



## BOLTPPLUS Connectivity

### Manual

Version 1.9

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## 1 Introduction

As an Exchange Participant, you have a range of alternatives to connect to our markets. BSE Exchange interfaces offer hardware independence, high levels of customization and flexibility. Our portfolio of connectivity alternatives is designed to meet the needs of a variety of users, from low-latency program trading users to cliental trading business models. With this broad offering, you can select which connectivity solution best suits your individual needs. Every business user has different needs, we designed a customized approach to ensure that you can choose the connectivity alternatives based on your unique business needs.

The sections below describe the Interactive interface and various market data interfaces that is offered to the market participants.

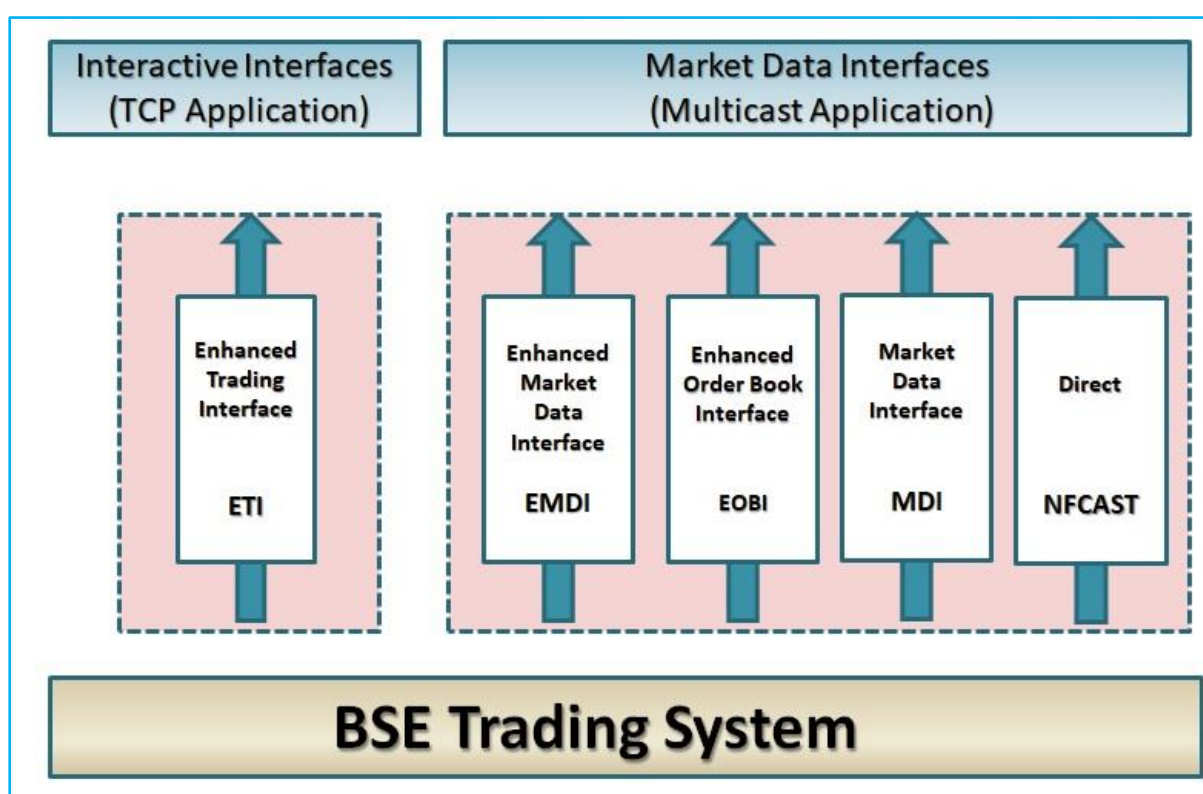


Figure 1: Trading Interface landscape

## 2 Interactive Interfaces

BSE offers only one interactive interface to connect to BOLTPLUS system. The interface is platform independent and offers wide flexibility in terms of implementation. **The legacy IML interface supported by exchange is discontinued.**

## 2.1 BSE Enhanced Trading Interface (BSE ETI)

The BSE ETI is the high-performance, low-latency trading interface designed for Participants that require optimal performance and customization. This interface supports full trading functionality, drop copy and risk alerts. The communication supported in this interface is in binary format.

The ETI is an asynchronous message-based interface. A connection between participants and exchange is established via a TCP/IP connection. The interface is session oriented. A session is established between the participants' machine and ETI gateway.

In order to establish a session with a trading gateway, a TCP/IP connection to a connection gateway must be established first. The connection gateway provides the connection parameters for the assigned primary and secondary gateway to be used for trading purposes. The connectivity to exchange is a 3-step process and the process is described below

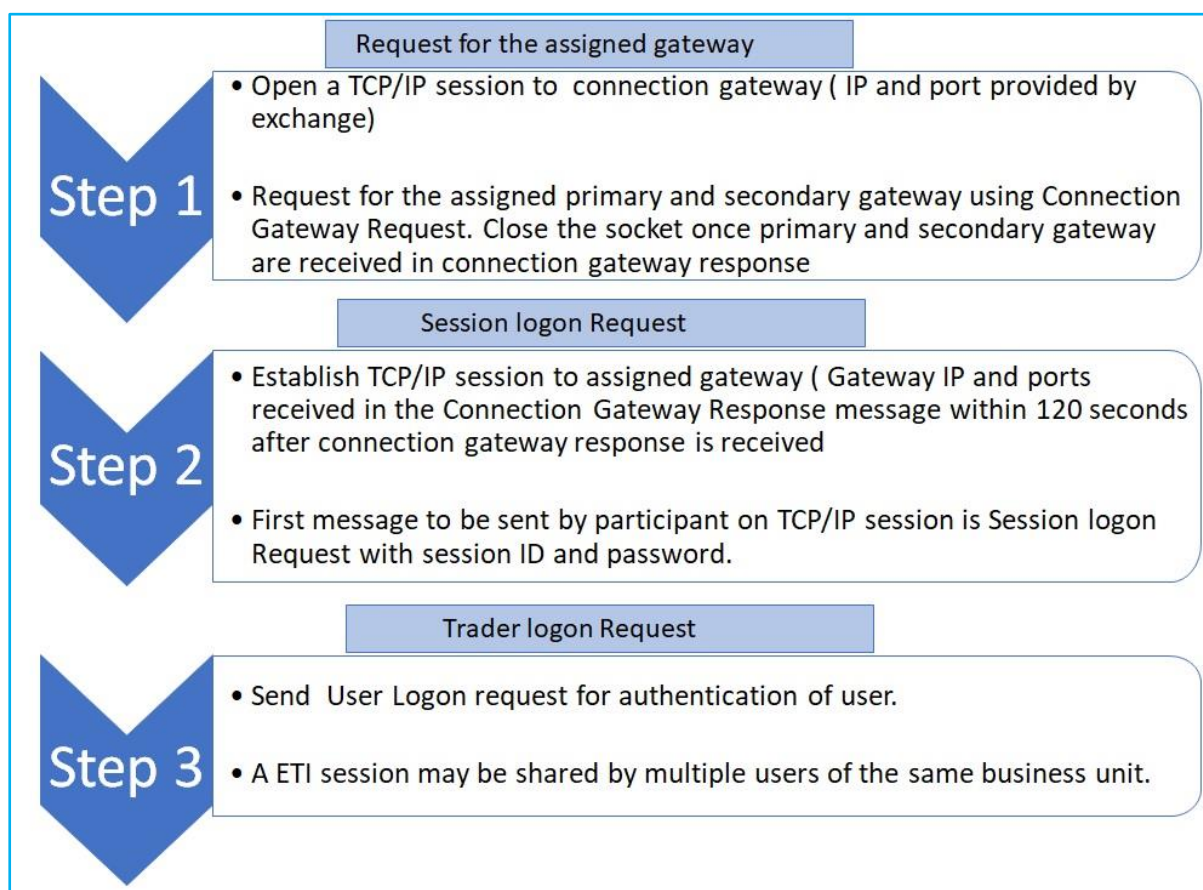


Figure 2: The TCP/IP connection flow of ETI connection

The gateway infrastructure of BSE is built redundantly with set of gateways including a connection gateway, trading gateways for low frequency (LF) sessions and trading gateways for high frequency (HF) sessions.

For each Session ID a pair of primary and secondary gateway remains constant every day. The pair of gateways are provided to each session in the Connection Gateway Response message. Though the pair remains constant the member application cannot directly connect to primary or secondary gateway. The first connection is mandatorily required to be made to the connection gateway IP published by the exchange.

The pair of primary and secondary gateway may remain constant however periodically, exchange does redistribution of connections on gateways based on the load thus the pair of primary and secondary gateway may or may not change after redistribution.

It is highly recommended that the provision for all gateways are made in member network based on the routes provided in the range provided in the section [Routes](#)

## 3 Market Data Streams

BSE support broadly two category of market data interfaces which are designed for low bandwidth client and high bandwidth clients.

### 3.1 Low Bandwidth Interfaces

The low bandwidth interfaces include market data interfaces whose bandwidth consumption is capped by exchange to less than 2MBPS. These interfaces provide netted price level data only. They include the following interfaces

#### 3.1.1 BSE Market Data Interface (MDI)

This interface provides netted price level aggregated market data using multicast technology. The data is in FAST FIX format. The data for all partitions are provided on same feed.

#### 3.1.2 BSE Direct NFOCAST

This interface provides netted price level aggregated market data using multicast technology. The data is in proprietary binary format. The data for all partitions are provided on same feed.

### 3.2 High Bandwidth Interfaces

The high bandwidth interfaces include market data interfaces whose bandwidth consumption is not capped by exchange and it varies from 10 MBPS to 200 MBPS. The feeds are provided partition wise. Each partition will be sent on one set of feed only. These interfaces provide un-netted price level data. They include the following interfaces

#### 3.2.1 BSE Enhanced Market Data Interface (EMDI)

This interface provides un-netted price level aggregated market data using multicast technology. The un-netted data is for a defined price level only. The data is in FAST FIX format.

### 3.2.2 BSE Enhanced Order Book Interface (EOBI)

This interface provides every visible order in the order book i.e., tick by tick update is sent in this stream of market data. Most of the functional concepts are like EMDI, however the data is sent in the proprietary binary format.

## 3.3 Reference Data Interface

### 3.3.1 BSE Reference Data Interface (RDI)

This interface provides reference data or the master through multicast channel. The data is continuously published on the channel throughout the day. The reference data is also provided through master data file at EOD.

### 3.4 Comparison Between market data streams:

Attributes	EOBI	EMDI	MDI	Direct NFOCAST
<b>Price Level</b>	Full depth	Depth up to configured level (5 Level)	Depth up to configured level (5 Level)	5 level
<b>Price level Aggregation</b>	Every tick is sent as individual update	Unnetted but price level aggregated	Netted Price level aggregated	Netted Price level aggregated
<b>Format</b>	Binary	FAST	FAST	Binary
<b>Bandwidth</b>	High (Approx. 230 MBPS)	High (Approx. 50 MBPS)	Low (Approx. 2.5 MBPS)	Low (Approx. 2.5 MBPS)
<b>Usage</b>	Algorithmic trading	Algorithmic trading	Used for Terminal based trading application	Used for Terminal based trading application
<b>Recovery</b>	The current pending order book is replayed & should be read again to build the book	The current snapshot up to the configured level is replayed in a separate stream and should be used in case of missed packets	The current snapshot up to the configured level is replayed at regular interval and should be used in case of missed packets	Every update sent is a complete snapshot of 5 level order book, so no separate recovery is required
<b>Availability</b>	Only in BSE Colocation	All networks	All networks	All networks
<b>Composition</b>	Partition wise feed	Partition wise feed	Single feed for all partitions	Single feed for all partitions.

## 4 Routes

In order to have network reachability to each of the connectivity described in the document, necessary routes need to be configured in the client network. Below the routes recommended by exchange to be configured in the client network.

### 4.1 Routes

Segment	Primary Site	DR site	Simulation
<b>EQUITY</b>	<b>Interactive</b>  10.255.255.1/24  Port: 12906 to 12920  Port: 15906 to 15920  <b>Market Data</b>  137.75.1.1/16	<b>Interactive</b>  10.255.241.1/24  Port: 12906 to 12920  <b>Market Data</b>  138.75.1.1/16	<b>Interactive</b>  10.255.254.1/24  Port: 11406 to 11420  <b>Market Data</b>  137.74.1.1/16
<b>EQUITY DERIVATIVES</b>	<b>Interactive</b>  10.255.255.1/24  Port: 15906 to 15920  Port: 15906 to 15920  <b>Market Data</b>  137.75.1.1/16	<b>Interactive</b>  10.255.241.1/24  Port: 15906 to 15920  <b>Market Data</b>  138.75.1.1/16	<b>Interactive</b>  10.255.254.1/24  Port: 12406 to 12420  <b>Market Data</b>  137.74.1.1/16
<b>EQUITY SHORTAGE AUCTION</b>	10.1.101.36 Port: 1001	10.1.101.194 Port:1001	10.1.101.105 Port:1000
<b>CURRENCY DERIVATIVES</b>	<b>Interactive</b>  10.255.255.1/24  Port: 10906 to 10920  <b>Market Data</b>	<b>Interactive</b>  10.255.241.1/24  Port: 10906 to 10920  <b>Market Data</b>	<b>Interactive</b>  10.255.254.1/24  Port: 10406 to 10420  <b>Market Data</b>



	137.75.1.1/16	138.75.1.1/16	137.75.1.1/16
<b>COMMODITY DERIVATIVES &amp; ELECTRONIC GOLD RECIPTS (EGR)</b>	<b>Interactive</b>  10.255.255.1/26  Port: 14906 to 14920  <b>Market Data</b>  137.75.1.1/16	<b>Interactive</b>  10.255.241.1/26  Port: 14906 to 14920  <b>Market Data</b>  138.75.1.1/16	<b>Interactive</b>  10.255.254.1/26  Port: 15406 to 15420  <b>Market Data</b>  137.75.1.1/16
<b>Additional Route for members having servers in BSE Colocation</b>	Interactive  10.255.253.1/24  Port: 15906 to 15920  Port: 10906 to 10920  Port: 14906 to 14920  Port: 12906 to 12920  <b>Market Data</b>  10.255.225.1/24	Not applicable	Not applicable

It is highly recommended that the client should allow the above-mentioned routes in their **network**. The subnet is kept wide enough to provision any new server in future that will be incorporated in the exchange farm **without impacting the settings done at client side**. Also note that the exchange may add a new server in the defined range without prior intimation as well.

## 5 Connection Parameters

The Various Connection parameter for Interactive and market data feed is mentioned below. The Below section provides all the parameters associated with trading and various set-up such Production, Simulation and Disaster Recovery.

5.1 Production: Equity

Interactive Interfaces				Reference Data Interface																								
<div>Connection Gateway</div> <table><tr><td></td><td>Host IP</td><td>Port</td></tr><tr><td>Primary</td><td>10.255.255.6</td><td>12908</td></tr><tr><td>Secondary</td><td>10.255.255.7</td><td>12908</td></tr></table>					Host IP	Port	Primary	10.255.255.6	12908	Secondary	10.255.255.7	12908	<div>RDI</div> <table><tr><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td>227.0.0.11</td><td>227.0.0.12</td><td>227.0.0.13</td><td>227.0.0.14</td></tr><tr><td>12984</td><td>12985</td><td>12986</td><td>12987</td></tr></table>				Incremental		Snapshot		227.0.0.11	227.0.0.12	227.0.0.13	227.0.0.14	12984	12985	12986	12987
					Host IP	Port																						
				Primary	10.255.255.6	12908																						
				Secondary	10.255.255.7	12908																						
Incremental		Snapshot																										
227.0.0.11	227.0.0.12	227.0.0.13	227.0.0.14																									
12984	12985	12986	12987																									
Market Data Interfaces ( Low Bandwidth)																												
<div>MDI</div> <table><tr><td>Service A</td><td>Service B</td></tr><tr><td>227.0.0.19</td><td>227.0.0.20</td></tr><tr><td>12994</td><td>12995</td></tr></table>		Service A	Service B	227.0.0.19	227.0.0.20	12994	12995	<div>NFCAST</div> <table><tr><td>Equity</td></tr><tr><td>227.0.0.21</td></tr><tr><td>12996</td></tr></table>		Equity	227.0.0.21	12996																
		Service A	Service B																									
		227.0.0.19	227.0.0.20																									
		12994	12995																									
Equity																												
227.0.0.21																												
12996																												
Market Data Interfaces ( High Bandwidth)																												
<div>EMDI</div>		Incremental		Snapshot																								
		Service A	Service B	Service A	Service B																							
	Partition 1	227.0.0.23	227.0.0.24	227.0.0.25	227.0.0.26																							
		12923	12924	12925	12926																							
	Partition 2	227.0.0.27	227.0.0.28	227.0.0.29	227.0.0.30																							
		12927	12928	12929	12930																							
	Partition 3	227.0.0.31	227.0.0.32	227.0.0.33	227.0.0.34																							
		12931	12932	12933	12934																							
	Partition 4	227.0.0.35	227.0.0.36	227.0.0.37	227.0.0.38																							
		12935	12936	12937	12938																							
Indices	227.0.0.15	227.0.0.16	--	--																								
	12915	12916	--	--																								
<div>EOBI</div>		Incremental		Snapshot																								
		Service A	Service B	Service A	Service B																							
	Partition 1	237.0.0.1	237.0.0.2	237.0.0.3	237.0.0.4																							
		12901	12902	12903	12904																							
	Partition 2	237.0.0.5	237.0.0.6	237.0.0.7	237.0.0.8																							
		12905	12906	12907	12908																							
	Partition 3	237.0.0.9	237.0.0.10	237.0.0.11	237.0.0.12																							
		12909	12910	12911	12912																							
	Partition 4	237.0.0.13	237.0.0.14	237.0.0.15	237.0.0.16																							
		12913	12914	12915	12916																							

Interactive Interfaces				Reference Data Interface																																																																																														
<div>Connection Gateway</div> <table><tr><td></td><td>Host IP</td><td>Port</td></tr><tr><td>Primary</td><td>10.255.255.46</td><td>15908</td></tr><tr><td>Secondary</td><td>10.255.255.47</td><td>15908</td></tr></table>					Host IP	Port	Primary	10.255.255.46	15908	Secondary	10.255.255.47	15908	<div>RDI</div> <table><tr><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td>228.0.0.3</td><td>228.0.0.4</td><td>228.0.0.5</td><td>228.0.0.6</td></tr><tr><td>15903</td><td>15904</td><td>15905</td><td>15906</td></tr></table>				Incremental		Snapshot		228.0.0.3	228.0.0.4	228.0.0.5	228.0.0.6	15903	15904	15905	15906																																																																						
					Host IP	Port																																																																																												
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15903	15904	15905	15906																																																																																															
Market Data Interfaces ( Low Bandwidth)																																																																																																		
<div>MDI</div> <table><tr><td>Service A</td><td>Service B</td></tr><tr><td>228.0.0.7</td><td>228.0.0.8</td></tr><tr><td>15907</td><td>15908</td></tr></table>			Service A	Service B	228.0.0.7	228.0.0.8	15907	15908	<div>NFCAST</div> <table><tr><td>Equity Derivatives</td></tr><tr><td>228.0.0.1</td></tr><tr><td>15901</td></tr></table>					Equity Derivatives	228.0.0.1	15901																																																																																		
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<div>EMDI</div> <table><tr><td rowspan="2"></td><td rowspan="2"></td><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td>Service A</td><td>Service B</td><td>Service A</td><td>Service B</td></tr><tr><td rowspan="2">Partition 1</td><td>228.0.0.13</td><td>228.0.0.14</td><td>228.0.0.15</td><td>228.0.0.16</td></tr><tr><td>15913</td><td>15914</td><td>15915</td><td>15916</td></tr><tr><td rowspan="2">Partition 2</td><td>228.0.0.17</td><td>228.0.0.18</td><td>228.0.0.19</td><td>228.0.0.20</td></tr><tr><td>15917</td><td>15918</td><td>15919</td><td>15920</td></tr><tr><td rowspan="2">Partition 3</td><td>228.0.0.21</td><td>228.0.0.22</td><td>228.0.0.23</td><td>228.0.0.24</td></tr><tr><td>15921</td><td>15922</td><td>15923</td><td>15924</td></tr><tr><td rowspan="2">Partition 4</td><td>228.0.0.25</td><td>228.0.0.26</td><td>228.0.0.27</td><td>228.0.0.28</td></tr><tr><td>15925</td><td>15926</td><td>15927</td><td>15928</td></tr><tr><td rowspan="2">Partition 5</td><td>228.0.0.29</td><td>228.0.0.30</td><td>228.0.0.31</td><td>228.0.0.32</td></tr><tr><td>15929</td><td>15930</td><td>15931</td><td>15932</td></tr><tr><td rowspan="2">Partition 6</td><td>228.0.0.33</td><td>228.0.0.34</td><td>228.0.0.35</td><td>228.0.0.36</td></tr><tr><td>15933</td><td>15934</td><td>15935</td><td>15936</td></tr><tr><td rowspan="2">Partition 7</td><td>228.0.0.37</td><td>228.0.0.38</td><td>228.0.0.39</td><td>228.0.0.40</td></tr><tr><td>15937</td><td>15938</td><td>15939</td><td>15940</td></tr><tr><td rowspan="2">Partition 8</td><td>228.0.0.41</td><td>228.0.0.42</td><td>228.0.0.43</td><td>228.0.0.44</td></tr><tr><td>15941</td><td>15942</td><td>15943</td><td>15944</td></tr><tr><td rowspan="2">Others</td><td>228.0.0.9</td><td>228.0.0.10</td><td>--</td><td>--</td></tr><tr><td>15909</td><td>15910</td><td>--</td><td>--</td></tr></table>										Incremental		Snapshot		Service A	Service B	Service A	Service B	Partition 1	228.0.0.13	228.0.0.14	228.0.0.15	228.0.0.16	15913	15914	15915	15916	Partition 2	228.0.0.17	228.0.0.18	228.0.0.19	228.0.0.20	15917	15918	15919	15920	Partition 3	228.0.0.21	228.0.0.22	228.0.0.23	228.0.0.24	15921	15922	15923	15924	Partition 4	228.0.0.25	228.0.0.26	228.0.0.27	228.0.0.28	15925	15926	15927	15928	Partition 5	228.0.0.29	228.0.0.30	228.0.0.31	228.0.0.32	15929	15930	15931	15932	Partition 6	228.0.0.33	228.0.0.34	228.0.0.35	228.0.0.36	15933	15934	15935	15936	Partition 7	228.0.0.37	228.0.0.38	228.0.0.39	228.0.0.40	15937	15938	15939	15940	Partition 8	228.0.0.41	228.0.0.42	228.0.0.43	228.0.0.44	15941	15942	15943	15944	Others	228.0.0.9	228.0.0.10	--	--	15909	15910	--	--
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									15929	15930	15931	15932																																																																																						
								Partition 6	228.0.0.33	228.0.0.34	228.0.0.35	228.0.0.36																																																																																						
									15933	15934	15935	15936																																																																																						
								Partition 7	228.0.0.37	228.0.0.38	228.0.0.39	228.0.0.40																																																																																						
									15937	15938	15939	15940																																																																																						
								Partition 8	228.0.0.41	228.0.0.42	228.0.0.43	228.0.0.44																																																																																						
									15941	15942	15943	15944																																																																																						
								Others	228.0.0.9	228.0.0.10	--	--																																																																																						
15909	15910	--	--																																																																																															

EOBI		Incremental		Snapshot	
		Service A	Service B	Service A	Service B
	Partition 1	238.0.0.1	238.0.0.2	238.0.0.3	238.0.0.4
		15901	15902	15903	15904
	Partition 2	238.0.0.5	238.0.0.6	238.0.0.7	238.0.0.8
		15905	15906	15907	15908
	Partition 3	238.0.0.9	238.0.0.10	238.0.0.11	238.0.0.12
		15909	15910	15911	15912
	Partition 4	238.0.0.13	238.0.0.14	238.0.0.15	238.0.0.16
		15913	15914	15915	15916
	Partition 5	238.0.0.17	238.0.0.18	238.0.0.19	238.0.0.20
		15917	15918	15919	15920
	Partition 6	238.0.0.21	238.0.0.22	238.0.0.23	238.0.0.24
		15921	15922	15923	15924
	Partition 7	238.0.0.25	238.0.0.26	238.0.0.27	238.0.0.28
		15925	15926	15927	15928
	Partition 8	238.0.0.29	238.0.0.30	238.0.0.31	238.0.0.32
		15929	15930	15931	15932

Interactive Interfaces				Reference Data Interface				
Connection Gateway		Host IP	Port	RDI	Incremental		Snapshot	
	Primary	10.255.255.13	10908		229.0.0.11	229.0.0.12	229.0.0.13	229.0.0.14
	Secondary	10.255.255.12	10908		10984	10985	10986	10987

Market Data Interfaces ( Low Bandwidth)						
MDI	Service A	Service B		NFCAST	Currency	
	229.0.0.19	229.0.0.20			229.0.0.21	
	10994	10995			10996	

Market Data Interfaces ( High Bandwidth)					
EMDI		Incremental		Snapshot	
		Service A	Service B	Service A	Service B
		229.0.0.23	229.0.0.24	229.0.0.25	229.0.0.26
	Partition 1	10923	10924	10925	10926

EOBI		Incremental		Snapshot	
		Service A	Service B	Service A	Service B
		236.0.0.1	236.0.0.2	236.0.0.3	236.0.0.4
	Partition 1	10901	10902	10903	10904

5.4 Production: Commodities Derivatives & Electronic Gold Receipts (EGR)

Interactive Interfaces				Reference Data Interface				
Connection Gateway		Host IP	Port	RDI	Incremental		Snapshot	
	Primary	10.255.255.12	14908		229.0.0.69	229.0.0.70	229.0.0.71	229.0.0.72
	Secondary	10.255.255.13	14908		14969	14970	14971	14972
Market Data Interfaces ( Low Bandwidth)								
MDI	Service A	Service B		NFCAST	Commodity	EGR		
	229.0.0.67	229.0.0.68			229.0.0.65	229.0.0.66		
	14967	14968			14965	14966		
Market Data Interfaces ( High Bandwidth)								
EMDI		Incremental		Snapshot				
	Partition 1	Service A	Service B	Service A	Service B			
		229.0.0.73	229.0.0.74	229.0.0.75	229.0.0.76			
		14973	14974	14975	14976			

Interactive Interfaces				Reference Data Interface																																																									
<div>Connection Gateway</div> <table><tr><td></td><td>Host IP</td><td>Port</td></tr><tr><td>Primary</td><td>10.255.241.10</td><td>12908</td></tr><tr><td>Secondary</td><td>10.255.241.11</td><td>12908</td></tr></table>					Host IP	Port	Primary	10.255.241.10	12908	Secondary	10.255.241.11	12908	<div>RDI</div> <table><tr><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td>227.0.0.11</td><td>227.0.0.12</td><td>227.0.0.13</td><td>227.0.0.14</td></tr><tr><td>12984</td><td>12985</td><td>12986</td><td>12987</td></tr></table>				Incremental		Snapshot		227.0.0.11	227.0.0.12	227.0.0.13	227.0.0.14	12984	12985	12986	12987																																	
					Host IP	Port																																																							
				Primary	10.255.241.10	12908																																																							
				Secondary	10.255.241.11	12908																																																							
Incremental		Snapshot																																																											
227.0.0.11	227.0.0.12	227.0.0.13	227.0.0.14																																																										
12984	12985	12986	12987																																																										
Market Data Interfaces ( Low Bandwidth)																																																													
<div><div><div>MDI</div><table><tr><td>Service A</td><td>Service B</td></tr><tr><td>227.0.0.19</td><td>227.0.0.20</td></tr><tr><td>12994</td><td>12995</td></tr></table></div><div><div>NFCAST</div><table><tr><td>Equity</td></tr><tr><td>227.0.0.21</td></tr><tr><td>12996</td></tr></table></div></div>				Service A	Service B	227.0.0.19	227.0.0.20	12994	12995	Equity	227.0.0.21	12996																																																	
Service A	Service B																																																												
227.0.0.19	227.0.0.20																																																												
12994	12995																																																												
Equity																																																													
227.0.0.21																																																													
12996																																																													
Market Data Interfaces ( High Bandwidth)																																																													
<div>EMDI</div> <table><tr><td rowspan="2"></td><td></td><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td></td><td>Service A</td><td>Service B</td><td>Service A</td><td>Service B</td></tr><tr><td rowspan="2">Partition 1</td><td>227.0.0.23</td><td>227.0.0.24</td><td>227.0.0.25</td><td>227.0.0.26</td></tr><tr><td>12923</td><td>12924</td><td>12925</td><td>12926</td></tr><tr><td rowspan="2">Partition 2</td><td>227.0.0.27</td><td>227.0.0.28</td><td>227.0.0.29</td><td>227.0.0.30</td></tr><tr><td>12927</td><td>12928</td><td>12929</td><td>12930</td></tr><tr><td rowspan="2">Partition 3</td><td>227.0.0.31</td><td>227.0.0.32</td><td>227.0.0.33</td><td>227.0.0.34</td></tr><tr><td>12931</td><td>12932</td><td>12933</td><td>12934</td></tr><tr><td rowspan="2">Partition 4</td><td>227.0.0.35</td><td>227.0.0.36</td><td>227.0.0.37</td><td>227.0.0.38</td></tr><tr><td>12935</td><td>12936</td><td>12937</td><td>12938</td></tr><tr><td rowspan="2">Indices</td><td>227.0.0.15</td><td>227.0.0.16</td><td>--</td><td>--</td></tr><tr><td>12915</td><td>12916</td><td>--</td><td>--</td></tr></table>								Incremental		Snapshot			Service A	Service B	Service A	Service B	Partition 1	227.0.0.23	227.0.0.24	227.0.0.25	227.0.0.26	12923	12924	12925	12926	Partition 2	227.0.0.27	227.0.0.28	227.0.0.29	227.0.0.30	12927	12928	12929	12930	Partition 3	227.0.0.31	227.0.0.32	227.0.0.33	227.0.0.34	12931	12932	12933	12934	Partition 4	227.0.0.35	227.0.0.36	227.0.0.37	227.0.0.38	12935	12936	12937	12938	Indices	227.0.0.15	227.0.0.16	--	--	12915	12916	--	--
									Incremental		Snapshot																																																		
								Service A	Service B	Service A	Service B																																																		
						Partition 1	227.0.0.23	227.0.0.24	227.0.0.25	227.0.0.26																																																			
							12923	12924	12925	12926																																																			
						Partition 2	227.0.0.27	227.0.0.28	227.0.0.29	227.0.0.30																																																			
							12927	12928	12929	12930																																																			
						Partition 3	227.0.0.31	227.0.0.32	227.0.0.33	227.0.0.34																																																			
							12931	12932	12933	12934																																																			
						Partition 4	227.0.0.35	227.0.0.36	227.0.0.37	227.0.0.38																																																			
							12935	12936	12937	12938																																																			
						Indices	227.0.0.15	227.0.0.16	--	--																																																			
12915	12916	--	--																																																										
<div>EOBI</div> <table><tr><td rowspan="2"></td><td></td><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td></td><td>Service A</td><td>Service B</td><td>Service A</td><td>Service B</td></tr><tr><td rowspan="2">Partition 1</td><td>237.0.0.1</td><td>237.0.0.2</td><td>237.0.0.3</td><td>237.0.0.4</td></tr><tr><td>12901</td><td>12902</td><td>12903</td><td>12904</td></tr><tr><td rowspan="2">Partition 2</td><td>237.0.0.5</td><td>237.0.0.6</td><td>237.0.0.7</td><td>237.0.0.8</td></tr><tr><td>12905</td><td>12906</td><td>12907</td><td>12908</td></tr><tr><td rowspan="2">Partition 3</td><td>237.0.0.9</td><td>237.0.0.10</td><td>237.0.0.11</td><td>237.0.0.12</td></tr><tr><td>12909</td><td>12910</td><td>12911</td><td>12912</td></tr><tr><td rowspan="2">Partition 4</td><td>237.0.0.13</td><td>237.0.0.14</td><td>237.0.0.15</td><td>237.0.0.16</td></tr><tr><td>12913</td><td>12914</td><td>12915</td><td>12916</td></tr></table>								Incremental		Snapshot			Service A	Service B	Service A	Service B	Partition 1	237.0.0.1	237.0.0.2	237.0.0.3	237.0.0.4	12901	12902	12903	12904	Partition 2	237.0.0.5	237.0.0.6	237.0.0.7	237.0.0.8	12905	12906	12907	12908	Partition 3	237.0.0.9	237.0.0.10	237.0.0.11	237.0.0.12	12909	12910	12911	12912	Partition 4	237.0.0.13	237.0.0.14	237.0.0.15	237.0.0.16	12913	12914	12915	12916									
									Incremental		Snapshot																																																		
								Service A	Service B	Service A	Service B																																																		
						Partition 1	237.0.0.1	237.0.0.2	237.0.0.3	237.0.0.4																																																			
							12901	12902	12903	12904																																																			
						Partition 2	237.0.0.5	237.0.0.6	237.0.0.7	237.0.0.8																																																			
							12905	12906	12907	12908																																																			
						Partition 3	237.0.0.9	237.0.0.10	237.0.0.11	237.0.0.12																																																			
							12909	12910	12911	12912																																																			
						Partition 4	237.0.0.13	237.0.0.14	237.0.0.15	237.0.0.16																																																			
							12913	12914	12915	12916																																																			

Interactive Interfaces				Reference Data Interface																								
<div>Connection Gateway</div> <table><tr><td></td><td>Host IP</td><td>Port</td></tr><tr><td>Primary</td><td>10.255.241.16</td><td>15908</td></tr><tr><td>Secondary</td><td>10.255.241.17</td><td>15908</td></tr></table>					Host IP	Port	Primary	10.255.241.16	15908	Secondary	10.255.241.17	15908	<div>RDI</div> <table><tr><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td>228.0.0.3</td><td>228.0.0.4</td><td>228.0.0.5</td><td>228.0.0.6</td></tr><tr><td>15903</td><td>15904</td><td>15905</td><td>15906</td></tr></table>				Incremental		Snapshot		228.0.0.3	228.0.0.4	228.0.0.5	228.0.0.6	15903	15904	15905	15906
					Host IP	Port																						
				Primary	10.255.241.16	15908																						
Secondary	10.255.241.17	15908																										
Incremental		Snapshot																										
228.0.0.3	228.0.0.4	228.0.0.5	228.0.0.6																									
15903	15904	15905	15906																									
Market Data Interfaces ( Low Bandwidth)																												
<div>MDI</div> <table><tr><td>Service A</td><td>Service B</td></tr><tr><td>228.0.0.7</td><td>228.0.0.8</td></tr><tr><td>15907</td><td>15908</td></tr></table>			Service A	Service B	228.0.0.7	228.0.0.8	15907	15908	<div>NFCAST</div> <table><tr><td>Equity Derivatives</td></tr><tr><td>228.0.0.1</td></tr><tr><td>15901</td></tr></table>					Equity Derivatives	228.0.0.1	15901												
			Service A	Service B																								
			228.0.0.7	228.0.0.8																								
15907	15908																											
Equity Derivatives																												
228.0.0.1																												
15901																												
Market Data Interfaces ( High Bandwidth)																												
<div>EMDI</div>										Incremental		Snapshot																
										Service A	Service B	Service A	Service B															
								Partition 1	228.0.0.13	228.0.0.14	228.0.0.15	228.0.0.16																
									15913	15914	15915	15916																
								Partition 2	228.0.0.17	228.0.0.18	228.0.0.19	228.0.0.20																
									15917	15918	15919	15920																
								Partition 3	228.0.0.21	228.0.0.22	228.0.0.23	228.0.0.24																
									15921	15922	15923	15924																
								Partition 4	228.0.0.25	228.0.0.26	228.0.0.27	228.0.0.28																
									15925	15926	15927	15928																
								Partition 5	228.0.0.29	228.0.0.30	228.0.0.31	228.0.0.32																
									15929	15930	15931	15932																
								Partition 6	228.0.0.33	228.0.0.34	228.0.0.35	228.0.0.36																
									15933	15934	15935	15936																
								Partition 7	228.0.0.37	228.0.0.38	228.0.0.39	228.0.0.40																
									15937	15938	15939	15940																
								Partition 8	228.0.0.41	228.0.0.42	228.0.0.43	228.0.0.44																
									15941	15942	15943	15944																
								Others	228.0.0.9	228.0.0.10	--	--																
									15909	15910	--	--																



EOBI		Incremental		Snapshot	
		Service A	Service B	Service A	Service B
	Partition 1	238.0.0.1	238.0.0.2	238.0.0.3	238.0.0.4
		15901	15902	15903	15904
	Partition 2	238.0.0.5	238.0.0.6	238.0.0.7	238.0.0.8
		15905	15906	15907	15908
	Partition 3	238.0.0.9	238.0.0.10	238.0.0.11	238.0.0.12
		15909	15910	15911	15912
	Partition 4	238.0.0.13	238.0.0.14	238.0.0.15	238.0.0.16
		15913	15914	15915	15916
	Partition 5	238.0.0.17	238.0.0.18	238.0.0.19	238.0.0.20
		15917	15918	15919	15920
	Partition 6	238.0.0.21	238.0.0.22	238.0.0.23	238.0.0.24
		15921	15922	15923	15924
	Partition 7	238.0.0.25	238.0.0.26	238.0.0.27	238.0.0.28
		15925	15926	15927	15928
Partition 8	238.0.0.29	238.0.0.30	238.0.0.31	238.0.0.32	
	15929	15930	15931	15932	

Interactive Interfaces				Reference Data Interface				
Connection Gateway		Host IP	Port	RDI	Incremental		Snapshot	
	Primary	10.255.241.26	13908		229.0.0.11	229.0.0.12	229.0.0.13	229.0.0.14
	Secondary	10.255.241.27	13908		10984	10985	10986	10987
Market Data Interfaces ( Low Bandwidth)								
MDI	Service A	Service B	NFCAST Currency 229.0.0.21 10996					
	229.0.0.19	229.0.0.20						
	10994	10995						
Market Data Interfaces ( High Bandwidth)								
EMDI		Incremental		Snapshot				
		Service A	Service B	Service A	Service B			
		229.0.0.23	229.0.0.24	229.0.0.25	229.0.0.26			
		10923	10924	10925	10926			
EOBI		Incremental		Snapshot				
		Service A	Service B	Service A	Service B			
		236.0.0.1	236.0.0.2	236.0.0.3	236.0.0.4			
		10901	10902	10903	10904			

5.8 Disaster Recovery: Commodities Derivatives & Electronic Gold Receipts (EGR)

Interactive Interfaces				Reference Data Interface				
Connection Gateway		Host IP	Port	RDI	Incremental		Snapshot	
	Primary	10.255.241.27	14908		229.0.0.69	229.0.0.70	229.0.0.71	229.0.0.72
	Secondary	10.255.241.26	14908		14969	14970	14971	14972
Market Data Interfaces ( Low Bandwidth)								
MDI	Service A	Service B	NFCAST					
	229.0.0.67	229.0.0.68						
	14967	14968						
Market Data Interfaces ( High Bandwidth)								
EMDI	Partition 1	Incremental		Snapshot				
		Service A	Service B	Service A	Service B			
		229.0.0.73	229.0.0.74	229.0.0.75	229.0.0.76			
		14973	14974	14975	14976			

Interactive Interfaces				Reference Data Interface																								
<div>Connection Gateway</div> <table><tr><td></td><td>Host IP</td><td>Port</td></tr><tr><td>Primary</td><td>10.255.254.6</td><td>11408</td></tr><tr><td>Secondary</td><td>10.255.254.40</td><td>11408</td></tr></table>					Host IP	Port	Primary	10.255.254.6	11408	Secondary	10.255.254.40	11408	<div>RDI</div> <table><tr><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td>226.1.0.5</td><td>226.1.0.6</td><td>226.1.0.7</td><td>226.1.0.8</td></tr><tr><td>11405</td><td>11406</td><td>11407</td><td>11408</td></tr></table>				Incremental		Snapshot		226.1.0.5	226.1.0.6	226.1.0.7	226.1.0.8	11405	11406	11407	11408
					Host IP	Port																						
				Primary	10.255.254.6	11408																						
Secondary	10.255.254.40	11408																										
Incremental		Snapshot																										
226.1.0.5	226.1.0.6	226.1.0.7	226.1.0.8																									
11405	11406	11407	11408																									
Market Data Interfaces ( Low Bandwidth)																												
Equity			<div>NFCAST</div> <table><tr><td>Equity</td></tr><tr><td>226.1.0.1</td></tr><tr><td>11401</td></tr></table>					Equity	226.1.0.1	11401																		
Equity																												
226.1.0.1																												
11401																												
MDI	Service A	Service B																										
	226.1.0.2	226.1.0.3																										
	11402	11403																										
Market Data Interfaces ( High Bandwidth)																												
EMDI		Incremental		Snapshot																								
		Service A	Service B	Service A	Service B																							
	Partition 1	226.1.0.13	226.1.0.14	226.1.0.15	226.1.0.16																							
		11413	11414	11415	11416																							
	Partition 2	226.1.0.17	226.1.0.18	226.1.0.19	226.1.0.20																							
		11417	11418	11419	11420																							
	Partition 3	226.1.0.21	226.1.0.22	226.1.0.23	226.1.0.24																							
		11421	11422	11423	11424																							
	Partition 4	226.1.0.25	226.1.0.26	226.1.0.27	226.1.0.28																							
		11425	11426	11427	11428																							
EOBI		Incremental		Snapshot																								
		Service A	Service B	Service A	Service B																							
	Partition 1	226.1.0.45	226.1.0.46	226.1.0.47	226.1.0.48																							
		11445	11446	11447	11448																							
	Partition 2	226.1.0.49	226.1.0.50	226.1.0.51	226.1.0.52																							
		11449	11450	11451	11452																							
	Partition 3	226.1.0.53	226.1.0.54	226.1.0.55	226.1.0.56																							
		11453	11454	11455	11456																							
	Partition 4	226.1.0.57	226.1.0.58	226.1.0.59	226.1.0.60																							
		11457	11458	11459	11460																							

Interactive Interfaces				Reference Data Interface																								
<div>Connection Gateway</div> <table><tr><td></td><td>Host IP</td><td>Port</td></tr><tr><td>Primary</td><td>10.255.254.41</td><td>12408</td></tr><tr><td>Secondary</td><td>10.255.254.6</td><td>12408</td></tr></table>					Host IP	Port	Primary	10.255.254.41	12408	Secondary	10.255.254.6	12408	<div>RDI</div> <table><tr><td colspan="2">Incremental</td><td colspan="2">Snapshot</td></tr><tr><td>226.1.1.5</td><td>226.1.1.6</td><td>226.1.1.7</td><td>226.1.1.8</td></tr><tr><td>12405</td><td>12406</td><td>12407</td><td>12408</td></tr></table>				Incremental		Snapshot		226.1.1.5	226.1.1.6	226.1.1.7	226.1.1.8	12405	12406	12407	12408
					Host IP	Port																						
				Primary	10.255.254.41	12408																						
Secondary	10.255.254.6	12408																										
Incremental		Snapshot																										
226.1.1.5	226.1.1.6	226.1.1.7	226.1.1.8																									
12405	12406	12407	12408																									

Market Data Interfaces ( Low Bandwidth)												
<div>MDI</div> <table><tr><td>Service A</td><td>Service B</td></tr><tr><td>226.1.1.2</td><td>226.1.1.3</td></tr><tr><td>12402</td><td>12403</td></tr></table>		Service A	Service B	226.1.1.2	226.1.1.3	12402	12403	<div>NFCAST</div> <table><tr><td>Equity Derv</td></tr><tr><td>226.1.1.1</td></tr><tr><td>12401</td></tr></table>		Equity Derv	226.1.1.1	12401
		Service A	Service B									
		226.1.1.2	226.1.1.3									
12402	12403											
Equity Derv												
226.1.1.1												
12401												

Market Data Interfaces ( High Bandwidth)					
<div>EMDI</div>		Incremental		Snapshot	
		Service A	Service B	Service A	Service B
	Partition 1	226.1.1.9	226.1.1.10	226.1.1.11	226.1.1.12
		12409	12410	12411	12412
	Partition 2	226.1.1.13	226.1.1.14	226.1.1.15	226.1.1.16
		12413	12414	12415	12416
	Partition 3	226.1.1.17	226.1.1.18	226.1.1.19	226.1.1.20
		12417	12418	12419	12420
	Partition 4	226.1.1.21	226.1.1.22	226.1.1.23	226.1.1.24
		12421	12422	12423	12424
	Partition 5	226.1.1.25	226.1.1.26	226.1.1.27	226.1.1.28
		12425	12426	12427	12428
	Partition 6	226.1.1.29	226.1.1.30	226.1.1.31	226.1.1.32
		12429	12430	12431	12432
	Partition 7	226.1.1.33	226.1.1.34	226.1.1.35	226.1.1.36
		12433	12434	12435	12436
	Partition 8	226.1.1.37	226.1.1.38	226.1.1.39	226.1.1.40
		12437	12438	12439	12440

EOBI		Incremental		Snapshot	
		Service A	Service B	Service A	Service B
	Partition 1	226.1.1.41	226.1.1.42	226.1.1.43	226.1.1.44
		12441	12442	12443	12444
	Partition 2	226.1.1.45	226.1.1.46	226.1.1.47	226.1.1.48
		12445	12446	12447	12448
	Partition 3	226.1.1.49	226.1.1.50	226.1.1.51	226.1.1.52
		12449	12450	12451	12452
	Partition 4	226.1.1.53	226.1.1.54	226.1.1.55	226.1.1.56
		12453	12454	12455	12456
	Partition 5	226.1.1.57	226.1.1.58	226.1.1.59	226.1.1.60
		12457	12458	12459	12460
	Partition 6	226.1.1.61	226.1.1.62	226.1.1.63	226.1.3.61
		12461	12462	12463	12464
	Partition 7	226.1.3.53	226.1.3.54	226.1.3.55	226.1.3.56
		12453	12454	12455	12456
	Partition 8	226.1.3.57	226.1.3.58	226.1.3.59	226.1.3.60
		12457	12458	12459	12460

Interactive Interfaces				Reference Data Interface				
Connection Gateway		Host IP	Port	RDI	Incremental		Snapshot	
	Primary	10.255.254.6	10408		226.1.3.5	226.1.3.6	226.1.3.7	226.1.3.8
	Secondary	10.255.254.40	10408		10405	10406	10407	10408
Market Data Interfaces ( Low Bandwidth)								
MDI	Service A	Service B	NFCAST					
	226.1.3.2	226.1.3.3						
	10402	10403						
Market Data Interfaces ( High Bandwidth)								
EMDI		Incremental		Snapshot				
		Service A	Service B	Service A	Service B			
		226.1.3.13	226.1.3.14	226.1.3.15	226.1.3.16			
		10413	10414	10415	10416			
EOBI		Incremental		Snapshot				
		Service A	Service B	Service A	Service B			
		226.1.3.33	226.1.3.34	226.1.3.35	226.1.3.36			
		10433	10434	10435	10436			

5.12 Simulation: Commodities Derivatives & Electronic Gold Receipts (EGR)

Interactive Interfaces				Reference Data Interface									
Connection Gateway		Host IP	Port	RDI	Incremental		Snapshot						
	Primary	10.255.254.6	15408		226.1.2.5	226.1.2.6	226.1.2.7	226.1.2.8					
	Secondary	10.255.254.40	15408		15405	15406	15407	15408					
Market Data Interfaces ( Low Bandwidth)													
MDI	Service A	Service B	NFCAST <table><tr><td>Commodity</td><td>EGR</td></tr><tr><td>226.1.2.1</td><td>226.1.2.2</td></tr><tr><td>15401</td><td>15402</td></tr></table>					Commodity	EGR	226.1.2.1	226.1.2.2	15401	15402
	Commodity	EGR											
	226.1.2.1	226.1.2.2											
15401	15402												
226.1.2.3	226.1.2.4												
15403	15404												
Market Data Interfaces ( High Bandwidth)													
EMDI		Incremental		Snapshot									
		Service A	Service B	Service A	Service B								
		226.1.2.9	226.1.2.10	226.1.2.11	226.1.2.12								
	Partition 1	15409	15410	15411	15412								



## 6 Change Log

Sr. No.	Version	Date	Description				
1.	1.0	25 <sup>th</sup> September 2020	Original Document				
2.	1.1	13 <sup>th</sup> November 2021	New Multicast IP 227.0.0.17 and 227.0.0.18 added for Equity Derivative segment in MDI Feed.				
3.	1.2	1 <sup>st</sup> April 2022	<div>Production: New Multicast IP 228.0.0.21 added for EGR in commodities derivatives segment.</div> <div>Simulation: New Multicast IP 226.1.1.2 added for EGR in commodities derivatives segment.</div> <div>Simulation Secondary Connection Gateway IP changed as follows for all segments.</div> <table><tr><th>OLD IP</th><th>New IP</th></tr><tr><td>10.255.254.7</td><td>10.255.254.40</td></tr></table>	OLD IP	New IP	10.255.254.7	10.255.254.40
OLD IP	New IP						
10.255.254.7	10.255.254.40						
4	1.3	16 <sup>th</sup> May 2023	<div>The Generic route section is removed.</div> <div>The section Specific routes renamed as Routes and range of each route updated.</div>				
5	1.4	10 <sup>th</sup> July 2023	Partition 5 and 6 multicast Ip ports added for EOBI and EMDI in equity and equity derivatives segment in production, simulation, and Disaster Recovery				
6	1.5	10 <sup>th</sup> August 2023	Partition 7 and 8 multicast Ip ports added for EOBI and EMDI in equity and equity derivatives segment in production, simulation, and Disaster Recovery				
7	1.6	10 <sup>th</sup> October 2023	<div>Segregation of equity and equity derivatives segment. Changes in following sections</div> <div>(a) Section 4.1 Routes: Routes added for equity derivatives segment.</div> <div>(b) Section 5.3 Production: Equity Derivatives Section 5.6 Disaster Recovery: Equity Derivatives Section 5.10: Simulation: Equity Derivatives</div>				

			<p>New sections added for IP ports of equity derivatives segment in Production, DR and Simulation.</p> <p>Multicast IP and ports change in production and DR for Commodities derivatives and EGR segment. Section 5.4 and section 5.8</p>
8	1.7	27 <sup>th</sup> Nov 2023	<p>(Section 5.2) Change in IP of MDI Service B low bandwidth (Section 5.6) Connection Gateway parameters for DR Equity Derivatives</p>
9	1.8	6 <sup>th</sup> Dec 2023	<p>(Section 4.1) Change in Routes of Simulation Equity and Derivatives (Section 5.9, Section 5.10) Connection Gateway Parameters change for Equity and Derivatives in Simulation</p>
10	1.9	15 <sup>th</sup> Dec 2023	<p>(Section 5.7, Section 5.8) Connection Gateway Parameters change for Currency Derivatives and Commodities derivatives and EGR in Disaster Recovery.</p>