesday when there is an additional maintenance **between 1 PM to 3 PM EST/EDT**.

ICE regular trading and support hours can be found on [the official site](#).

The schedule can be set in ICE Trade Capture Solution by means of [FIXEdge Scheduler properties](#) or via [FIXICC Scheduler functionality](#).

- Below is the example of how the ICE schedule for Production environment can be configured (applicable to FIXEdge 6.0 and higher):

```
Snippet from FIXEdge.properties

FIXICC.Schedules = true

# Schedule for PROD ICE environment
Schedules.ICEFIXSchedule.StartTime = 0 30 19 * * *
Schedules.ICEFIXSchedule.TerminateTime = 0 30 18 * * *
Schedules.ICEFIXSchedule.TimeZone = EST5EDT

FixLayer.FixEngine.Session.ICESession.Schedule = ICEFIXSchedule
```

- Below is the example on how the ICE schedule for Test environment can be setup (applicable to FIXEdge 6.0 and higher):

```
Snippet from FIXEdge.properties

FIXICC.Schedules = true

# Schedule for TEST ICE environment
Schedules.ICEFIXSchedule.StartTime = 0 30 20 * * *; 0 0 15 * * 4
Schedules.ICEFIXSchedule.TerminateTime = 0 5 18 * * *; 0 0 13 * * 4
Schedules.ICEFIXSchedule.TimeZone = EST5EDT

FixLayer.FixEngine.Session.ICESession.Schedule = ICEFIXSchedule
```

 Both schedules are already configured out-of-box. Need just to switch between them when [move from Test to Production](#).

How to make a new field from [ICE Trade Capture FIX interface](#) stored in the database

Download process is free from any FIXEdge specifics. Any changes can be done by modifying the proper stored procedure and data model.

In order to process new fields so that they can appear in the database, the following needs to be done:

1. Check where the FIX tag you are interested in is located in the FIX message. Note that tags from repeating groups are allocated in the separate tables. Check [ICE Trade Capture to Database](#) for details.
 - a. If the FIX tag is located in the root of the message (either Trade Capture Report or Security Definition), then add the coincident column to the *ICEReports / ICESecurityDefinitions* table
 - b. If the FIX tag is located in one of the repeating groups which are already stored in the database, then add column to the corresponding table
 - c. If the FIX tag is located in one of the repeating groups which are not stored in the database, then add a new table for the group and specify the required field there
2. Add support for new fields in stored procedure (either *SaveReports* or *SaveDefinitions* depending on which fields you are going to add).

FIXEdge server restart is not required.

Example (for MS SQL Server):

Below is the example of how to add the new MiFID II related field to the ICE Trade Capture Solution so that it can be stored in the database.

Assume that tag 9707 (MiFIDID) from the Trade Capture Report message (MsgType = "AE") should be now stored in the database. Following the step-by-step instruction presented above:

1. According to the ICE Trade Capture specification (see <https://community.theice.com/docs/DOC-19796>), MiFIDID is located in the root of the Trade Capture Report message (MsgType = "AE"). Add the new *MiFIDID* column with *varchar (256)* type to the *ICEReports* table.

ICEReports

```
ALTER TABLE [ICEReports] ADD [MiFIDID] [varchar](256) NULL
```

2. Then the *SaveReports* stored procedure should be adjusted:

SaveReports

```
INSERT INTO [ICEReports]
(
    TradeReportID,
    SendingTime,
    .....
    ClientIDCode,
    MiFIDID,                -- new MiFIDID tag
    ClientAppType
)
SELECT
    @ReportID,
    @SendingTime,
    .....
    C.value('f9706[1]', 'nvarchar(256)'),
    C.value('f9707[1]', 'nvarchar(256)'), -- new MiFIDID tag
    @ClientAppType
FROM @xmlData.nodes('/FIXMessage') as T(C)
OPTION (OPTIMIZE FOR ( @xmlData = NULL ));
```

How to move ICE Trade Capture configuration from Test to Production

In order to move your ICE Trade Capture configuration to Production, several steps are required and/or recommended to be performed:

1. Adjust ICE session host and port from *FIXEdge.properties* to point it to Production;
2. Go through the steps from [ICE Trade Capture FAQ#How to deploy the package and make it work](#) and adjust your configuration to point it to Production;
3. Turn off (comment out) the schedule for ICE TEST and turn on (uncomment) the schedule for ICE PROD environment in *FIXEdge.properties*. Use [ICE Trade Capture FAQ#What is the ICE session schedule and how to setup it in ICE Trade Capture Solution](#) as a reference;
4. In case SSL connection is required for ICE Production environment (subject for clarification with ICE team), uncomment the following properties in *FIXEdge.properties*:

```
FixLayer.FixEngine.Session.ICESession.SSL = true
FixLayer.FixEngine.Session.ICESession.SSLProtocols = TLSv1, TLSv1_1, TLSv1_2
```

5. Turn off debug and trace levels of logging by changing values of appropriate properties in *FIXEdge.properties* to reduce the number of log records and hence reduce the size of log files;

```
Log.DebugIsOn = false
Log.TraceIsOn = false
```

6. Configure [logs rotation](#) to manage the disk space where *FIXEdge* is installed;
7. Setup email notifications to be informed in case of ICE session state is changed. Check [How to configure session state changes notifications](#) article for more details.

What is the Download Performance?

While all the Trade Capture Reports are downloaded in real-time, the necessity to request the whole ICE markets in order to get desired instruments and the massive size of the security definition FIX messages lead to the question regarding the performance of security definitions download.

The performance of the download can vary and depends on the following factors (including, but not limited to):

- number of ICE markets subscriptions
- number of underlying instruments for each subscription

- period of operation and volume of data already stored in the database
- overall solution setup (e.g. are FIXEdge and database located on one server or on two different servers? are these servers located in one or different regions?)
- network specifics

Our tests shows that performance can decrease with the increased volume of data stored in the database after some period of operation. To maintain high performance of the solution, it is recommended to clean the database and archive/purge old/unused data on a regular basis (e.g. once a week/month).

How can I know about ICE releases which affect the ICE Trade Capture Solution

EPAM B2BITS team is constantly monitoring updates of ICE Trade Capture interface. In case of any changes, the impact on the solution is assessed. If the change is critical and it affects the solution, a new version of the software is released and distributed to the clients in advance.

How to use dictionary from ICE Trade Capture Solution package based on FIXEdge 6.7.1 in previous versions

Replace `<fixdic>` tag from:

additional_ice.xml

```
...  
<fixdic id="FIX44ICETC"parent_id="FIX44"fixversion="4.4" title="ICE Trade Capture FIX 4.4" date="2018/11/16" >  
...
```

to:

additional_ice.xml

```
...  
<fixdic fixversion="4.4" title="ICE Trade Capture FIX 4.4" date="2018/11/16" id="FIX44">  
..
```



Date may be different

Replace the dictionary with a new one and restart FIXEdge.

Why ICE sending NULL value in ExecType(150) tag for some trades?

ExecType(150) will not be sent on snapshot Trade Capture Reports. The value for ExecType(150) is set to "F" by ICE Trade Capture Solution when processing such messages. This value is stored in the database.



See <https://community.theice.com/docs/DOC-19796>