



Client code substitution setup

Manual

The logo for Quik, consisting of the word "quik" in a white, lowercase, sans-serif font, centered within a solid green circle.

quik

Contents

1. Purpose.....	3
2. Operating principles	3
3. Setup	4
3.1 Settings in quik.ini	4
3.2 Client code substitution configuration file	5
4. Usage examples.....	7
4.1 Unconditional client code substitution	7
4.2 Client code substitution by prefix	9
4.3 Client code substitution matching trade account.....	13
4.4 Client code substitution by prefix and cross trade	14
4.5 Client code substitution for the Pre-trade control module	15

You may email your comments on this Manual to: quiksupport@argatech.com

1. Purpose

When an order is submitted in the trading system it has client code specified to identify orders (and trades). In some cases a client code needs to be modified to submit an order in the trading system.

The QUIK server settings that are described below allow making such a modification on the basis of the specified rules.

2. Operating principles

The rules for client code substitution are described in the configuration file in form of the pairs as follows:

<Initial code>=<code for substitution> or <Trade account>, <initial code>=<code for substitution>.

Settings allow grouping classes by exchanges with the same substitution rules.

With the **by prefix** mode of code substitution enabled (**by_prefix=1**) and the **leave_prefix** setting enabled in the beginning of the **BrokerRef** order field client code is added according to the following algorithm:

1. In the list of substitutions such a pair is searched initial code of which is equal to the beginning of the code from the order. At this if the **by_trdacc=1** setting (check substitution matching trade account) is enabled then only those pairs are searched which have **<trade account>** specified and it equals to the trade account of the order.
2. If the pair is found then in the beginning of the **BrokerRef** order field **<code for substitution>** is added.
3. If the pair is not found then in the beginning of the **BrokerRef** order field **prefix** value (default prefix) is added.
4. Otherwise substitution is not performed.

With the **by prefix** mode of code substitution enabled (**by_prefix=1**) and the **leave_prefix** setting disabled client code in the **BrokerRef** order field is substituted by a new prefix. See the algorithm in sub-section [4.2.2](#).

If the **by prefix** mode of code substitution is disabled (**by_prefix=0**), then **<initial code>** is substituted by **<code for substitution>**.

If the symbol quantity is exceeded the field value is cut on the right to the allowed length.

When orders, trades, and other entities with client code are received from the trading system a reversed substitution is performed:

1. In the substitution list a pair is searched with the **BrokerRef** in order (trade, etc.) starting from **<initial code><code for substitution>**. At this if the **by_trdacc** setting is enabled, then only those

pairs are accounted, which have the same **<trade account>** as trade account of the order (trade, etc.).

2. If the pair is found then **<code for substitution>** is cut from BrokerRef. The other part of BrokerRef starts from the **<initial code>**.
3. If the pair is not found then the BrokerRef is checked whether it starts with the **prefix** value or not. If it is, then the **prefix** value is cut from the BrokerRef.
4. Otherwise the list of prefixes is checked which appear after substitution at cross trade (**cross_trade_retry_prefixes**). Each prefix in the list is compared with the start of the BrokerRef. If it coincides then the prefix is cut from the BrokerRef.
5. Otherwise the substitution is not performed.

When full code is substituted (**by_prefix=0**) in the beginning of the BrokerRef field the **<code for substitution>** is searched and replaced for the **<initial code>**.

When one-side reverse substitution is set up (**reverse_changes=<exchange name>**) the client code is changed only in the market data which is transmitted from the trading system, and the transactions which are transmitted to the trading system from the QUIK server are not changed. One-side reverse substitution can be set up in the following modes (see section 4):

- Unconditional client code substitution;
- Client code substitution by prefix;
- Client code substitution matching trade account.

3. Setup

3.1 Settings in quik.ini

3.1.1 [data_module] section

- `client_codes_substitute` – client code substitution mode. Valid values:

___ 0 (by default) – disabled;

___ 1 – enabled.

- `client_codes_substitute_file` – path to the file with the client code substitution settings.
- `client_codes_substitute_reload` – mode of client code substitution reload when the file with client code substitution settings is changed (.\codes.ini). It works only when the client code substitution mode is enabled (`client_code_substitute=1`). Valid values:

___ 0 – disabled;

___ 1 (by default) – enabled.

For example:

```
[data_module]
client_codes_substitute=0
client_codes_substitute_file=.\codes.ini
```

3.2 Client code substitution configuration file

The client code substitution configuration file must have the name specified in the **client_codes_substitute_file** setting in the quik.ini configuration file.

3.2.1 [markets] section

- <Exchange name> – comma separated list of class codes.

3.2.2 [<Exchange name>] section

- by_prefix – client code substitution by prefix. Valid values:
 - ___ 0 (by default) – disabled;
 - ___ 1 – enabled.
- prefix – prefix by default.
- by_trdacc – client code substitution matching trade account. Can be used only with by_prefix=1. Valid values:

- ___ 0 (by default) – disabled;
 - ___ 1 – enabled.

- <initial code>=<code for substitution> – unconditional client code substitution.
- <trade account>, <initial code>=<code for substitution> – client code substitution matching trade account (with by_trdacc=1).
- cross_trade_retry_prefixes – list of prefixes which are created as a result of cross trade substitution. Prefixes in the list are separated by commas, spaces are allowed. Cannot be used when the section is set up for one-side reverse client code substitution.
- leave_comment – save the text comment which is entered by user in the Comment box for the market. Valid values:

- ___ 0 (by default) – do not save;
 - ___ 1 – save.

Cannot be used when the section is set up for one-side reverse client code substitution.

- leave_prefix – save the prefix which is replaced in the BrokerRef field. Valid values:
 - ___ 0 – do not save the prefix which is replaced in the BrokerRef field. New prefix substitutes the initial one (see sub-section [4.2.2](#));

___ 1 (by default) – save (see sub-section [4.2.1](#)).

- reverse_changes – the name of the section which contains settings of reverse client code substitution only.

3.2.3 [settings] section

- allow_nosubst – allow orders with client codes which are not specified in the substitution configuration file. Valid values:

___ 0 – reject orders;

___ 1 – allow orders without substitution.

- leave_comment – save the text comment which is entered by user in the Comment box. If the setting is disabled the comment text is not displayed in the tables of orders, trades, etc. Valid values:

___ 0 (by default) – do not save;

___ 1 – save.

The leave_comment setting value in the [<exchange name>] section has higher priority than the leave_comment parameter value in the [settings] sections.

Example of the file:

```
[markets]
MICEX=TQBR,EQNL,TQBS
BROK=BQUOTE,TRANSOUT

[MICEX]
by_prefix=1
prefix=L
by_trdacc=0
E8=W8
cross_trade_retry_prefixes=E2, E4
leave_comment=0
leave_prefix=1
reverse_changes=MicexReverse

[MicexReverse]
16161/=31313/

[BROK]
by_prefix=1
by_trdacc=1
5059404,W1=W9
```

```
cross_trade_retry_prefixes=B
leave_comment=1

[settings]
allow_nosubst=0
leave_comment=0
```

4. Usage examples

4.1 Unconditional client code substitution

Suppose in orders for the EQNL class the 101 client code needs to be substituted by 801.

In the codes.ini configuration file the following settings are specified:

```
[markets]
MICEX=EQNL

[MICEX]
by_prefix=0
101/=801/

[settings]
leave_comment=1
```

When orders for this class are submitted the BrokerRef field is filled in the following way:

```
101/
```

Where 101 is the client code.

The setting prescribes substituting client code 101 by client code 801. As a result the order with the following value of BrokerRef field is submitted in the trading system:

```
801/
```

When the submitted order is received from the trading system the reverse client code substitution is performed. In the Orders table the order is displayed with the following comment:

```
101/
```

If in settings `leave_comment = 0` (or it is not specified) then order comment is the following:

```
101/
```

NOTE: when there is text comment and the `leave_comment` value is 0 the comment is deleted. If the order text comment needs to be saved use the algorithms described in section [Client code substitution by prefix](#) (see sub-section [4.2](#)).

One-side reverse substitution

Suppose in orders for the EQNL class which are transmitted from the trading system to the QUIK server the 802 client code needs to be substituted by 102.

In the `codes.ini` configuration file the following settings are specified:

```
[markets]
MICEX=EQNL

[MICEX]
...
reverse_changes=MICEXREV

[MICEXREV]
by_prefix=0
102/=802/

[settings]
leave_comment=1
```

When the data is received from the trading system the one-side reverse substitution settings prescribe substituting client code 802 by the code 102. As a result in the Orders table the order is displayed with the following comment:

```
102/
```


4.2 Client code substitution by prefix

4.2.1 Algorithm 1

The algorithm is used to add prefix to the client code. The algorithm is used if **leave_prefix** contains 1 (for details see sub-section [3.2](#)).

Suppose in orders which are submitted for the EQBR class prefix 12/ needs to be specified for all the clients excluding the clients whose client code starts with 101.

In the codes.ini configuration file the following settings are specified:

```
[markets]
MICEX=EQBR

[MICEX]
by_prefix=1
prefix=12/
101=13/
leave_prefix=1

[settings]
leave_comment=1
```

When the first order with client code 456 and 'text' comment is submitted the BrokerRef field is filled as follows:

```
456/text
```

Where '456' is the client code and 'text' is the comment.

When the second order with client code 101 and 'anytext' comment is submitted the BrokerRef field is filled as follows:

```
101/anytext
```

Where '101' is the client code and 'anytext' is the comment.

For the first order the pair of codes for substitution are not specified, that is why the default prefix is added to it. The second order corresponds the specified pair of codes, that is why an individual substitution is applied to it. As a result of substitution transactions with the following BrokerRef are submitted in the trading system:

- For the first order:

```
12/456/text
```

- For the second order:

```
13/101/anytext
```

When the submitted orders are received from the trading system in the Orders table for the first order the prefix is unconditionally deleted and for the second order it is deleted because the codes coincide. In the Orders table the orders are displayed with the following comments:

```
456/text  
101/anytext
```

One-side reverse substitution

Suppose in orders for the TQBR class which are transmitted from the trading system to the QUIK server the prefix 44/ needs to be deleted for all clients excluding the clients whose client code starts with 802.

In the codes.ini configuration file the following settings are specified:

```
[markets]  
MICEX=TQBR  
  
[MICEX]  
...  
reverse_changes=MICEXREV  
  
[MICEXREV]  
by_prefix=1  
102/=802/  
prefix=44/  
leave_prefix=1  
  
[settings]  
leave_comment=1
```

When the order with the comment '44/456/text' is received from the trading system the BrokerRef field is filled as follows:

```
456/text
```

When the order with the comment '802/102/text' is received from the trading system the BrokerRef field is filled as follows:

```
102/text
```

When the order with the comment '802/104/text' is received from the trading system the BrokerRef field is filled as follows:

```
802/104/text
```

4.2.2 Algorithm 2

The algorithm is used to replace a client code by a prefix. When this algorithm is applied the existing prefix is not saved in the BrokerRef field, and replaced by a new prefix. The algorithm is used if **leave_prefix** contains 0 (for details see sub-section [3.2](#)).

In this algorithm direct and reverse client code substitution is performed.

1. Direct substitution:

Suppose a client submits an order with client code <A> and comment <C>. If for prefix <A> substitution for prefix is set up then the order with prefix and comment <C> is submitted in the trading system.

2. Reverse substitution:

Suppose server receives an order with client code that contains prefix and comment <C>. If prefix is used as substitution for prefix <A> than prefix is substituted for prefix <A>, and the comment does not change.

Consider the example when in server substitution of prefix '30_10008//TT' with the prohibited symbol '_' for prefix '10008#/' is set up. In the codes.ini configuration file the following settings are specified:

```
[markets]
BQ=BQUOTE, BQUOTE1

[BQ]
30_10008//TT=10008
by_prefix=1
leave_prefix=0
```

```
reverse_changes=CURREV

[CURREV]
104/=804/
by_prefix=1
leave_prefix=0

[settings]
leave_comment=1
allow_nosubst=1
```

If the submitted order has value '30_10008//TT//text' in the BrokerRef field then after the direct substitution the transaction with value '10008//text' in the BrokerRef field is sent to the trading system.

If the received from the trading system trade has value '10008#123' in the BrokerRef field then after the reverse substitution the BrokerRef field will contain '30_10008//TT#123'.

One-side reverse substitution

Suppose in orders for the CETS class which are transmitted from the trading system to the QUIK server the prefix 804/ needs to be replaced by 104/. In the codes.ini configuration file the following settings are specified:

```
[markets]
CURR=CETS

[CURR]
...
reverse_changes=CURREV

[CURREV]
by_prefix=1
leave_prefix=0
104/=804/

[settings]
leave_comment=1
```

If the received from the trading system trade has value '804#123' in the BrokerRef field then after the reverse substitution the BrokerRef field will contain '104#123' according to the settings of one-side reverse substitution.

4.3 Client code substitution matching trade account

Suppose client codes in orders for the TQBS class need to be substituted by different prefixes depending on the trade account in the order.

In the codes.ini configuration file the following example settings are specified:

```
[markets]
MICEX=TQBS

[MICEX]
by_prefix=1
by_trdacc=1
A1,101=11/
A2,101=12/
102=13/

[settings]
allow_nosubst=0
leave_comment=1
```

In the orders for the TQBS class to be submitted BrokerRef is filled as follows:

```
101456/comment      ; and A1 trade account is specified
101789/anytext      ; and A2 trade account is specified
102123/nocomments   ; and A1 trade account is specified
```

For the first order substitution by prefix 11/ is applied, as it is prescribed by the A1 trade account. For the second order substitution by prefix 12/ is applied, because A2 account is specified. The third order is not processed, because the settings prescribe substitution matching trade account by_trdacc=1 and the pair of codes specified does not contain trade account (the left part of the pair does not contain a comma). In this case server records an error message in events.log, and the pair is excluded from further processing. Setting allow_nosubst=0 prescribes rejecting orders which did not pass client code substitution procedure. That is why the third order is rejected by the QUIK server.

As a result of the substitution in the trading system two orders are submitted with the following values in BrokerRef:

```
11/101456/comment    ; and A1 trade account is specified
12/101789/anytext    ; and A2 trade account is specified
```

When the submitted orders are received from the trading system in the Orders table the prefixes are deleted because the code and trade account pairs coincide. In the Orders table the orders are displayed with the following comments:

```
101456/comment  
101101/anytext
```

4.4 Client code substitution by prefix and cross trade

Suppose client codes need to be substituted by prefix and cross trade. For the correct client code substitution setting in codes.ini must match the settings of Limits calculation library (**Clients / Substitute codes** page). For example, in the Limits calculation library settings substitution of prefix 1 by prefix 2 at cross trades is set up. In the codes.ini file the following substitutions are set up:

```
[MICEX]  
by_prefix=1  
by_trdacc=1  
A1,101=11/  
A2,101=12/  
102=13/
```

It means that orders with client codes starting from 11, 12, and 13 are submitted in the trading system. After cross trades execution orders with client codes starting from 21, 22, and 23 correspondingly will be created. For correct client code modification on order receiving all possible variants of prefix which can be created after cross trades must be set.

```
cross_trade_retry_prefixes=21/, 22/, 23/
```

If an order with client code 102 and a counter order with the same code are submitted, then two counter orders with client code 13/102 will be registered in the trading system, and the second one will be rejected. In this case QUIK server changes the prefix 1 of the order which was rejected by prefix 2, and submits the order with client code 23/102 in the trading system, and the trade is created. When the order with client code 23/102 is received from the trading system, the code is changed to 102 based on **the cross_trade_retry_prefixes** setting value.

If in the Limits calculation library the following settings of client code substitution at cross trades are specified:

```
[General]  
CrossTradeRetry=1
```

```
[ChangeClientCodes]
69196=16961
```

then to apply the one-side reverse client code substitution reverse substitution at the QUIK server is enough to be set up in addition to the cross trade settings:

```
[Fond]
...
reverse_changes=FondReverse

[FondReverse]
by_prefix=1
leave_prefix=0
16961=69196
```

4.5 Client code substitution for the Pre-trade control module

Client code is substituted by the algorithm the same as was described in [4.2](#) excepting the following:

1. Exchange name must match the settlement tag;
2. When the data is sent to the Pre-trade control module in the BrokerRef field for all the clients prefix by default is substituted.

Example settings in codes.ini:

```
[markets]
EQTV=CLASS1, CLASS2

[EQTV]
by_prefix=1
prefix=AA_
leave_comment=1
```