

Rules of Engagement

SET-FIX Service

Bogotá, March 2019.

Version 2.0

TEXT OF PROPRIETARY INFORMATION

This document is property of SET-ICAP FX S.A. (SET-ICAP), and is intended to be used exclusively by people involved in the SET-FIX project and may content confidential information. Therefore, the use of confidential information will be strictly followed under the rules of confidentiality that each employee of SET-ICAP must comply.

Table of Contents

1.	Overview	4
2.	LEGAL DISCLAIMER	5
3.	Related documents	6
4.	REQUIRED Application process.....	8
5.	TEST ENVIRONMENT	10
6.	PRODUCTION ENVIRONMENT	11
7.	POTENTIAL FAILOVER EVENTS	12
7.1.	Network Connectivity requirements	12
7.2.	Bandwidth Requirements	12
7.3.	Lost Connections with SET-FIX Server.....	13
7.4.	Security.....	13
8.	PROFILES AND FIX SESSIONS	15
8.1	Number of orders per second.	15
9.	STANDARD OPERATION ISSUES.....	17
9.1.	Before operating on Order Management (OM) or Market Data (MD) sessions ..	17
9.2.	FIX messages that are supported in SET-FIX	17
9.4.	Orders out of price boundaries	18
9.5.	Continuous trading period and required activities	19
9.6.	Avoiding duplicate orders in the system.....	19
9.7.	Closing/Opening period and required activities	19
9.8.	Supported FIX version of the protocol.....	19
9.9.	Intraday Session Resets.....	19
9.10.	Non-supported functionality	20
10.	CONTACTS	21

1. Overview

SET-FIX is the FIX protocol implementation for SET-ICAP FX S.A., developed by *Datatec Systems*, to allow Affiliates to have direct access to the SET-FX System using the FIX standard protocol. **SET-FIX** enables Affiliates to connect, send orders and get market data from the SPOT and NEXT DAY markets using the FIX protocol language. **SET-FIX** supports FIX 5.0 SP2.

This document sets out the main rules regarding technical connectivity, along with the procedures to access **SET-FIX** infrastructure, according to the document “*FIX Specification for Datatec Systems*” (please refer to this document at any time for these specifications). Any modification related to this Rules of Engagement document, or any other related to SET-FIX specifications, will be informed by SET-ICAP.

Any SET-ICAP Affiliate that wishes to connect any FIX development to **SET-FIX** must comply with FIX specifications, setup all their systems according to the guidelines published by SET-ICAP FX S.A. and perform **SET-FIX** Certification Process successfully. Any missing step in this process will result in the Affiliate being restricted to connect to **SET-FIX**.

It is noteworthy to mention that this document will only be applicable for SPOT and NEXT DAY markets (COP/USD), between FX Affiliates known in the Colombian Regulation as *Intermediarios del Mercado Cambiario* (IMC). All regulation stated for these agents will be issued by Banco de la República (Central Bank of Colombia).

2. LEGAL DISCLAIMER

SET-FIX is a new connectivity mechanism provided by SET-ICAP FX S.A. (as from now on “SET-ICAP”). SET-ICAP is not responsible for the quality and performance of the Affiliates FIX implementation throughout this service.

The Affiliate is responsible for implementing its own way to connect to **SET-FIX** by choosing the FIX solution they prefer.

3. Related documents

The following list contains all related documents that will be mentioned in different parts of this rules of engagement as well as a general description of each one:

Ref. 1. FIX Specification for Datatec Systems

This document contains the FIX Protocol Specification (Version 5.0 Service Pack 2) for **SET-FIX** and will be the main guide for software developers.

Ref. 2. “Reglamento Sistema de Negociación y Registro SET-FX”.

All rules and general guidelines for **SET-FIX** services are contained herein. This document will be available on www.set-fx.com.

Ref. 3. “Contrato de provisión de servicio SET-FIX”

This contract has to be signed prior to access SET-FIX service.

Ref. 4. “Circular Reglamentaria SET- ICAP”

This document develops all rules mentioned in SET-FX Regulation and it is mandatory for those users engaged in SET-FX Service.

Ref. 5. “Formato de productos contratados - servicio SET-FIX”

This form must be submitted by affiliates in order to receive a user ID of **SET-FIX** service. This form will be used to keep track of active **SET-FIX** users as well as to keep record of people responsible of its usage.

Ref. 6. Solicitud Ingreso Ambiente de Pruebas y Certificación - Servicio SET-FIX

This form has to be submitted in order to request SET-ICAP access to the Test Environment for **SET-FIX**

Ref. 7. Acceso VPN ambiente de pruebas SET-FIX

This document has to be filled once SET-FX receives the documents where the entity expresses their intention to connect to SET-FIX test environment. This document is oriented to the technical department of each Affiliate in order to give the logic access to the related SET-FIX servers and the access into SET-FIX according to the FIX sessions.

4. REQUIRED Application process

To be a valid **SET-FIX Affiliate**, the following 4-step process has to be completed:

STEP 1: KNOWLEDGE AND UNDERSTANDING. Fully knowledge and understanding of all the documents stated on **3. RELATED DOCUMENTS** will be necessary to start the **SET-FIX** certification process.

Documents will be published by SET-ICAP, and any questions or inquiries regarding the afore-mentioned guidelines, may be addressed to the contacts referenced on this document.

STEP 2: TEST ENVIRONMENT. Once read and understood all documents mentioned in Step 1, the Affiliate must test all its developments under a Test Environment.

In order to get access to the Test Environment, the Affiliate must fill out the form “**Ref. 6 Solicitud Ingreso Ambiente de Pruebas y Certificación - Servicio SET-FIX**” and “**Ref. 7. Acceso VPN ambiente de pruebas SET-FIX**”

SET-ICAP will provide the guidelines to connect to this environment as well as the list of tests that must be performed by Affiliates under the Test Environment. These guidelines will be included in a document called “**SET-FIX Basic Guide for testing**”

STEP 3: CERTIFICATION PROCESS. Once completed Step 2, the Affiliate must schedule with SET-ICAP the Certification Process. This Certification Process will help SET-ICAP to test all FIX applications developed by the Affiliates to ensure that the Affiliate performed successfully all of the certification tests required by SET-ICAP, prior to be connected to production environments.

Once completed and approved the Certification Process, SET-ICAP will issue the **Credentials** (user, password, IP address, ports) to go into Step 4.

STEP 4: PRODUCTION ENVIROMENT. After a successful completion of the Certification Process, the Affiliate that receives the credentials is ready to connect to the production environment and will have direct access to the SET-FX System using the **SET-FIX** Service.

WARNINGS:

The Step 3 above mentioned only refers to the certification tests done by SET-ICAP. On this sense, SET-ICAP would not be responsible of the quality in the internal logic of the Affiliate’s developments or its robustness.

Any new developments made by the Affiliate which are not consented or tested; or skipping any of the above-mentioned steps will imply that the Affiliate must start the whole Certification Process from the beginning.

5. TEST ENVIRONMENT

Layout of the Test Environment

SET-ICAP will provide a Test Environment (as showed in the diagram) with one server that will support tests for any of the three **SET-FIX** sessions:

1. Order Management session (OM).
2. Market Data session (MD).
3. Drop Copy session (DC).

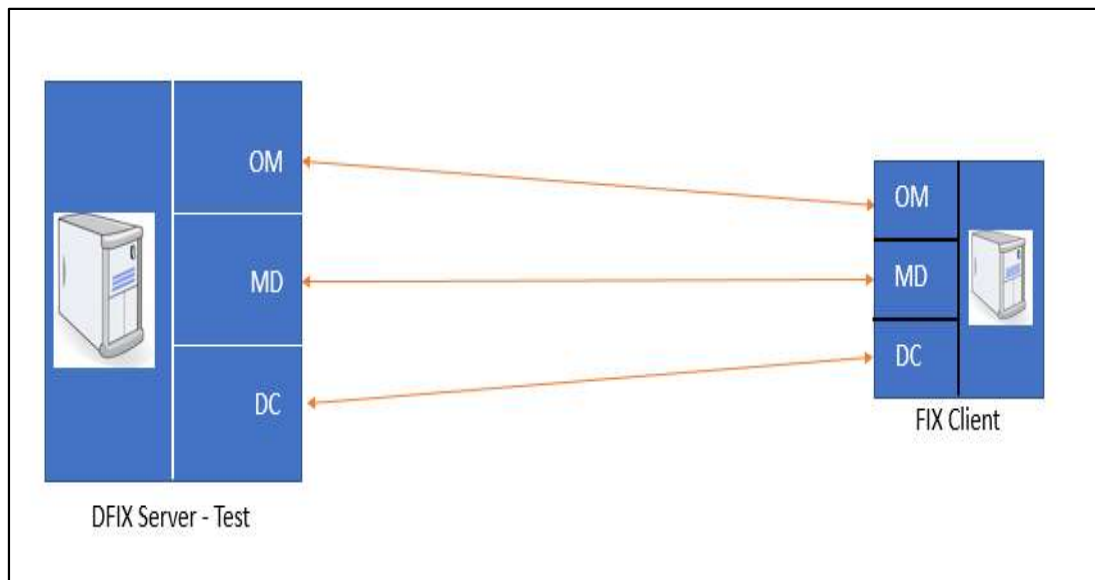


Diagram: connectivity layout for SET-FIX in Test Environment.

6. PRODUCTION ENVIRONMENT

Layout Production Environment

SET-FIX will provide **one dedicated server** for each session type:

1. One server for Order Management Sessions (OM).
2. One server for Market Data sessions (MD).
3. One server for Drop Copy sessions (DC).

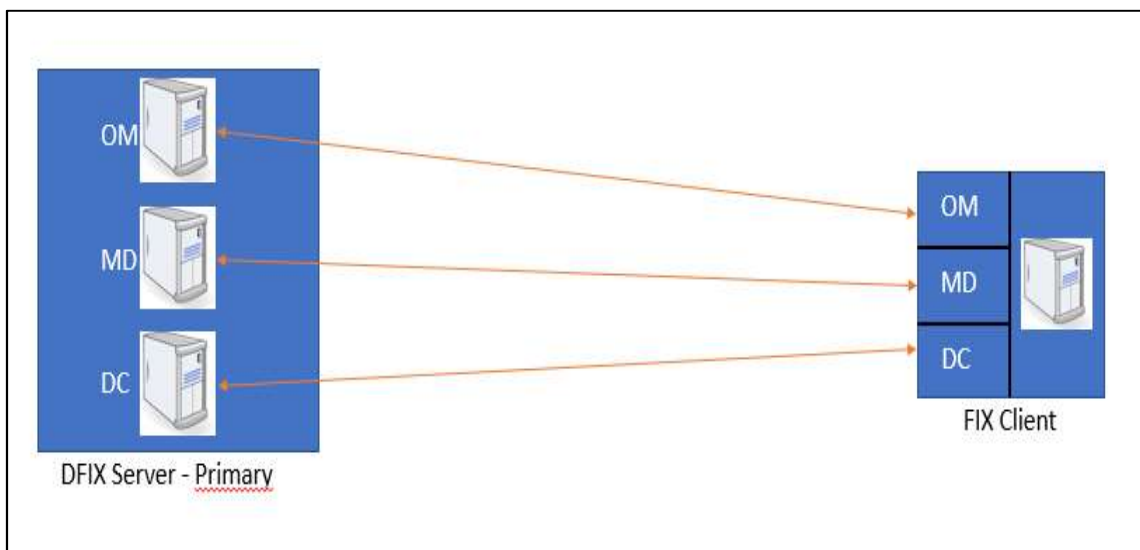


Diagram. Session connectivity layout for SET-FIX in Production.

7. POTENTIAL FAILOVER EVENTS

SET-FIX is designed to provide **alternate servers** for failover situations. Affiliates are responsible to manage the switching of servers accordingly.

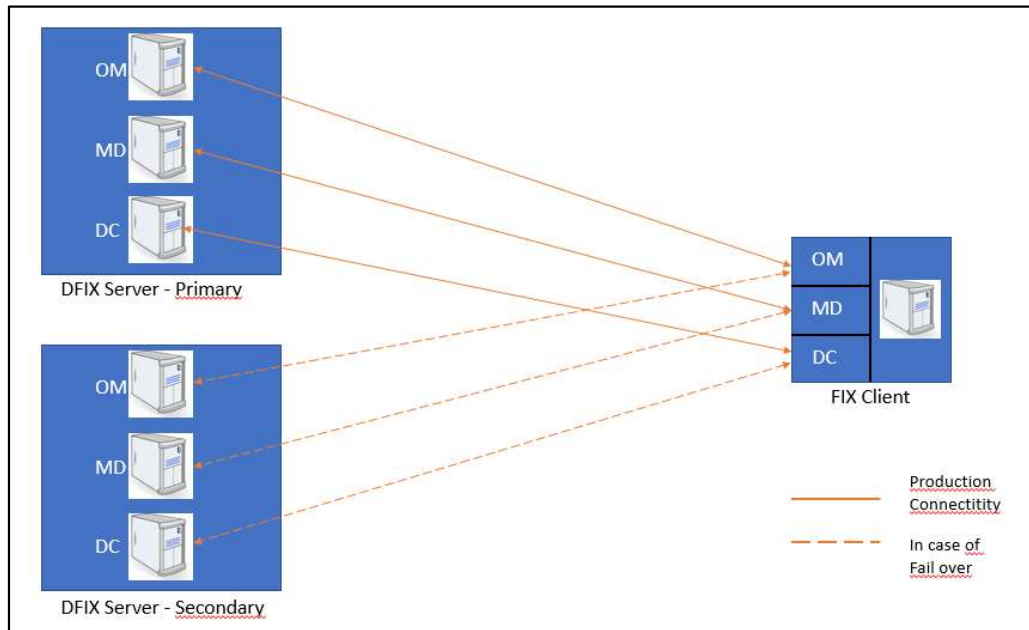


Diagram: Failover layout for SET-FIX.

CONNECTING TO SET-FX (TEST ENVIRONMENT – PRODUCTION ENVIRONMENT)

7.1. Network Connectivity requirements

SET-FIX supports the following connectivity methods:

- **FOR TEST ENVIRONMENT → VPN:** Affiliates may connect using a site-to-site or point-to-site VPN to SET-ICAP data centers **ONLY** for the test environment. As VPN access relies on the internet, delivery of information is not guaranteed. SET-ICAP is not responsible for any problem that this mechanism might cause. Affiliates should connect to the test environment using Client-to-site or site-to-site VPN only.
- **FOR PRODUCTION ENVIRONMENT → Point-to-point:** Affiliates must connect using an exclusive point-to-point connection leased lines.

7.2. Bandwidth Requirements

The bandwidth recommended for each FIX session are:

Order Management	Drop Copy	Drop Copy CCD/AMV	Market Data
1024 kbps	2048 kbps	1536 kbps	1024 kbps

Notice: Affiliates using FIX protocol must be aware that network traffic throughout FIX sessions could consume bandwidth that might affect performance for other applications.

The Affiliate is free to decide if they need additional bandwidth in order to reduce the impact in performance of their systems.

7.3. Lost Connections with SET-FIX Server

If any **SET-FIX** user loses connection, it must always try first to reestablish connection with the same main server before trying to connect to the alternate server.

7.4. Security

Once the Affiliate's FIX Session is certified, it must comply with all the information security aspects as described on sections 3 and 4 of this document.

It is recommended that the Affiliate implements protection devices on its network, at least one firewall within the segment in which the FIX Gateway is located at. In any case every Affiliate using SET-FIX service must comply with the Cybersecurity and Information Security regulation issued by the Financial Superintendence.

In addition, it is recommended that the server where Affiliate's FIX Gateway is running is exclusively used for FIX sessions. Each Affiliate must take the necessary measures to protect its computer infrastructure with the appropriate mechanisms, such as, antivirus, intrusion detection systems, proxies, etc.

The local area network (LAN) in the facilities of each client must comply with the following minimum characteristics:

- UTP Cabling 5e or higher (duly certified).
- LAN segment speed 10/100/1000 Mbps.
- Switches must be used instead of hubs in the LAN (Local Area Network) in order to avoid data collision.

It is recommended that the internal connection in the Affiliate has a switch for the main channel and another switch as a backup channel; this reduces the risk of having single points of failure at the level of physical devices.

8. PROFILES AND FIX SESSIONS

The following chart shows the messages that can be sent or received by an Affiliate, according to the session:

Session	Messages you can manage
Order Management (OM)	Order Management messages
	Reference Data Messages
Market Data (MD)	Market Data Messages
	Reference Data Messages
Drop Copy (DC)	Receive ER owned by brokers same firm
	Trade Capture Reporting messages

Notice: Any FIX session must complete the certification process successfully before being connected to the production environment of SET-FX System.

8.1 Number of orders per second.

SET-FIX is designed to support a high number of orders and messages per second. When using order entry on **SET-FIX**, Affiliate's FIX protocol infrastructure might be sending a high number of orders that could exceed the maximum number of orders established by SET-ICAP.. Thus, in order to avoid performance issues on **SET-FIX**, Affiliate's FIX OM Session must not exceed the number of order messages per second established by SET-ICAP according to the following guidelines:

- Maximum limit of orders per second: 25 either on a random peak or on a continuous basis.

Notice: if the number of orders exceeds the above limit and is below 999, orders in excess will be queued and processed according to the availability of the order management service in SET-FIX.

If the number of messages queued for an individual OM FIX session exceeds 999 messages, the system will execute the following steps:

- a) The Affiliate's FIX session will be terminated.
- b) Every queued message will be written on a messages log but will not be processed.
- c) Every queued message will be deleted.

d) A message will be displayed on the FIX GW log to let the user know that a group of queued messages was deleted.

Notice:

- I. Whereas an order is sent to the System but it is not traded and causes the best bid price of the market to be higher than the best offer price of the market, the order must be removed immediately and automatically by the OM FIX Session.
- II. Likewise whereas an order is sent to the System but it is not traded and causes the best offer price of the market to be lower than the best bid price of the market, the order must be removed immediately and automatically by the OM FIX Session.

Warning: *If the OM FIX Session does not withdraw the order automatically, or the FIX administrator identifies any situation in which the OM FIX Session behavior results in any of the above mentioned situations, SET-FX administrator could disable or block the FIX Session immediately.*

9. STANDARD OPERATION ISSUES

At this stage, just the following markets will be supported by the SET-FIX mechanism.

- Dollar SPOT
- Dollar NEXT DAY

9.1. Before operating on Order Management (OM) or Market Data (MD) sessions

Before starting any messaging through these OM or MD sessions, each Affiliate **must** first send a message to **SET-FIX** server requesting the markets they want to have access.

To do so, the Affiliate must use the *MarketDefinitionRequest* message. The system will send back a Market Definition (35=BU) message for each SET-FX market in which the Affiliate is authorized to participate. Please refer to the *FIX Specification for Datatec Systems* for more details.

WARNING.

Please be aware that SET-FIX won't let you interchange any further messages in the sessions mentioned above until the action specified above is performed.

9.2. FIX messages that are supported in SET-FIX

The following charts summarize the type of messages supported by **SET-FIX** Service. Any non-supported messages that are received by **SET-FIX** will be rejected with a Business Message Reject message, with tag *BusinessRejectReason* (380) = 3 (unsupported message type).

SET-FIX supports the following FIX messages derived from version 5.0 SP2 of the protocol. This is an illustrative summary of the detailed scope in the *FIX Specification for Datatec Systems*:

MESSAGE SUMMARY

Session Messages	MsgType	Sent by SET-FIX	Received by SET-FIX
Heartbeat	0	•	•
Test Request	1	•	•
Resend Request	2	•	•
Reject	3	•	•
Sequence Reset	4	•	•
Logout	5	•	•
Logon	A	•	•
BusinessMessageReject	j	•	

Order Management Messages	MsgType	Sent by SET-FIX	Received by SET-FIX
New Order Single	D		•
Order Cancel Request	F		•
Order Cancel Replace Request	G		•
Order Cancel Reject	9	•	
Execution Report	8	•	
OrderMassActionRequest	CA		•
OrderMassActionReport	BZ	•	
OrderStatusRequest	H		•

Market Data Messages	MsgType	Sent by SET-FIX	Received by SET-FIX
Market Data Request	V		•
Market Data Snapshot Full Refresh	W	•	
Market Data Incremental	X	•	
Market Data Request Reject	Y	•	

Reference Data Messages	MsgType	Sent by SET-FIX	Received by SET-FIX
Market Definition Request	BT		•
Market Definition Refresh	BU	•	
MarketDefinitionUpdateReport	BV	•	
PartyRiskLimitsRequest	CL		•
PartyRiskLimitsReport	CM	•	
PartyRiskLimitsUpdateReport	CR	•	

Post Trade Messages	MsgType	Sent by SET-FIX	Received by SET-FIX
TradeCaptureReportRequest	AD		•
TradeCaptureReport	AE	•	•
TradeCaptureReportRequestAck	AQ	•	
TradeCaptureReportAck	AR	•	

SET-FIX only supports **Limit** order types.

9.4. Orders out of price boundaries

Orders received by SET-FIX with prices that are above the HIGH or below the LOW allowed price range, will be rejected.

9.5. Continuous trading period and required activities

SET-FIX affiliates are always responsible to comply with all documents involved by FIX Protocol Mechanisms; to that extent, any breach of the requirements regarding connection, numbers of orders per second or connectivity requirements, among others, will be full responsibility of the Affiliate and could lead to the disconnection of the FIX session.

9.6. Avoiding duplicate orders in the system

According to the SET-FIX Specification, every order message sent to the System has response. In consequence, Affiliates must be sure of processing every response before trying to resend any message.

9.7. Closing/Opening period and required activities

When the market closes, all pending orders are automatically removed from the System.

Affiliates will receive Execution Reports Messages (ER) on their Drop Copy sessions (DC).

- SET-FIX service starts to receive sessions every day at 7:00 a.m. and messages at 8:00 a.m. Weekends and holidays SET-FIX service will not be available
- SET-FIX service will shut down at 7:00 p.m. every day. All Affiliates must close all active SET-FIX Sessions before that time.

9.8. Supported FIX version of the protocol

FIX 5.0 SP2 is the protocol used by **SET-FIX**. Affiliates will have to follow *FIX Specification for Datatec Systems* for more specification and requirements.

9.9. Intraday Session Resets

Intraday Session Reset messages are not supported in this version of the **SET-FIX** architecture.

9.10. Non-supported functionality

Multiple subscriptions to Market Data in the same Market Data (MD) session are not allowed.

9.11. Market Data entry full depth considerations

For each entry row in either side of the book (bid/offer), be aware of the tag 1070 (MDQuoteType) which indicates whether that specific order is or not tradable. This information will prevent any OM FIX Session from sending orders that would either be rejected or left exposed in the book.

Warning: every OM FIX Session must ensure that it keeps from trading orders from the same company where it belongs.

10. CONTACTS

For any inquiries regarding any steps of the process, please refer to:

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