



## CONNECTIVITY GUIDE

### **HKEX Orion Market Data Platform Derivatives Market Datafeed Products (OMD-D)**

Version 1.14  
13 May 2020

**DOCUMENT HISTORY**

Document Version	Date	Change Description				
1.0	2 August 2013	First issue				
1.1	2 January 2014	<p>Section 2.1.1, 2.1.2 – Remove channel assignment for Derivatives Non-SOM Trade Statistics Supplement Channel</p> <p>Section 2.1.3, 2.1.4 – Remove channel assignment for Derivatives Non-SOM Series Statistics Supplement Channel</p> <p>Section 2.2 – Add elaboration on availability of OMD-D Test Environments</p> <p>Section 2.2.1 to 2.2.8 – Update channel assignments</p> <p>Section 2.2.9 – Update IP unicast addresses</p> <p>Section 3.2.1, 3.2.2 – Update table for bandwidth requirements</p> <p>Section 3.4 – Update examples</p> <p>Section 3.5 – Add clarification for High Performance Option</p> <p>Appendix B – Update the sample for Host End Network Information</p>				
1.2	17 January 2014	<p>Section 2.1.1 to 2.1.4 and 2.2.1 to 2.2.4 – Update channel assignments for Open Interest Channel</p> <p>Section 2.1.7, 2.1.8, 2.2.7, 2.2.8 – Rename OMD Derivatives Trade Tick to OMD Derivatives Trade</p> <p>Section 2.2.9 – Update IP unicast addresses</p>				
1.3	8 May 2014	Section 3.2.1 – Update bandwidth requirements				
1.4	22 Aug 2014	<p>Section 3.2.1 – Clarify HPO requirements</p> <p>Section 3.5 – Add clarification for High Performance Option</p>				
1.5	20 Oct 2015	<p>Section 3.2.1 – Update bandwidth requirements</p> <p>Section 3.3 - Remove obsolete condition</p> <p>Section 3.4 – Updated examples</p> <p>Section 3.5 – Add clarification statement for HPO</p>				
1.6	15 December 2015	Appendix A – SDNet/2 Accredited Vendors Information				
1.7	22 January 2016	Section 2 (across sub-sections) – Add information on the new dedicated channel for the new Disaster Recovery Signal (105) message				
1.8	30 January 2018	<table border="1"> <thead> <tr> <th>Effective Date</th> <th>Changes</th> </tr> </thead> <tbody> <tr> <td>1 February 2018</td> <td> <ul style="list-style-type: none"> <li>Section 2.2 – Separate OMD-D Test Environment into OMD-D Readiness Test Environment, HKATS Testing Environment (Current Production Version) and HKATS Testing Environment (Phase 1 Changes to OMD-D for HKATS/DCASS Upgrade Version)</li> <li>Section 2.2 – Add connectivity details for HKATS Testing Environment for Phase 1 Changes to OMD-D for HKATS/DCASS Upgrade Version</li> </ul> </td> </tr> </tbody> </table>	Effective Date	Changes	1 February 2018	<ul style="list-style-type: none"> <li>Section 2.2 – Separate OMD-D Test Environment into OMD-D Readiness Test Environment, HKATS Testing Environment (Current Production Version) and HKATS Testing Environment (Phase 1 Changes to OMD-D for HKATS/DCASS Upgrade Version)</li> <li>Section 2.2 – Add connectivity details for HKATS Testing Environment for Phase 1 Changes to OMD-D for HKATS/DCASS Upgrade Version</li> </ul>
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**Derivatives Market Datafeed Products (OMD-D)**

1.9	12 April 2018	<table border="1"> <thead> <tr> <th data-bbox="518 208 730 248">Effective Date</th> <th data-bbox="730 208 1437 248">Changes</th> </tr> </thead> <tbody> <tr> <td data-bbox="518 248 730 539">30 April 2018</td> <td data-bbox="730 248 1437 539"> <ul style="list-style-type: none"> <li>Remove HKATS Testing Environment (Current Production Version) in Section 2.2.2</li> <li>Rename HKATS Testing Environment (Phase 1 Changes to OMD-D for HKATS/DCASS Upgrade Version) to HKATS Testing Environment in Section 2.2.3</li> <li>Rename “Hutchison Global Communications Limited” to “HGC Global Communications Limited” and update the link in Appendix A</li> </ul> </td> </tr> </tbody> </table>	Effective Date	Changes	30 April 2018	<ul style="list-style-type: none"> <li>Remove HKATS Testing Environment (Current Production Version) in Section 2.2.2</li> <li>Rename HKATS Testing Environment (Phase 1 Changes to OMD-D for HKATS/DCASS Upgrade Version) to HKATS Testing Environment in Section 2.2.3</li> <li>Rename “Hutchison Global Communications Limited” to “HGC Global Communications Limited” and update the link in Appendix A</li> </ul>
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## Derivatives Market Datafeed Products (OMD-D)

1.13	17 December 2019	<b>Effective Date</b>	<b>Changes</b>
		4 January 2020	<b>Update of Information</b> <ul style="list-style-type: none"> <li>Remove EAS Channel in all Sections EAS</li> </ul>
1.14	13 May 2020	<b>Effective Date</b>	<b>Changes</b>
		27 Jun 2020	<b>Update Bandwidth</b> <ul style="list-style-type: none"> <li>Section 3.2.1 – Update the multicast bandwidth requirement for DF (Non SOM) from 24Mbps to 44Mbps</li> <li>Section 3.4 – Update the bandwidth figures in examples</li> </ul>
		Immediate	<b>Update of Information</b> <ul style="list-style-type: none"> <li>Appendix A – Remove HGC Global Communications Limited and rename Wharf T&amp;T Limited to HKBN Enterprise Solutions HK Limited</li> </ul>

## Contents

<b>1.</b>	<b>Overview</b>	<b>6</b>
<b>2.</b>	<b>Configuration Information</b>	<b>7</b>
2.1	OMD-D Production Environment Connectivity Details	9
2.1.1	OMD Derivatives Lite (non-SOM) – Price Depth Feed (conflated)	9
2.1.2	OMD Derivatives Lite (SOM) – Price Depth Feed (conflated)	11
2.1.3	OMD Derivatives Lite – Order Feed (snapshot)	12
2.1.4	OMD Derivatives Standard (non-SOM) (conflated)	13
2.1.5	OMD Derivatives Standard (SOM) (conflated)	15
2.1.6	OMD Derivatives Premium (non-SOM) (streaming)	16
2.1.7	OMD Derivatives Premium (SOM) (streaming)	18
2.1.8	OMD Derivatives Full Tick (non-SOM) (streaming)	20
2.1.9	OMD Derivatives Full Tick (SOM) (streaming)	22
2.1.10	OMD Derivatives Trade (non-SOM) (streaming)	24
2.1.11	OMD Derivatives Trade (SOM) (streaming)	25
2.1.12	HKEX OMD Retransmission Unicast Connectivity	26
2.2	OMD-D Test Environment Connectivity Details	27
2.2.1	OMD-D Readiness Test Environment	28
2.2.2	HKATS Testing Environment	41
2.2.3	HKATS Certification Test Environment	55
2.3	Individual Client Configuration Details	69
<b>3.</b>	<b>Guidelines on SDNet/2 lines / HSN connection</b>	<b>70</b>
3.1	Mode of OMD connection	70
3.2	Bandwidth Requirement	70
3.2.1	Production SDNet/2 / HSN and Testing SDNet/2 / HSN for OMD-D Readiness Test	70
3.2.2	Testing SDNet/2 / HSN for OMD-D HKATS Testing Environment and HKATS Certification Test Environment	71
3.3	Sharing of SDNet/2 lines or HSN port set	72
3.4	Bandwidth for shared SDNet/2 lines or HSN port set	72
3.5	SDNet/2 High Performance Option	73
<b>4.</b>	<b>Other Guidelines on OMD Connections</b>	<b>74</b>
4.1	Additional Login IDs/Client IP addresses for Unicast Retransmission Service	74
4.2	Installation of SDNet/2 and HSN lines	74
4.2.1	SDNet/2 lines	74
4.2.2	HSN lines	74
	<b>Appendix A – SDNet/2 Accredited Vendors Information</b>	<b>75</b>
	<b>Appendix B Sample Client Configuration Information</b>	<b>76</b>

## 1. Overview

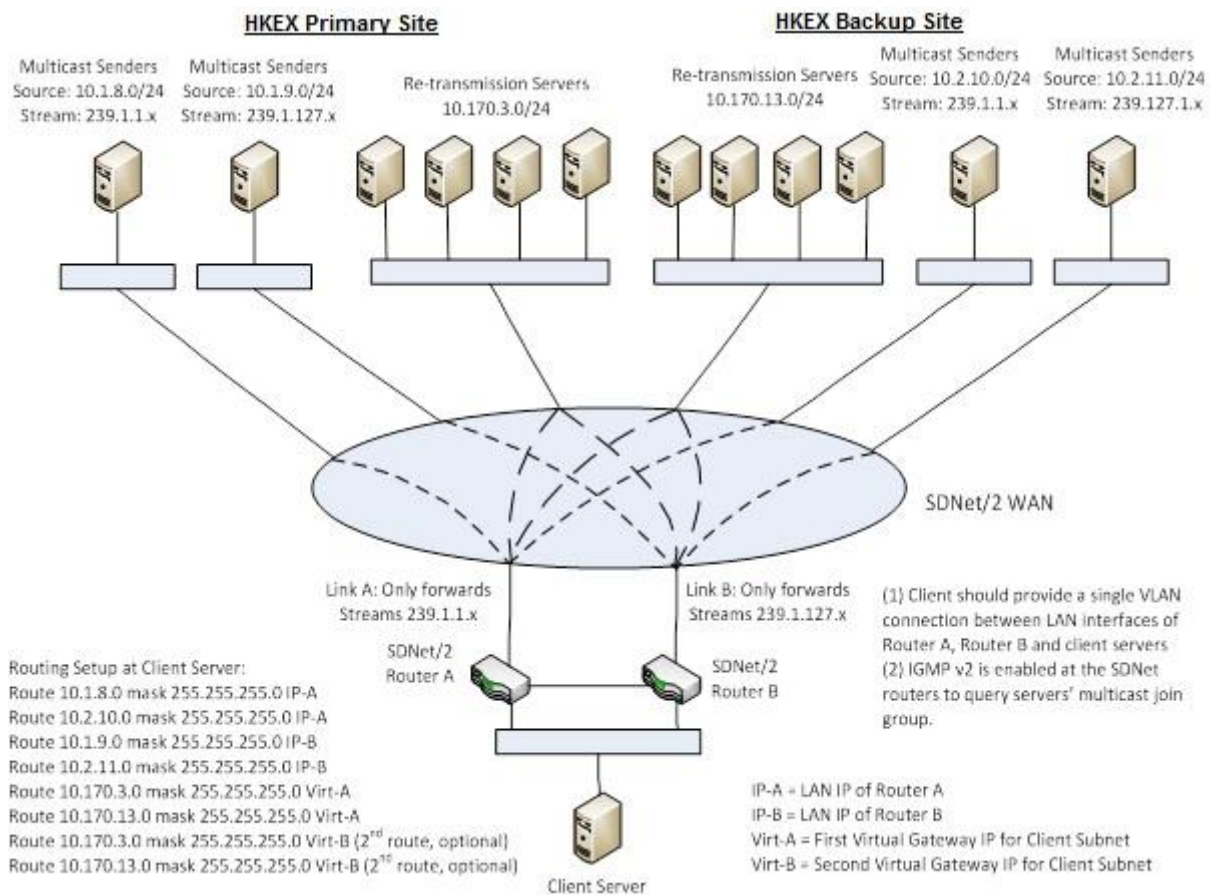
This document aims to provide network configuration information and guidance to assist information vendors and end-users (“clients”) in setting up their networks for making connection to OMD-D testing and production environments.

This document contains:

- Configuration information, i.e. IP addresses of the channels assigned for each of the OMD datafeed products in OMD Production environment and Open/Readiness Test environment
- Guidelines / policies for SDNet/2 and HSN connection

## 2. Configuration Information

OMD adopts multicast transmission protocol for real-time data transmission with retransmission recovery service running on Unicast. Clients are required to set correct network configurations in order to establish proper connection to the corresponding OMD multicast server and retransmission server. Below is a sample connection diagram which provides an overview of SDNet/2 network connection to OMD for reference.



For OMD connection via SDNet/2, a client system has to set up routing to the HKEX host subnets as the diagram depicted. To receive multicast stream, IGMP version 2 is employed at the SDNet/2 routers to query the multicast groups which the client system subscribes. The client system should enable the IGMP function and issue join messages to the SDNet/2 routers for the entitled multicast groups.

For OMD connection by co-location at HKEX Host Data Centre (HDC), clients are required to provide their own routers to connect to the HKEX network. The protocols used in HDC network are BGP4 and Multicast PIM sparse mode. For details, please refer to the Interface Specification on Connectivity Services and Timing Service of HKEX Hosting or contact HKEX Hosting Services team via email [hostingservices@hkex.com.hk](mailto:hostingservices@hkex.com.hk).

Since the physical speed of an SDNet/2 circuit is 1Gbps, the interface of a client end LAN switch and the client end server has to be 1Gbps in order to prevent packet drops in case of multicast packet burst. To connect with SDNet/2 routers, interface of the LAN switch should be configured with speed as "auto-sense" and duplex mode as "auto-sense" and "auto-negotiation". Then, when the link comes up, the corresponding interface of the LAN switch should learn 1Gbps and full duplex.

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

The client systems are required to subscribe to the multicast addresses and port IDs for the subscribed OMD products according to multicast channel subscriptions as listed in Section 2.1 for production environment or as listed in Section 2.2 for Test environment. Clients should not subscribe to other multicast addresses and port IDs not specified in this Connectivity Guide, otherwise it will result in receiving non OMD packets.



## 2.1 OMD-D Production Environment Connectivity Details

Note 1 :

In OMD-D, partition assignment follows the exact arrangement in Genium. Market numbers 1 to 20 are assigned to Partition 1, and the market number above 20 are assigned to Partition 2.

Partition Number	Markets ID
1	1 – 20
2	21 - 255

The above partitioning is subject to change by market operation development.

Note 2:

The below glossary applies to the following sections

SOM	Stock Option Market
Non-SOM	Non-Stock Option Market
COP	Calculated Opening Price

### 2.1.1 OMD Derivatives Lite (non-SOM) – Price Depth Feed (conflated)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101	A: 239.1.1.128:51001 B: 239.1.127.128:51001	603	A: 239.1.1.154:51001 B: 239.1.127.154:51001
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201	A: 239.1.1.128:51002 B: 239.1.127.128:51002	703	A: 239.1.1.154:51002 B: 239.1.127.154:51002
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151	A: 239.1.1.128:51003 B: 239.1.127.128:51003	653	A: 239.1.1.154:51003 B: 239.1.127.154:51003
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161	A: 239.1.1.128:51004 B: 239.1.127.128:51004	663	A: 239.1.1.154:51004 B: 239.1.127.154:51004
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.128:51005 B: 239.1.127.128:51005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.150:51000 B: 239.1.127.150:51000	696	A: 239.1.1.178:51000 B: 239.1.127.178:51000
<b>Derivatives Non-SOM Level 2</b>	Calculated Opening Price (364)	137	A: 239.1.1.151:51001 B: 239.1.127.151:51001	637	A: 239.1.1.176:51001 B: 239.1.127.176:51001

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Price and COP (Partition 1)</b>	Aggregate Order Book Update (353)				
<b>Channel</b>					
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2)</b>	Calculated Opening Price (364)	237	A: 239.1.1.151:51002 B: 239.1.127.151:51002	737	A: 239.1.1.176:51002 B: 239.1.127.176:51002
<b>Channel</b>					
<b>Derivatives Non-SOM Trade Statistic</b>	Trade Statistic (360)	179	A: 239.1.1.151:51003 B: 239.1.127.151:51003	679	A: 239.1.1.176:51003 B: 239.1.127.176:51003
<b>Channel</b>					
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.144:51000 B: 239.1.127.144:51000	677	A: 239.1.1.169:51000 B: 239.1.127.169:51000
<b>Channel</b>					
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.144:51006 B: 239.1.127.144:51006		

## 2.1.2 OMD Derivatives Lite (SOM) – Price Depth Feed (conflated)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.133:51001 B: 239.1.127.133:51001	604	A: 239.1.1.159:51001 B: 239.1.127.159:51001
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.133:51002 B: 239.1.127.133:51002	704	A: 239.1.1.159:51002 B: 239.1.127.159:51002
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.133:51003 B: 239.1.127.133:51003	654	A: 239.1.1.159:51003 B: 239.1.127.159:51003
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.133:51004 B: 239.1.127.133:51004	664	A: 239.1.1.159:51004 B: 239.1.127.159:51004
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.133:51005 B: 239.1.127.133:51005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.149:51000 B: 239.1.127.149:51000	697	A: 239.1.1.179:51000 B: 239.1.127.179:51000
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	138	A: 239.1.1.152:51001 B: 239.1.127.152:51001	638	A: 239.1.1.177:51001 B: 239.1.127.177:51001
	Aggregate Order Book Update (353)				
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	238	A: 239.1.1.152:51002 B: 239.1.127.152:51002	738	A: 239.1.1.177:51002 B: 239.1.127.177:51002
	Aggregate Order Book Update (353)				
<b>Derivatives SOM Trade Statistic Channel</b>	Trade Statistic (360)	180	A: 239.1.1.152:51003 B: 239.1.127.152:51003	680	A: 239.1.1.177:51003 B: 239.1.127.177:51003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.144:51000 B: 239.1.127.144:51000	677	A: 239.1.1.169:51000 B: 239.1.127.169:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.144:51006 B: 239.1.127.144:51006		

**2.1.3 OMD Derivatives Lite – Order Feed (snapshot)**

Multicast Service	Contents	Snapshot Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Order Feed (Partition 1) Channel</b>	Add Order (330)	639	A:239.1.1.180:51001 B:239.1.127.180:51001		
<b>Derivatives Order Feed (Partition 2) Channel</b>	Add Order (330)	739	A:239.1.1.180:51002 B:239.1.127.180:51002		

## 2.1.4 OMD Derivatives Standard (non-SOM) (conflated)

		Real-time Market Data Services	Refresh Snapshot Data Services
Multicast Service	Contents	Channel Multicast Channel ID Subscriptions	Channel Multicast Channel ID Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	101 A: 239.1.1.128:51001 B: 239.1.127.128:51001	601 A: 239.1.1.153:51001 B: 239.1.127.153:51001
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	201 A: 239.1.1.128:51002 B: 239.1.127.128:51002	701 A: 239.1.1.153:51002 B: 239.1.127.153:51002
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	151 A: 239.1.1.128:51003 B: 239.1.127.128:51003	651 A: 239.1.1.153:51003 B: 239.1.127.153:51003
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	161 A: 239.1.1.128:51004 B: 239.1.127.128:51004	661 A: 239.1.1.153:51004 B: 239.1.127.153:51004
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164 A: 239.1.1.128:51005 B: 239.1.127.128:51005	
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191 A: 239.1.1.150:51000 B: 239.1.127.150:51000	691 A: 239.1.1.175:51000 B: 239.1.127.175:51000
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353)	134 A: 239.1.1.132:51001 B: 239.1.127.132:51001	634 A: 239.1.1.157:51001 B: 239.1.127.157:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353)	234 A: 239.1.1.132:51002 B: 239.1.127.132:51002	734 A: 239.1.1.157:51002 B: 239.1.127.157:51002
<b>Derivatives Non-SOM Trade Statistic Channel</b>	Trade Statistic (360)	171 A: 239.1.1.132:51003 B: 239.1.127.132:51003	671 A: 239.1.1.157:51003 B: 239.1.127.157:51003
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177 A: 239.1.1.144:51000 B: 239.1.127.144:51000	677 A: 239.1.1.169:51000 B: 239.1.127.169:51000

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178 A: 239.1.1.144:51006 B: 239.1.127.144:51006
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## 2.1.5 OMD Derivatives Standard (SOM) (conflated)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.133:51001 B: 239.1.127.133:51001	602	A: 239.1.1.158:51001 B: 239.1.127.158:51001
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.133:51002 B: 239.1.127.133:51002	702	A: 239.1.1.158:51002 B: 239.1.127.158:51002
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.133:51003 B: 239.1.127.133:51003	652	A: 239.1.1.158:51003 B: 239.1.127.158:51003
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.133:51004 B: 239.1.127.133:51004	662	A: 239.1.1.158:51004 B: 239.1.127.158:51004
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.133:51005 B: 239.1.127.133:51005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.149:51000 B: 239.1.127.149:51000	692	A: 239.1.1.174:51000 B: 239.1.127.174:51000
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	135	A: 239.1.1.137:51001 B: 239.1.127.137:51001	635	A: 239.1.1.162:51001 B: 239.1.127.162:51001
	Aggregate Order Book Update (353)				
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	235	A: 239.1.1.137:51002 B: 239.1.127.137:51002	735	A: 239.1.1.162:51002 B: 239.1.127.162:51002
	Aggregate Order Book Update (353)				
<b>Derivatives SOM Trade Statistic Channel</b>	Trade Statistic (360)	172	A: 239.1.1.137:51003 B: 239.1.127.137:51003	672	A: 239.1.1.162:51003 B: 239.1.127.162:51003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.144:51000 B: 239.1.127.144:51000	677	A: 239.1.1.169:51000 B: 239.1.127.169:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.144:51006 B: 239.1.127.144:51006		

## 2.1.6 OMD Derivatives Premium (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	101	A: 239.1.1.128:51001 B: 239.1.127.128:51001	601	A: 239.1.1.153:51001 B: 239.1.127.153:51001
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	201	A: 239.1.1.128:51002 B: 239.1.127.128:51002	701	A: 239.1.1.153:51002 B: 239.1.127.153:51002
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	151	A: 239.1.1.128:51003 B: 239.1.127.128:51003	651	A: 239.1.1.153:51003 B: 239.1.127.153:51003
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	161	A: 239.1.1.128:51004 B: 239.1.127.128:51004	661	A: 239.1.1.153:51004 B: 239.1.127.153:51004
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.128:51005 B: 239.1.127.128:51005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.150:51000 B: 239.1.127.150:51000	691	A: 239.1.1.175:51000 B: 239.1.127.175:51000
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	131	A: 239.1.1.131:51001 B: 239.1.127.131:51001	631	A: 239.1.1.156:51001 B: 239.1.127.156:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	231	A: 239.1.1.131:51002 B: 239.1.127.131:51002	731	A: 239.1.1.156:51002 B: 239.1.127.156:51002
<b>Derivatives Non-SOM Trade</b>	Trade (350)	167	A: 239.1.1.139:51000 B: 239.1.127.139:51000		



## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Adjustment Channel</b>	Trade Amendment (356)				
<b>Derivatives Non-SOM Series Statistic Channel</b>	Series Statistics (363)	174	A: 239.1.1.131:51003 B: 239.1.127.131:51003	674	A: 239.1.1.156:51003 B: 239.1.127.156:51003
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.144:51000 B: 239.1.127.144:51000	677	A: 239.1.1.169:51000 B: 239.1.127.169:51000
<b>Implied Volatility Channel</b>	Implied Volatility (367)	194	A: 239.1.1.141:51000 B: 239.1.127.141:51000	694	A: 239.1.1.166:51000 B: 239.1.127.166:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.144:51006 B: 239.1.127.144:51006		

## 2.1.7 OMD Derivatives Premium (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	102	A: 239.1.1.133:51001 B: 239.1.127.133:51001	602	A: 239.1.1.158:51001 B: 239.1.127.158:51001
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	202	A: 239.1.1.133:51002 B: 239.1.127.133:51002	702	A: 239.1.1.158:51002 B: 239.1.127.158:51002
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	152	A: 239.1.1.133:51003 B: 239.1.127.133:51003	652	A: 239.1.1.158:51003 B: 239.1.127.158:51003
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	162	A: 239.1.1.133:51004 B: 239.1.127.133:51004	662	A: 239.1.1.158:51004 B: 239.1.127.158:51004
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.133:51005 B: 239.1.127.133:51005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.149:51000 B: 239.1.127.149:51000	692	A: 239.1.1.174:51000 B: 239.1.127.174:51000
<b>Derivatives SOM Level 2 Price and COP Channel (Partition 1)</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	132	A: 239.1.1.136:51001 B: 239.1.127.136:51001	632	A: 239.1.1.161:51001 B: 239.1.127.161:51001
<b>Derivatives SOM Level 2 Price and COP Channel (Partition 2)</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	232	A: 239.1.1.136:51002 B: 239.1.127.136:51002	732	A: 239.1.1.161:51002 B: 239.1.127.161:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	168	A: 239.1.1.140:51000 B: 239.1.127.140:51000		
<b>Derivatives SOM Series Statistic Channel</b>	Series Statistics (363)	175	A: 239.1.1.136:51003 B: 239.1.127.136:51003	675	A: 239.1.1.161:51003 B: 239.1.127.161:51003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.144:51000 B: 239.1.127.144:51000	677	A: 239.1.1.169:51000 B: 239.1.127.169:51000
<b>Implied Volatility Channel</b>	Implied Volatility (367)	195	A: 239.1.1.142:51000 B: 239.1.127.142:51000	695	A: 239.1.1.167:51000 B: 239.1.127.167:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.144:51006 B: 239.1.127.144:51006		

## 2.1.8 OMD Derivatives Full Tick (non-SOM) (streaming)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	101	A: 239.1.1.128:51001 B: 239.1.127.128:51001	601	A: 239.1.1.153:51001 B: 239.1.127.153:51001
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	201	A: 239.1.1.128:51002 B: 239.1.127.128:51002	701	A: 239.1.1.153:51002 B: 239.1.127.153:51002
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	151	A: 239.1.1.128:51003 B: 239.1.127.128:51003	651	A: 239.1.1.153:51003 B: 239.1.127.153:51003
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	161	A: 239.1.1.128:51004 B: 239.1.127.128:51004	661	A: 239.1.1.153:51004 B: 239.1.127.153:51004
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.128:51005 B: 239.1.127.128:51005		
<b>Derivatives Non-SOM Order, COP and Trade (Partition 1)</b>	Calculated Opening Price (364) Add Order (330) Modify Order (331) Delete Order (332) Orderbook Clear (335) Trade (350)	121	A: 239.1.1.130:51001 B: 239.1.127.130:51001	621	A: 239.1.1.155:51001 B: 239.1.127.155:51001
<b>Derivatives Non-SOM Order, COP and</b>	Calculated Opening Price (364)	221	A: 239.1.1.130:51002 B: 239.1.127.130:51002	721	A: 239.1.1.155:51002 B: 239.1.127.155:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Trade (Partition 2)</b>	Add Order (330) Modify Order (331) Delete Order (332) Orderbook Clear (335) Trade (350)				
<b>Derivatives Non-SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	167	A: 239.1.1.139:51000 B: 239.1.127.139:51000		
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.144:51000 B: 239.1.127.144:51000	677	A: 239.1.1.169:51000 B: 239.1.127.169:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.144:51006 B: 239.1.127.144:51006		

## 2.1.9 OMD Derivatives Full Tick (SOM) (streaming)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	102	A: 239.1.1.133:51001 B: 239.1.127.133:51001	602	A: 239.1.1.158:51001 B: 239.1.127.158:51001
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	202	A: 239.1.1.133:51002 B: 239.1.127.133:51002	702	A: 239.1.1.158:51002 B: 239.1.127.158:51002
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	152	A: 239.1.1.133:51003 B: 239.1.127.133:51003	652	A: 239.1.1.158:51003 B: 239.1.127.158:51003
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	162	A: 239.1.1.133:51004 B: 239.1.127.133:51004	662	A: 239.1.1.158:51004 B: 239.1.127.158:51004
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.133:51005 B: 239.1.127.133:51005		
<b>Derivatives SOM Order, COP and Trade (Partition 1)</b>	Calculated Opening Price (364) Add Order (330) Modify Order (331) Delete Order (332) Orderbook Clear (335) Trade (350)	122	A: 239.1.1.135:51001 B: 239.1.127.135:51001	622	A: 239.1.1.160:51001 B: 239.1.127.160:51001
<b>Derivatives SOM Order, COP and Trade (Partition 2)</b>	Calculated Opening Price (364) Add Order (330)	222	A: 239.1.1.135:51002 B: 239.1.127.135:51002	722	A: 239.1.1.160:51002 B: 239.1.127.160:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

	Modify Order (331)				
	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350)	168	A: 239.1.1.140:51000 B: 239.1.127.140:51000		
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.144:51000 B: 239.1.127.144:51000	677	A: 239.1.1.169:51000 B: 239.1.127.169:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.144:51006 B: 239.1.127.144:51006		

**2.1.10 OMD Derivatives Trade (non-SOM) (streaming)**

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Trade Channel (Partition 1)</b>	Trade (350)	111	A: 239.1.1.129:51001 B: 239.1.127.129:51001		
<b>Derivatives Non-SOM Trade Channel (Partition 2)</b>	Trade (350)	211	A: 239.1.1.129:51002 B: 239.1.127.129:51002		
<b>Derivatives Non-SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	167	A: 239.1.1.139:51000 B: 239.1.127.139:51000		



**2.1.11 OMD Derivatives Trade (SOM) (streaming)**

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Trade Channel (Partition 1)</b>	Trade (350)	112	A: 239.1.1.134:51001 B: 239.1.127.134:51001		
<b>Derivatives SOM Trade Channel (Partition 2)</b>	Trade (350)	212	A: 239.1.1.134:51002 B: 239.1.127.134:51002		
<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	168	A: 239.1.1.140:51000 B: 239.1.127.140:51000		

### 2.1.12 HKEX OMD Retransmission Unicast Connectivity

HKEX provides a Retransmission Service to its OMD clients to recover lost multicast packet. Functional details of the Retransmission Service are provided in the Interface Specification. Find below the Unicast Addresses to connect to the OMD Retransmission Servers in **OMD-D production environment**.

Retransmission Server	IP Unicast Address
Primary server in primary site	10.170.3.121:55455
Secondary server in primary site	10.170.3.122:55455
Primary server in DR site	10.170.13.121:55455
Secondary server in DR site	10.170.13.122:55455

## 2.2 OMD-D Test Environment Connectivity Details

There are three OMD-D Test Environments available:

### 1. OMD-D Readiness Test Environment (“OMD-D RT Environment”)

- For OMD-D clients to perform OMD-D Readiness Test.

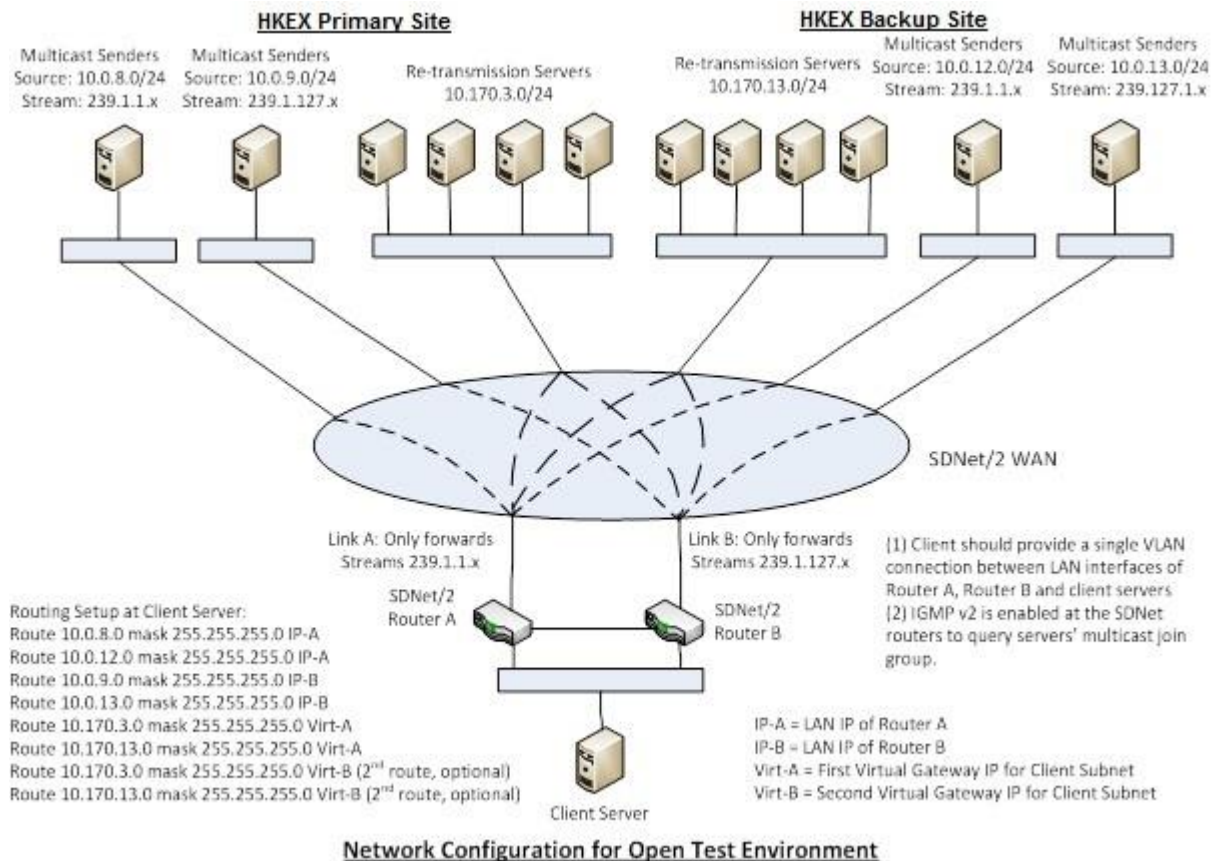
### 2. HKATS Testing Environment

- OMD-D is available in this environment to enable OMD-D EP clients to perform loop test with the HKATS, the HKEX Derivatives Market Trading System.

### 3. HKATS Certification Test Environment

- OMD-D is available in this environment to provide market data for EP clients to perform the certification test for HKATS, the HKEX Derivatives Market Trading System.

For OMD-D Test Environments, the network configuration is basically the same as the Production Environment described in session 2.1 except that the multicast source IP segments are 10.0.8.0/24, 10.0.9.0/24, 10.0.12.0/24 and 10.0.13.0/24. The diagram of the network is shown below:



## 2.2.1 OMD-D Readiness Test Environment

### 2.2.1.1 OMD Derivatives Lite (non-SOM) – Price Depth Feed (conflated)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101	A: 239.1.1.180:51001 B: 239.1.127.180:51001	603	A: 239.1.1.211:51051 B: 239.1.127.211:51051
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201	A: 239.1.1.180:51002 B: 239.1.127.180:51002	703	A: 239.1.1.211:51052 B: 239.1.127.211:51052
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151	A: 239.1.1.180:51003 B: 239.1.127.180:51003	653	A: 239.1.1.211:51053 B: 239.1.127.211:51053
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161	A: 239.1.1.180:51004 B: 239.1.127.180:51004	663	A: 239.1.1.211:51054 B: 239.1.127.211:51054
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.180:51005 B: 239.1.127.180:51005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.189:51001 B: 239.1.127.189:51001	696	A: 239.1.1.211:51055 B: 239.1.127.211:51055
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	137	A: 239.1.1.190:51056 B: 239.1.127.190:51056	637	A: 239.1.1.211:51056 B: 239.1.127.211:51056
	Aggregate Order Book Update (353)				
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	237	A: 239.1.1.190:51057 B: 239.1.127.190:51057	737	A: 239.1.1.211:51057 B: 239.1.127.211:51057
	Aggregate Order Book Update (353)				
<b>Derivatives Non-SOM Trade Statistic Channel</b>	Trade Statistic (360)	179	A: 239.1.1.190:51058 B: 239.1.127.190:51058	679	A: 239.1.1.211:51058 B: 239.1.127.211:51058

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.194:51000 B: 239.1.127.194:51000	677	A: 239.1.1.215:51000 B: 239.1.127.215:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.194:51006 B: 239.1.127.194:51006		

### 2.2.1.2 OMD Derivatives Lite (SOM) – Price Depth Feed (conflated)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	102	A:239.1.1.179:51001B: 239.1.127.179:51001	604	A: 239.1.1.209:51051 B: 239.1.127.209:51051
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	202	A: 239.1.1.179:51002 B: 239.1.127.179:51002	704	A: 239.1.1.209:51052 B: 239.1.127.209:51052
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	152	A: 239.1.1.179:51003 B: 239.1.127.179:51003	654	A: 239.1.1.209:51053 B: 239.1.127.209:51053
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	162	A: 239.1.1.179:51004 B: 239.1.127.179:51004	664	A: 239.1.1.209:51054 B: 239.1.127.209:51054
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.179:51005 B: 239.1.127.179:51005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.187:51001 B: 239.1.127.187:51001	697	A: 239.1.1.209:51055 B: 239.1.127.209:51055
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353)	138	A: 239.1.1.188:51056 B: 239.1.127.188:51056	638	A: 239.1.1.209:51056 B: 239.1.127.209:51056
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353)	238	A: 239.1.1.188:51057 B: 239.1.127.188:51057	738	A: 239.1.1.209:51057 B: 239.1.127.209:51057
<b>Derivatives SOM Trade Statistic Channel</b>	Trade Statistic (360)	180	A: 239.1.1.188:51058 B: 239.1.127.188:51058	680	A: 239.1.1.209:51058 B: 239.1.127.209:51058

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.194:51000 B: 239.1.127.194:51000	677	A: 239.1.1.215:51000 B: 239.1.127.215:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.194:51006 B: 239.1.127.194:51006		

### 2.2.1.3 OMD Derivatives Lite – Order Feed (snapshot)

Multicast Service	Contents	Snapshot Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Market Order Feed (Partition 1) Channel</b>	Add Order (330)	639	A: 239.1.1.211:51059 B: 239.1.127.211:51059		
<b>Derivatives Non-SOM Market Order Feed (Partition 2) Channel</b>	Add Order (330)	739	A: 239.1.1.211:51060 B: 239.1.127.211:51060		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.1.4 OMD Derivatives Standard (non-SOM) (conflated)

		Real-time Market Data Services	Refresh Snapshot Data Services
Multicast Service	Contents	Channel Multicast Channel ID Subscriptions	Channel Multicast Channel ID Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101 A: 239.1.1.180:51001 B: 239.1.127.180:51001	601 A: 239.1.1.201:51001 B: 239.1.127.201:51001
	Combination Definition (305)		
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201 A: 239.1.1.180:51002 B: 239.1.127.180:51002	701 A: 239.1.1.201:51002 B: 239.1.127.201:51002
	Combination Definition (305)		
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151 A: 239.1.1.180:51003 B: 239.1.127.180:51003	651 A: 239.1.1.201:51003 B: 239.1.127.201:51003
	Class Definition (302)		
	Series Definition Extended (304)		
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161 A: 239.1.1.180:51004 B: 239.1.127.180:51004	661 A: 239.1.1.201:51004 B: 239.1.127.201:51004
	Series Status (321)		
	Commodity Status (322)		
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164 A: 239.1.1.180:51005 B: 239.1.127.180:51005	
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191 A: 239.1.1.189:51001 B: 239.1.127.189:51001	691 A: 239.1.1.210:51001 B: 239.1.127.210:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	134 A: 239.1.1.182:51001 B: 239.1.127.182:51001	634 A: 239.1.1.203:51001 B: 239.1.127.203:51001
	Aggregate Order Book Update (353)		
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	234 A: 239.1.1.182:51002 B: 239.1.127.182:51002	734 A: 239.1.1.203:51002 B: 239.1.127.203:51002
	Aggregate Order Book Update (353)		
<b>Derivatives Non-SOM Trade Statistic Channel</b>	Trade Statistic (360)	171 A: 239.1.1.182:51003 B: 239.1.127.182:51003	671 A: 239.1.1.203:51003 B: 239.1.127.203:51003
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177 A: 239.1.1.194:51000 B: 239.1.127.194:51000	677 A: 239.1.1.215:51000 B: 239.1.127.215:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178 A: 239.1.1.194:51006 B: 239.1.127.194:51006	

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.1.5 OMD Derivatives Standard (SOM) (conflated)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.179:51001	602	A: 239.1.1.200:51001
	Combination Definition (305)		B: 239.1.127.179:51001		B: 239.1.127.200:51001
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.179:51002	702	A: 239.1.1.200:51002
	Combination Definition (305)		B: 239.1.127.179:51002		B: 239.1.127.200:51002
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.179:51003	652	A: 239.1.1.200:51003
	Class Definition (302)		B: 239.1.127.179:51003		B: 239.1.127.200:51003
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.179:51004	662	A: 239.1.1.200:51004
	Series Status (321)		B: 239.1.127.179:51004		B: 239.1.127.200:51004
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.179:51005 B: 239.1.127.179:51005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.187:51001 B: 239.1.127.187:51001	692	A: 239.1.1.208:51001 B: 239.1.127.208:51001
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	135	A: 239.1.1.181:51001	635	A: 239.1.1.202:51001
	Aggregate Order Book Update (353)		B: 239.1.127.181:51001		B: 239.1.127.202:51001
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	235	A: 239.1.1.181:51002	735	A: 239.1.1.202:51002
	Aggregate Order Book Update (353)		B: 239.1.127.181:51002		B: 239.1.127.202:51002
<b>Derivatives SOM Trade Statistic Channel</b>	Trade Statistic (360)	172	A: 239.1.1.181:51003 B: 239.1.127.181:51003	672	A: 239.1.1.202:51003 B: 239.1.127.202:51003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.194:51000 B: 239.1.127.194:51000	677	A: 239.1.1.215:51000 B: 239.1.127.215:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.194:51006 B: 239.1.127.194:51006		



## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.1.6 OMD Derivatives Premium (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	101	A: 239.1.1.180:51001 B: 239.1.127.180:51001	601	A: 239.1.1.201:51001 B: 239.1.127.201:51001
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	201	A: 239.1.1.180:51002 B: 239.1.127.180:51002	701	A: 239.1.1.201:51002 B: 239.1.127.201:51002
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	151	A: 239.1.1.180:51003 B: 239.1.127.180:51003	651	A: 239.1.1.201:51003 B: 239.1.127.201:51003
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	161	A: 239.1.1.180:51004 B: 239.1.127.180:51004	661	A: 239.1.1.201:51004 B: 239.1.127.201:51004
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.180:51005 B: 239.1.127.180:51005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.189:51001 B: 239.1.127.189:51001	691	A: 239.1.1.210:51001 B: 239.1.127.210:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	131	A: 239.1.1.186:51001 B: 239.1.127.186:51001	631	A: 239.1.1.207:51001 B: 239.1.127.207:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353)	231	A: 239.1.1.186:51002 B: 239.1.127.186:51002	731	A: 239.1.1.207:51002 B: 239.1.127.207:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

	Trade (350)				
<b>Derivatives Non-SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	167	A: 239.1.1.198:51000 B: 239.1.127.198:51000		
<b>Derivatives Non-SOM Series Statistic Channel</b>	Series Statistics (363)	174	A: 239.1.1.186:51003 B: 239.1.127.186:51003	674	A: 239.1.1.207:51003 B: 239.1.127.207:51003
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.194:51000 B: 239.1.127.194:51000	677	A: 239.1.1.215:51000 B: 239.1.127.215:51000
<b>Implied Volatility Channel</b>	Implied Volatility (367)	194	A: 239.1.1.193:51000 B: 239.1.127.193:51000	694	A: 239.1.1.214:51000 B: 239.1.127.214:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.194:51006 B: 239.1.127.194:51006		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.1.7 OMD Derivatives Premium (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	102	A: 239.1.1.179:51001 B: 239.1.127.179:51001	602	A: 239.1.1.200:51001 B: 239.1.127.200:51001
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	202	A: 239.1.1.179:51002 B: 239.1.127.179:51002	702	A: 239.1.1.200:51002 B: 239.1.127.200:51002
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	152	A: 239.1.1.179:51003 B: 239.1.127.179:51003	652	A: 239.1.1.200:51003 B: 239.1.127.200:51003
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	162	A: 239.1.1.179:51004 B: 239.1.127.179:51004	662	A: 239.1.1.200:51004 B: 239.1.127.200:51004
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.179:51005 B: 239.1.127.179:51005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.187:51001 B: 239.1.127.187:51001	692	A: 239.1.1.208:51001 B: 239.1.127.208:51001
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	132	A: 239.1.1.185:51001 B: 239.1.127.185:51001	632	A: 239.1.1.206:51001 B: 239.1.127.206:51001
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	232	A: 239.1.1.185:51002 B: 239.1.127.185:51002	732	A: 239.1.1.206:51002 B: 239.1.127.206:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	168	A: 239.1.1.197:51000 B: 239.1.127.197:51000		
<b>Derivatives SOM Series Statistic Channel</b>	Series Statistics (363)	175	A: 239.1.1.185:51003 B: 239.1.127.185:51003	675	A: 239.1.1.206:51003 B: 239.1.127.206:51003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.194:51000 B: 239.1.127.194:51000	677	A: 239.1.1.215:51000 B: 239.1.127.215:51000
<b>Implied Volatility Channel</b>	Implied Volatility (367)	195	A: 239.1.1.192:51000 B: 239.1.127.192:51000	695	A: 239.1.1.213:51000 B: 239.1.127.213:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.194:51006 B: 239.1.127.194:51006		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.1.8 OMD Derivatives Full Tick (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	101	A: 239.1.1.180:51001 B: 239.1.127.180:51001	601	A: 239.1.1.201:51001 B: 239.1.127.201:51001
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	201	A: 239.1.1.180:51002 B: 239.1.127.180:51002	701	A: 239.1.1.201:51002 B: 239.1.127.201:51002
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	151	A: 239.1.1.180:51003 B: 239.1.127.180:51003	651	A: 239.1.1.201:51003 B: 239.1.127.201:51003
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	161	A: 239.1.1.180:51004 B: 239.1.127.180:51004	661	A: 239.1.1.201:51004 B: 239.1.127.201:51004
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.180:51005 B: 239.1.127.180:51005		
<b>Derivatives Non-SOM Order, COP and Trade (Partition 1)</b>	Calculated Opening Price (364) Add Order (330) Modify Order (331) Delete Order (332) Orderbook Clear (335) Trade (350)	121	A: 239.1.1.184:51001 B: 239.1.127.184:51001	621	A: 239.1.1.205:51001 B: 239.1.127.205:51001
<b>Derivatives Non-SOM Order, COP and Trade (Partition 2)</b>	Calculated Opening Price (364) Add Order (330) Modify Order (331)	221	A: 239.1.1.184:51002 B: 239.1.127.184:51002	721	A: 239.1.1.205:51002 B: 239.1.127.205:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives Non-SOM Trade Adjustment Channel</b>	Trade (350)	167	A: 239.1.1.198:51000		
	Trade Amendment (356)		B: 239.1.127.198:51000		
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.194:51000	677	A: 239.1.1.215:51000
			B: 239.1.127.194:51000		B: 239.1.127.215:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.194:51006		
			B: 239.1.127.194:51006		

### 2.2.1.9 OMD Derivatives Full Tick (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.179:51001 B: 239.1.127.179:51001	602	A: 239.1.1.200:51001 B: 239.1.127.200:51001
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.179:51002 B: 239.1.127.179:51002	702	A: 239.1.1.200:51002 B: 239.1.127.200:51002
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.179:51003 B: 239.1.127.179:51003	652	A: 239.1.1.200:51003 B: 239.1.127.200:51003
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.179:51004 B: 239.1.127.179:51004	662	A: 239.1.1.200:51004 B: 239.1.127.200:51004
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.179:51005 B: 239.1.127.179:51005		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Order, COP and Trade (Partition 1)</b>	Calculated Opening Price (364)	122	A: 239.1.1.183:51001 B: 239.1.127.183:51001	622	A: 239.1.1.204:51001 B: 239.1.127.204:51001
	Add Order (330)				
	Modify Order (331)				
	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives SOM Order, COP and Trade (Partition 2)</b>	Calculated Opening Price (364)	222	A: 239.1.1.183:51002 B: 239.1.127.183:51002	722	A: 239.1.1.204:51002 B: 239.1.127.204:51002
	Add Order (330)				
	Modify Order (331)				
	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350)	168	A: 239.1.1.197:51000		
	Trade Amendment (356)		B: 239.1.127.197:51000		
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.194:51000 B: 239.1.127.194:51000	677	A: 239.1.1.215:51000 B: 239.1.127.215:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.194:51006 B: 239.1.127.194:51006		

2.2.1.10 OMD Derivatives Trade (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
Derivatives Non-SOM Trade Channel (Partition 1)	Trade (350)	111	A: 239.1.1.196:51001 B: 239.1.127.196:51001		
Derivatives Non-SOM Trade Channel (Partition 2)	Trade (350)	211	A: 239.1.1.196:51002 B: 239.1.127.196:51002		
Derivatives Non-SOM Trade Adjustment Channel	Trade (350) Trade Amendment (356)	167	A: 239.1.1.198:51000 B: 239.1.127.198:51000		

2.2.1.11 OMD Derivatives Trade (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
Derivatives SOM Trade Channel (Partition 1)	Trade (350)	112	A: 239.1.1.195:51001 B: 239.1.127.195:51001		
Derivatives SOM Trade Channel (Partition 2)	Trade (350)	212	A: 239.1.1.195:51002 B: 239.1.127.195:51002		
Derivatives SOM Trade Adjustment Channel	Trade (350) Trade Amendment (356)	168	A: 239.1.1.197:51000 B: 239.1.127.197:51000		

2.2.1.12 HKEX OMD Retransmission Unicast Connectivity

HKEX provides a Retransmission Service to its OMD clients to recover lost multicast packet. Functional details of the Retransmission Service are provided in the Interface Specification. Find below the Unicast Addresses to connect to the OMD Retransmission Servers in **OMD-D Readiness Test environment**.

Retransmission Server	IP Unicast Address
Primary server in primary site	10.170.3.141:55455
Secondary server in primary site	10.170.3.142:55455
Primary server in DR site	10.170.13.141:55455
Secondary server in DR site	10.170.13.142:55455



## 2.2.2 HKATS Testing Environment

### 2.2.2.1 OMD Derivatives Lite (non-SOM) – Price Depth Feed (conflated)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101	A: 239.1.1.218:51001	603	A: 239.1.1.249:51051
	Combination Definition (305)		B: 239.1.127.218:51001		B: 239.1.127.249:51051
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201	A: 239.1.1.218:51002	703	A: 239.1.1.249:51052
	Combination Definition (305)		B: 239.1.127.218:51002		B: 239.1.127.249:51052
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151	A: 239.1.1.218:51003	653	A: 239.1.1.249:51053
	Class Definition (302)		B: 239.1.127.218:51003		B: 239.1.127.249:51053
	Series Definition Extended (304)				
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161	A: 239.1.1.218:51004	663	A: 239.1.1.249:51054
	Series Status (321)		B: 239.1.127.218:51004		B: 239.1.127.249:51054
	Commodity Status (322)				
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.218:51005 B: 239.1.127.218:51005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.227:51001 B: 239.1.127.227:51001	696	A: 239.1.1.249:51055 B: 239.1.127.249:51055
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	137	A: 239.1.1.228:51056	637	A: 239.1.1.249:51056
	Aggregate Order Book Update (353)		B: 239.1.127.228:51056		B: 239.1.127.249:51056
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	237	A: 239.1.1.228:51057	737	A: 239.1.1.249:51057
	Aggregate Order Book Update (353)		B: 239.1.127.228:51057		B: 239.1.127.249:51057
<b>Derivatives Non-SOM Trade Statistic</b>	Trade Statistic (360)	179	A: 239.1.1.228:51058	679	A: 239.1.1.249:51058
			B: 239.1.127.228:51058		B: 239.1.127.249:51058

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

Channel					
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:51000	677	A: 239.1.1.253:51000
			B: 239.1.127.232:51000		B: 239.1.127.253:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:51006		B: 239.1.127.232:51006
			B: 239.1.127.232:51006		

### 2.2.2.2 OMD Derivatives Lite (SOM) – Price Depth Feed (conflated)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.217:51001	604	A: 239.1.1.247:51051
	Combination Definition (305)		B: 239.1.127.217:51001		B: 239.1.127.247:51051
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.217:51002	704	A: 239.1.1.247:51052
	Combination Definition (305)		B: 239.1.127.217:51002		B: 239.1.127.247:51052
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.217:51003	654	A: 239.1.1.247:51053
	Class Definition (302)		B: 239.1.127.217:51003		B: 239.1.127.247:51053
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.217:51004	664	A: 239.1.1.247:51054
	Series Status (321)		B: 239.1.127.217:51004		B: 239.1.127.247:51054
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.217:51005		B: 239.1.127.217:51005
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.225:51001	697	A: 239.1.1.247:51055
			B: 239.1.127.225:51001		B: 239.1.127.247:51055
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	138	A: 239.1.1.226:51056	638	A: 239.1.1.247:51056
	Aggregate Order Book Update (353)		B: 239.1.127.226:51056		B: 239.1.127.247:51056
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	238	A: 239.1.1.226:51057	738	A: 239.1.1.247:51057
	Aggregate Order Book Update (353)		B: 239.1.127.226:51057		B: 239.1.127.247:51057

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Trade Statistic Channel</b>	Trade Statistic (360)	180	A: 239.1.1.226:51058 B: 239.1.127.226:51058	680	A: 239.1.1.247:51058 B: 239.1.127.247:51058
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:51000 B: 239.1.127.232:51000	677	A: 239.1.1.253:51000 B: 239.1.127.253:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:51006 B: 239.1.127.232:51006		

### 2.2.2.3 OMD Derivatives Lite – Order Feed (snapshot)

Multicast Service	Contents	Snapshot Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Market Order Feed (Partition 1) Channel</b>	Add Order (330)	639	A: 239.1.1.249:51059 B: 239.1.127.249:51059		
<b>Derivatives Non-SOM Market Order Feed (Partition 2) Channel</b>	Add Order (330)	739	A: 239.1.1.249:51060 B: 239.1.127.249:51060		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.2.4 OMD Derivatives Standard (non-SOM) (conflated)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101	A: 239.1.1.218:51001	601	A: 239.1.1.239:51001
	Combination Definition (305)		B: 239.1.127.218:51001		B: 239.1.127.239:51001
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201	A: 239.1.1.218:51002	701	A: 239.1.1.239:51002
	Combination Definition (305)		B: 239.1.127.218:51002		B: 239.1.127.239:51002
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151	A: 239.1.1.218:51003	651	A: 239.1.1.239:51003
	Class Definition (302)		B: 239.1.127.218:51003		B: 239.1.127.239:51003
	Series Definition Extended (304)				
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161	A: 239.1.1.218:51004	661	A: 239.1.1.239:51004
	Series Status (321)		B: 239.1.127.218:51004		B: 239.1.127.239:51004
	Commodity Status (322)				
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.218:51005 B: 239.1.127.218:51005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.227:51001 B: 239.1.127.227:51001	691	A: 239.1.1.248:51001 B: 239.1.127.248:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	134	A: 239.1.1.220:51001	634	A: 239.1.1.241:51001
	Aggregate Order Book Update (353)		B: 239.1.127.220:51001		B: 239.1.127.241:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	234	A: 239.1.1.220:51002	734	A: 239.1.1.241:51002
	Aggregate Order Book Update (353)		B: 239.1.127.220:51002		B: 239.1.127.241:51002
<b>Derivatives Non-SOM Trade Statistic Channel</b>	Trade Statistic (360)	171	A: 239.1.1.220:51003 B: 239.1.127.220:51003	671	A: 239.1.1.241:51003 B: 239.1.127.241:51003

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:51000 B: 239.1.127.232:51000	677	A: 239.1.1.253:51000 B: 239.1.127.253:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:51006 B: 239.1.127.232:51006		

### 2.2.2.5 OMD Derivatives Standard (SOM) (conflated)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.217:51001 B: 239.1.127.217:51001	602	A: 239.1.1.238:51001 B: 239.1.127.238:51001
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.217:51002 B: 239.1.127.217:51002	702	A: 239.1.1.238:51002 B: 239.1.127.238:51002
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.217:51003 B: 239.1.127.217:51003	652	A: 239.1.1.238:51003 B: 239.1.127.238:51003
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.217:51004 B: 239.1.127.217:51004	662	A: 239.1.1.238:51004 B: 239.1.127.238:51004
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.217:51005 B: 239.1.127.217:51005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.225:51001 B: 239.1.127.225:51001	692	A: 239.1.1.246:51001 B: 239.1.127.246:51001
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	135	A: 239.1.1.219:51001 B: 239.1.127.219:51001	635	A: 239.1.1.240:51001 B: 239.1.127.240:51001
	Aggregate Order Book Update (353)				
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	235	A: 239.1.1.219:51002 B: 239.1.127.219:51002	735	A: 239.1.1.240:51002 B: 239.1.127.240:51002
	Aggregate Order Book Update (353)				

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Trade Statistic Channel</b>	Trade Statistic (360)	172	A: 239.1.1.219:51003 B: 239.1.127.219:51003	672	A: 239.1.1.240:51003 B: 239.1.127.240:51003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:51000 B: 239.1.127.232:51000	677	A: 239.1.1.253:51000 B: 239.1.127.253:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:51006 B: 239.1.127.232:51006		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.2.6 OMD Derivatives Premium (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	101	A: 239.1.1.218:51001 B: 239.1.127.218:51001	601	A: 239.1.1.239:51001 B: 239.1.127.239:51001
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	201	A: 239.1.1.218:51002 B: 239.1.127.218:51002	701	A: 239.1.1.239:51002 B: 239.1.127.239:51002
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	151	A: 239.1.1.218:51003 B: 239.1.127.218:51003	651	A: 239.1.1.239:51003 B: 239.1.127.239:51003
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	161	A: 239.1.1.218:51004 B: 239.1.127.218:51004	661	A: 239.1.1.239:51004 B: 239.1.127.239:51004
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.218:51005 B: 239.1.127.218:51005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.227:51001 B: 239.1.127.227:51001	691	A: 239.1.1.248:51001 B: 239.1.127.248:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	131	A: 239.1.1.224:51001 B: 239.1.127.224:51001	631	A: 239.1.1.245:51001 B: 239.1.127.245:51001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353)	231	A: 239.1.1.224:51002 B: 239.1.127.224:51002	731	A: 239.1.1.245:51002 B: 239.1.127.245:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

	Trade (350)				
<b>Derivatives Non-SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	167	A: 239.1.1.236:51000 B: 239.1.127.236:51000		
<b>Derivatives Non-SOM Series Statistic Channel</b>	Series Statistics (363)	174	A: 239.1.1.224:51003 B: 239.1.127.224:51003	674	A: 239.1.1.245:51003 B: 239.1.127.245:51003
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:51000 B: 239.1.127.232:51000	677	A: 239.1.1.253:51000 B: 239.1.127.253:51000
<b>Implied Volatility Channel</b>	Implied Volatility (367)	194	A: 239.1.1.231:51000 B: 239.1.127.231:51000	694	A: 239.1.1.252:51000 B: 239.1.127.252:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:51006 B: 239.1.127.232:51006		



## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.2.7 OMD Derivatives Premium (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	102	A: 239.1.1.217:51001 B: 239.1.127.217:51001	602	A: 239.1.1.238:51001 B: 239.1.127.238:51001
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	202	A: 239.1.1.217:51002 B: 239.1.127.217:51002	702	A: 239.1.1.238:51002 B: 239.1.127.238:51002
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	152	A: 239.1.1.217:51003 B: 239.1.127.217:51003	652	A: 239.1.1.238:51003 B: 239.1.127.238:51003
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	162	A: 239.1.1.217:51004 B: 239.1.127.217:51004	662	A: 239.1.1.238:51004 B: 239.1.127.238:51004
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.217:51005 B: 239.1.127.217:51005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.225:51001 B: 239.1.127.225:51001	692	A: 239.1.1.246:51001 B: 239.1.127.246:51001
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	132	A: 239.1.1.223:51001 B: 239.1.127.223:51001	632	A: 239.1.1.244:51001 B: 239.1.127.244:51001
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	232	A: 239.1.1.223:51002 B: 239.1.127.223:51002	732	A: 239.1.1.244:51002 B: 239.1.127.244:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	168	A: 239.1.1.235:51000 B: 239.1.127.235:51000		
<b>Derivatives SOM Series Statistic Channel</b>	Series Statistics (363)	175	A: 239.1.1.223:51003 B: 239.1.127.223:51003	675	A: 239.1.1.244:51003 B: 239.1.127.244:51003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:51000 B: 239.1.127.232:51000	677	A: 239.1.1.253:51000 B: 239.1.127.253:51000
<b>Implied Volatility Channel</b>	Implied Volatility (367)	195	A: 239.1.1.230:51000 B: 239.1.127.230:51000	695	A: 239.1.1.251:51000 B: 239.1.127.251:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:51006 B: 239.1.127.232:51006		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.2.8 OMD Derivatives Full Tick (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	101	A: 239.1.1.218:51001 B: 239.1.127.218:51001	601	A: 239.1.1.239:51001 B: 239.1.127.239:51001
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	201	A: 239.1.1.218:51002 B: 239.1.127.218:51002	701	A: 239.1.1.239:51002 B: 239.1.127.239:51002
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	151	A: 239.1.1.218:51003 B: 239.1.127.218:51003	651	A: 239.1.1.239:51003 B: 239.1.127.239:51003
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	161	A: 239.1.1.218:51004 B: 239.1.127.218:51004	661	A: 239.1.1.239:51004 B: 239.1.127.239:51004
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.218:51005 B: 239.1.127.218:51005		
<b>Derivatives Non-SOM Order, COP and Trade (Partition 1)</b>	Calculated Opening Price (364) Add Order (330) Modify Order (331) Delete Order (332) Orderbook Clear (335) Trade (350)	121	A: 239.1.1.222:51001 B: 239.1.127.222:51001	621	A: 239.1.1.243:51001 B: 239.1.127.243:51001
<b>Derivatives Non-SOM Order, COP and Trade (Partition 2)</b>	Calculated Opening Price (364) Add Order (330) Modify Order (331)	221	A: 239.1.1.222:51002 B: 239.1.127.222:51002	721	A: 239.1.1.243:51002 B: 239.1.127.243:51002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives Non-SOM Trade Adjustment Channel</b>	Trade (350)	167	A: 239.1.1.236:51000		
	Trade Amendment (356)		B: 239.1.127.236:51000		
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:51000	677	A: 239.1.1.253:51000
			B: 239.1.127.232:51000		B: 239.1.127.253:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:51006		
			B: 239.1.127.232:51006		

### 2.2.2.9 OMD Derivatives Full Tick (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.217:51001 B: 239.1.127.217:51001	602	A: 239.1.1.238:51001 B: 239.1.127.238:51001
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.217:51002 B: 239.1.127.217:51002	702	A: 239.1.1.238:51002 B: 239.1.127.238:51002
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.217:51003 B: 239.1.127.217:51003	652	A: 239.1.1.238:51003 B: 239.1.127.238:51003
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.217:51004 B: 239.1.127.217:51004	662	A: 239.1.1.238:51004 B: 239.1.127.238:51004
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.217:51005 B: 239.1.127.217:51005		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Order, COP and Trade (Partition 1)</b>	Calculated Opening Price (364)	122	A: 239.1.1.221:51001 B: 239.1.127.221:51001	622	A: 239.1.1.242:51001 B: 239.1.127.242:51001
	Add Order (330)				
	Modify Order (331)				
	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives SOM Order, COP and Trade (Partition 2)</b>	Calculated Opening Price (364)	222	A: 239.1.1.221:51002 B: 239.1.127.221:51002	722	A: 239.1.1.242:51002 B: 239.1.127.242:51002
	Add Order (330)				
	Modify Order (331)				
	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350)	168	A: 239.1.1.235:51000		
	Trade Amendment (356)		B: 239.1.127.235:51000		
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:51000 B: 239.1.127.232:51000	677	A: 239.1.1.253:51000 B: 239.1.127.253:51000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:51006 B: 239.1.127.232:51006		

2.2.2.10 OMD Derivatives Trade (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
Derivatives Non-SOM Trade Channel (Partition 1)	Trade (350)	111	A: 239.1.1.234:51001 B: 239.1.127.234:51001		
Derivatives Non-SOM Trade Channel (Partition 2)	Trade (350)	211	A: 239.1.1.234:51002 B: 239.1.127.234:51002		
Derivatives Non-SOM Trade Adjustment Channel	Trade (350) Trade Amendment (356)	167	A: 239.1.1.236:51000 B: 239.1.127.236:51000		

2.2.2.11 OMD Derivatives Trade (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
Derivatives SOM Trade Channel (Partition 1)	Trade (350)	112	A: 239.1.1.233:51001 B: 239.1.127.233:51001		
Derivatives SOM Trade Channel (Partition 2)	Trade (350)	212	A: 239.1.1.233:51002 B: 239.1.127.233:51002		
Derivatives SOM Trade Adjustment Channel	Trade (350) Trade Amendment (356)	168	A: 239.1.1.235:51000 B: 239.1.127.235:51000		

2.2.2.12 HKEX OMD Retransmission Unicast Connectivity

HKEX provides a Retransmission Service to its OMD clients to recover lost multicast packet. Functional details of the Retransmission Service are provided in the Interface Specification. Find below the Unicast Addresses to connect to the OMD Retransmission Servers in **HKATS Testing environment**.

<b>OMD-D at HKATS Testing Environment</b>	
<i>- for EPs to perform End-to-end Loop Test with HKATS</i>	
Primary server in primary site	10.170.3.145:55455

## 2.2.3 HKATS Certification Test Environment

### 2.2.3.1 OMD Derivatives Lite (non-SOM) – Price Depth Feed (conflated)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101	A: 239.1.1.218:53001	603	A: 239.1.1. 249:53051
	Combination Definition (305)		B: 239.1.127.218:53001		B: 239.1.127.249:53051
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201	A: 239.1.1.218:53002	703	A: 239.1.1.249:53052
	Combination Definition (305)		B: 239.1.127.218:53002		B: 239.1.127.249:53052
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151	A: 239.1.1.218:53003	653	A: 239.1.1.249:53053
	Class Definition (302)		B: 239.1.127.218:53003		B: 239.1.127.249:53053
	Series Definition Extended (304)				
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161	A: 239.1.1.218:53004	663	A: 239.1.1.249:53054
	Series Status (321)		B: 239.1.127.218:53004		B: 239. 1.127.249:53054
	Commodity Status (322)				
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.218:53005 B: 239.1.127.218:53005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.227:53001 B: 239.1.127.227:53001	696	A: 239.1.1.249:53055 B: 239.1.127.249:53055
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	137	A: 239.1.1.228:53056	637	A: 239.1.1.249:53056
	Aggregate Order Book Update (353)		B: 239.1.127.228:53056		B: 239.1.127.249:53056
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	237	A: 239.1.1.228:53057	737	A: 239.1.1.249:53057
	Aggregate Order Book Update (353)		B: 239.1.127.228:53057		B: 239.1.127.249:53057
<b>Derivatives Non-SOM Trade Statistic</b>	Trade Statistic (360)	179	A: 239.1.1.228:53058	679	A: 239.1.1.249:53058
			B: 239.1.127.228:53058		B: 239.1.127.249:53058

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

Channel					
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:53000	677	A: 239.1.1.253:53000
			B: 239.1.127.232:53000		B: 239.1.127.253:53000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:53006		
			B: 239.1.127.232:53006		

### 2.2.3.2 OMD Derivatives Lite (SOM) – Price Depth Feed (conflated)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.217:53001	604	A: 239.1.1.247:53051
	Combination Definition (305)		B: 239.1.127.217:53001		B: 239.1.127.247:53051
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.217:53002	704	A: 239.1.1.247:53052
	Combination Definition (305)		B: 239.1.127.217:53002		B: 239.1.127.247:53052
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.217:53003	654	A: 239.1.1.247:53053
	Class Definition (302)		B: 239.1.127.217:53003		B: 239.1.127.247:53053
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.217:53004	664	A: 239.1.1.247:53054
	Series Status (321)		B: 239.1.127.217:53004		B: 239.1.127.247:53054
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.217:53005		
			B: 239.1.127.217:53005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.225:53001	697	A: 239.1.1.247:53055
			B: 239.1.127.225:53001		B: 239.1.127.247:53055
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	138	A: 239.1.1.226:53056	638	A: 239.1.1.247:53056
	Aggregate Order Book Update (353)		B: 239.1.127.226:53056		B: 239.1.127.247:53056
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	238	A: 239.1.1.226:53057	738	A: 239.1.1.247:53057
	Aggregate Order Book Update (353)		B: 239.1.127.226:53057		B: 239.1.127.247:53057



## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Trade Statistic Channel</b>	Trade Statistic (360)	180	A: 239.1.1.226:53058 B: 239.1.127.226:53058	680	A: 239.1.1.247:53058 B: 239.1.127.247:53058
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:53000 B: 239.1.127.232:53000	677	A: 239.1.1.253:53000 B: 239.1.127.253:53000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:53006 B: 239.1.127.232:53006		

### 2.2.3.3 OMD Derivatives Lite – Order Feed (snapshot)

Multicast Service	Contents	Snapshot Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Market Order Feed (Partition 1) Channel</b>	Add Order (330)	639	A: 239.1.1.249:53059 B: 239.1.127.249:53059		
<b>Derivatives Non-SOM Market Order Feed (Partition 2) Channel</b>	Add Order (330)	739	A: 239.1.1.249:53060 B: 239.1.127.249:53060		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.3.4 OMD Derivatives Standard (non-SOM) (conflated)

		Real-time Market Data Services		Refresh Snapshot Data Services	
Multicast Service	Contents	Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101	A: 239.1.1.218:53001 B: 239.1.127.218:53001	601	A: 239.1.1.239:53001 B: 239.1.127.239:53001
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201	A: 239.1.1.218:53002 B: 239.1.127.218:53002	701	A: 239.1.1.239:53002 B: 239.1.127.239:53002
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151	A: 239.1.1.218:53003 B: 239.1.127.218:53003	651	A: 239.1.1.239:53003 B: 239.1.127.239:53003
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161	A: 239.1.1.218:53004 B: 239.1.127.218:53004	661	A: 239.1.1.239:53004 B: 239.1.127.239:53004
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.218:53005 B: 239.1.127.218:53005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.227:53001 B: 239.1.127.227:53001	691	A: 239.1.1.248:53001 B: 239.1.127.248:53001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	134	A: 239.1.1.220:53001 B: 239.1.127.220:53001	634	A: 239.1.1.241:53001 B: 239.1.127.241:53001
	Aggregate Order Book Update (353)				
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	234	A: 239.1.1.220:53002 B: 239.1.127.220:53002	734	A: 239.1.1.241:53002 B: 239.1.127.241:53002
	Aggregate Order Book Update (353)				
<b>Derivatives Non-SOM Trade Statistic Channel</b>	Trade Statistic (360)	171	A: 239.1.1.220:53003 B: 239.1.127.220:53003	671	A: 239.1.1.241:53003 B: 239.1.127.241:53003
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:53000 B: 239.1.127.232:53000	677	A: 239.1.1.253:53000 B: 239.1.127.253:53000

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:53006 B: 239.1.127.232:53006
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### 2.2.3.5 OMD Derivatives Standard (SOM) (conflated)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	102	A: 239.1.1.217:53001 B: 239.1.127.217:53001	602	A: 239.1.1.238:53001 B: 239.1.127.238:53001
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	202	A: 239.1.1.217:53002 B: 239.1.127.217:53002	702	A: 239.1.1.238:53002 B: 239.1.127.238:53002
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	152	A: 239.1.1.217:53003 B: 239.1.127.217:53003	652	A: 239.1.1.238:53003 B: 239.1.127.238:53003
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	162	A: 239.1.1.217:53004 B: 239.1.127.217:53004	662	A: 239.1.1.238:53004 B: 239.1.127.238:53004
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.217:53005 B: 239.1.127.217:53005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.225:53001 B: 239.1.127.225:53001	692	A: 239.1.1.246:53001 B: 239.1.127.246:53001
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353)	135	A: 239.1.1.219:53001 B: 239.1.127.219:53001	635	A: 239.1.1.240:53001 B: 239.1.127.240:53001
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353)	235	A: 239.1.1.219:53002 B: 239.1.127.219:53002	735	A: 239.1.1.240:53002 B: 239.1.127.240:53002
<b>Derivatives SOM Trade Statistic Channel</b>	Trade Statistic (360)	172	A: 239.1.1.219:53003 B: 239.1.127.219:53003	672	A: 239.1.1.240:53003 B: 239.1.127.240:53003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:53000 B: 239.1.127.232:53000	677	A: 239.1.1.253:53000 B: 239.1.127.253:53000

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives DR</b>	Disaster Recovery	178	A: 239.1.1.232:53006
<b>Signal Channel</b>	Signal (105)		B: 239.1.127.232:53006

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.3.6 OMD Derivatives Premium (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101	A: 239.1.1.218:53001	601	A: 239.1.1.239:53001
			B: 239.1.127.218:53001		B: 239.1.127.239:53001
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201	A: 239.1.1.218:53002	701	A: 239.1.1.239:53002
			B: 239.1.127.218:53002		B: 239.1.127.239:53002
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151	A: 239.1.1.218:53003	651	A: 239.1.1.239:53003
			B: 239.1.127.218:53003		B: 239.1.127.239:53003
	Class Definition (302) Series Definition Extended (304)				
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161	A: 239.1.1.218:53004	661	A: 239.1.1.239:53004
			B: 239.1.127.218:53004		B: 239.1.127.239:53004
	Series Status (321) Commodity Status (322)				
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.218:53005 B: 239.1.127.218:53005		
<b>Non-SOM Open Interest Channel</b>	Open Interest (366)	191	A: 239.1.1.227:53001 B: 239.1.127.227:53001	691	A: 239.1.1.248:53001 B: 239.1.127.248:53001
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364)	131	A: 239.1.1.224:53001	631	A: 239.1.1.245:53001
			B: 239.1.127.224:53001		B: 239.1.127.245:53001
	Aggregate Order Book Update (353) Trade (350)				
<b>Derivatives Non-SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364)	231	A: 239.1.1.224:53002	731	A: 239.1.1.245:53002
			B: 239.1.127.224:53002		B: 239.1.127.245:53002
	Aggregate Order Book Update (353)				

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

	Trade (350)				
<b>Derivatives Non-SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	167	A: 239.1.1.236:53000 B: 239.1.127.236:53000		
<b>Derivatives Non-SOM Series Statistic Channel</b>	Series Statistics (363)	174	A: 239.1.1.224:53003 B: 239.1.127.224:53003	674	A: 239.1.1.245:53003 B: 239.1.127.245:53003
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:53000 B: 239.1.127.232:53000	677	A: 239.1.1.253:53000 B: 239.1.127.253:53000
<b>Implied Volatility Channel</b>	Implied Volatility (367)	194	A: 239.1.1.231:53000 B: 239.1.127.231:53000	694	A: 239.1.1.252:53000 B: 239.1.127.252:53000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:53006 B: 239.1.127.232:53006		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.3.7 OMD Derivatives Premium (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303) Combination Definition (305)	102	A: 239.1.1.217:53001 B: 239.1.127.217:53001	602	A: 239.1.1.238:53001 B: 239.1.127.238:53001
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303) Combination Definition (305)	202	A: 239.1.1.217:53002 B: 239.1.127.217:53002	702	A: 239.1.1.238:53002 B: 239.1.127.238:53002
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301) Class Definition (302) Series Definition Extended (304)	152	A: 239.1.1.217:53003 B: 239.1.127.217:53003	652	A: 239.1.1.238:53003 B: 239.1.127.238:53003
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320) Series Status (321) Commodity Status (322)	162	A: 239.1.1.217:53004 B: 239.1.127.217:53004	662	A: 239.1.1.238:53004 B: 239.1.127.238:53004
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.217:53005 B: 239.1.127.217:53005		
<b>SOM Open Interest Channel</b>	Open Interest (366)	192	A: 239.1.1.225:53001 B: 239.1.127.225:53001	692	A: 239.1.1.246:53001 B: 239.1.127.246:53001
<b>Derivatives SOM Level 2 Price and COP (Partition 1) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	132	A: 239.1.1.223:53001 B: 239.1.127.223:53001	632	A: 239.1.1.244:53001 B: 239.1.127.244:53001
<b>Derivatives SOM Level 2 Price and COP (Partition 2) Channel</b>	Calculated Opening Price (364) Aggregate Order Book Update (353) Trade (350)	232	A: 239.1.1.223:53002 B: 239.1.127.223:53002	732	A: 239.1.1.244:53002 B: 239.1.127.244:53002

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350) Trade Amendment (356)	168	A: 239.1.1.235:53000 B: 239.1.127.235:53000		
<b>Derivatives SOM Series Statistic Channel</b>	Series Statistics (363)	175	A: 239.1.1.223:53003 B: 239.1.127.223:53003	675	A: 239.1.1.244:53003 B: 239.1.127.244:53003
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:53000 B: 239.1.127.232:53000	677	A: 239.1.1.253:53000 B: 239.1.127.253:53000
<b>Implied Volatility Channel</b>	Implied Volatility (367)	195	A: 239.1.1.230:53000 B: 239.1.127.230:53000	695	A: 239.1.1.251:53000 B: 239.1.127.251:53000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:53006 B: 239.1.127.232:53006		



## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

### 2.2.3.8 OMD Derivatives Full Tick (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	101	A: 239.1.1.218:53001	601	A: 239.1.1.239:53001
			B: 239.1.127.218:53001		B: 239.1.127.239:53001
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	201	A: 239.1.1.218:53002	701	A: 239.1.1.239:53002
			B: 239.1.127.218:53002		B: 239.1.127.239:53002
	Combination Definition (305)				
<b>Derivatives Non-SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	151	A: 239.1.1.218:53003	651	A: 239.1.1.239:53003
			B: 239.1.127.218:53003		B: 239.1.127.239:53003
	Class Definition (302) Series Definition Extended (304)				
<b>Derivatives Non-SOM Series &amp; Market Status Channel</b>	Market Status (320)	161	A: 239.1.1.218:53004	661	A: 239.1.1.239:53004
			B: 239.1.127.218:53004		B: 239.1.127.239:53004
	Series Status (321) Commodity Status (322)				
<b>Derivatives Non-SOM Quote Request Channel</b>	Quote Request (336)	164	A: 239.1.1.218:53005 B: 239.1.127.218:53005		
<b>Derivatives Non-SOM Order, COP and Trade (Partition 1)</b>	Calculated Opening Price (364)	121	A: 239.1.1.222:53001	621	A: 239.1.1.243:53001
			B: 239.1.127.222:53001		B: 239.1.127.243:53001
	Add Order (330)				
	Modify Order (331)				
	Delete Order (332)				
	Orderbook Clear (335) Trade (350)				
<b>Derivatives Non-SOM Order, COP and Trade (Partition 2)</b>	Calculated Opening Price (364)	221	A: 239.1.1.222:53002	721	A: 239.1.1.243:53002
			B: 239.1.127.222:53002		B: 239.1.127.243:53002
	Add Order (330) Modify Order (331)				

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives Non-SOM Trade Adjustment Channel</b>	Trade (350)	167	A: 239.1.1.236:53000		
	Trade Amendment (356)		B: 239.1.127.236:53000		
<b>Derivatives Non-SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:53000	677	A: 239.1.1.253:53000
			B: 239.1.127.232:53000		B: 239.1.127.253:53000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:53006		
			B: 239.1.127.232:53006		

### 2.2.3.9 OMD Derivatives Full Tick (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 1)</b>	Series Definition Base (303)	102	A: 239.1.1.217:53001 B: 239.1.127.217:53001	602	A: 239.1.1.238:53001 B: 239.1.127.238:53001
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel (Partition 2)</b>	Series Definition Base (303)	202	A: 239.1.1.217:53002 B: 239.1.127.217:53002	702	A: 239.1.1.238:53002 B: 239.1.127.238:53002
	Combination Definition (305)				
<b>Derivatives SOM Series Definition Reference Data Channel</b>	Commodity Definition (301)	152	A: 239.1.1.217:53003 B: 239.1.127.217:53003	652	A: 239.1.1.238:53003 B: 239.1.127.238:53003
	Class Definition (302)				
	Series Definition Extended (304)				
<b>Derivatives SOM Series &amp; Market Status Channel</b>	Market Status (320)	162	A: 239.1.1.217:53004 B: 239.1.127.217:53004	662	A: 239.1.1.238:53004 B: 239.1.127.238:53004
	Series Status (321)				
	Commodity Status (322)				
<b>Derivatives SOM Quote Request Channel</b>	Quote Request (336)	165	A: 239.1.1.217:53005 B: 239.1.127.217:53005		

## Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

<b>Derivatives SOM Order, COP and Trade (Partition 1)</b>	Calculated Opening Price (364)	122	A: 239.1.1.221:53001 B: 239.1.127.221:53001	622	A: 239.1.1.242:53001 B: 239.1.127.242:53001
	Add Order (330)				
	Modify Order (331)				
	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives SOM Order, COP and Trade (Partition 2)</b>	Calculated Opening Price (364)	222	A: 239.1.1.221:53002 B: 239.1.127.221:53002	722	A: 239.1.1.242:53002 B: 239.1.127.242:53002
	Add Order (330)				
	Modify Order (331)				
	Delete Order (332)				
	Orderbook Clear (335)				
	Trade (350)				
<b>Derivatives SOM Trade Adjustment Channel</b>	Trade (350)	168	A: 239.1.1.235:53000		
	Trade Amendment (356)		B: 239.1.127.235:53000		
<b>Derivatives SOM Market Alert Channel</b>	Market Alert (323)	177	A: 239.1.1.232:53000 B: 239.1.127.232:53000	677	A: 239.1.1.253:53000 B: 239.1.127.253:53000
<b>Derivatives DR Signal Channel</b>	Disaster Recovery Signal (105)	178	A: 239.1.1.232:53006 B: 239.1.127.232:53006		

2.2.3.10 OMD Derivatives Trade (non-SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
Derivatives Non-SOM Trade Channel (Partition 1)	Trade (350)	111	A: 239.1.1.234:53001 B: 239.1.127.234:53001		
Derivatives Non-SOM Trade Channel (Partition 2)	Trade (350)	211	A: 239.1.1.234:53002 B: 239.1.127.234:53002		
Derivatives Non-SOM Trade Adjustment Channel	Trade (350) Trade Amendment (356)	167	A: 239.1.1.236:53000 B: 239.1.127.236:53000		

2.2.3.11 OMD Derivatives Trade (SOM) (streaming)

Multicast Service	Contents	Real-time Market Data Services		Refresh Snapshot Data Services	
		Channel ID	Multicast Channel Subscriptions	Channel ID	Multicast Channel Subscriptions
Derivatives SOM Trade Channel (Partition 1)	Trade (350)	112	A: 239.1.1.233:53001 B: 239.1.127.233:53001		
Derivatives SOM Trade Channel (Partition 2)	Trade (350)	212	A: 239.1.1.233:53002 B: 239.1.127.233:53002		
Derivatives SOM Trade Adjustment Channel	Trade (350) Trade Amendment (356)	168	A: 239.1.1.235:53000 B: 239.1.127.235:53000		

2.2.3.12 HKEX OMD Retransmission Unicast Connectivity

HKEX provides a Retransmission Service to its OMD clients to recover lost multicast packet. Functional details of the Retransmission Service are provided in the Interface Specification. Find below the Unicast Addresses to connect to the OMD Retransmission Servers in **HKATS Certification Test environment**.

**OMD-D at HKATS Certification Test Environment**  
- for EPs to perform HKATS Certification Test

Primary server in primary site 10.170.3.139:55455

### 2.3 Individual Client Configuration Details

Individual clients will be provided with the following configuration details for each set of product feed subscription:

- One Retransmission User ID (Username)
- The subnet and subnet mask of the client segment
- Two unicast client allowable IP addresses for connection with re-transmission servers
- Two physical IP addresses and two Virtual IP address of SDNet/2 routers
- HSRP/VRRP groups used by SDNet/2 routers

Individual client testing configuration information will be provided separately prior to the Open Test/Readiness Test whilst the client specific production configuration information will be provided upon the client's successful completion of the Readiness Test and prior to the Market Rehearsals/Post Release Test. Please refer to Appendix B for an example of Client Configuration information.

### 3. Guidelines on SDNet/2 lines / HSN connection

#### 3.1 Mode of OMD connection

- For resilience purpose, at least 2 SDNet/2 or HSN lines are required for OMD connection either for individual OMD datafeed product or sharing among different OMD datafeed products.
- The set of 2 SDNet/2 lines is required to locate in the same location. If clients require receiving OMD data in multiple locations, 1 set of 2 SDNet/2 lines is required to install in each location.

#### 3.2 Bandwidth Requirement

Full suite of OMD datafeed products for Derivatives Market data and respective estimated bandwidth requirements are as follows.

##### 3.2.1 Production SDNet/2 / HSN and Testing SDNet/2 / HSN for OMD-D Readiness Test

###### *Minimum Bandwidth Allocation Between Multicast and Unicast in Each Datafeed*

Datafeed	Minimum Multicast Allocation (i.e. Real Time & Refresh) with / without the Index Feed (INDEX) <sup>1</sup>	Minimum Unicast Allocation <sup>2</sup> (i.e. Retransmission)
Derivatives Lite (D-Lite) – Non-SOM	5.5 Mbps	0.5 Mbps
D-Lite – Non-SOM + Derivatives Trade (DT) <sup>3</sup>	7.5 Mbps	0.5 Mbps
D-Lite – SOM	7.5 Mbps	0.5 Mbps
D-Lite – SOM + DT	9.5 Mbps	0.5 Mbps
D-Lite – Order Feed	3 Mbps	Not applicable
Derivatives Standard (DS) – Non-SOM	13 Mbps	1 Mbps
DS – Non-SOM + DT	15 Mbps	1 Mbps
DS – SOM	13 Mbps	1 Mbps
DS – SOM + DT	15 Mbps	1 Mbps
Derivatives Premium (DP) – Non-SOM <sup>4</sup>	25 Mbps	1 Mbps

<sup>1</sup> For OMD-Index connectivity information, please refer to the Connectivity Guide for OMD Securities Market and Index Datafeed Products (OMD-C). Update rate of individual index depends on respective index providers

<sup>2</sup> If more than 1 datafeed are subscribed in Production or Readiness Test Environment, the minimum bandwidth for unicast is 1 Mbps (0.5Mbps for D-Lite only)

<sup>3</sup> DT is only applicable to D-Lite and DS subscribers

<sup>4</sup> DP and DF Clients have to subscribe to lines with High Performance Option (HPO) to avoid potential data loss in the event of bursty traffic that could happen in the production environment.

DP – SOM <sup>4</sup>	33 Mbps	1 Mbps
Derivatives Full Tick (DF) – Non-SOM <sup>4</sup>	44 Mbps	1 Mbps
DF – SOM <sup>4</sup>	34 Mbps	1 Mbps

### 3.2.2 Testing SDNet/2 / HSN for OMD-D HKATS Testing Environment and HKATS Certification Test Environment<sup>1</sup>

#### Minimum Bandwidth Allocation Between Multicast and Unicast in Each Datafeed

Datafeed	Minimum Multicast Allocation (i.e. Real Time & Refresh) with Any Combination / All of the following Complimentary Datafeed(s) a) INDEX b) DT	Minimum Unicast Allocation <sup>2</sup> (i.e. Retransmission)
D-Lite – Non-SOM	1 Mbps	0.5 Mbps
D-Lite – SOM	2.5 Mbps	0.5 Mbps
D-Lite – Order Feed	3 Mbps	Not applicable
DS – Non-SOM	1 Mbps	0.5 Mbps
DS – SOM	4.5 Mbps	0.5 Mbps
DP – Non-SOM	1.5 Mbps	0.5 Mbps
DP – SOM	6.5 Mbps	0.5 Mbps
DF – Non-SOM	1 Mbps	0.5 Mbps
DF – SOM	3.5 Mbps	0.5 Mbps

<sup>1</sup> The bandwidth requirement listed in this section assumes that Clients connect to only one OMD-D HKATS Testing Environment and one HKATS Certification Test Environment at the same time. Clients are suggested to subscribe a larger bandwidth should they plan to connect to more testing environments (if available) at the same time

<sup>2</sup> If more than 1 datafeed is subscribed in HKATS Testing Environment and HKATS Certification Test Environment, the minimum bandwidth for unicast is 0.5 Mbps

### 3.3 Sharing of SDNet/2 lines or HSN port set

Clients may opt to use separated sets or same set of SDNet/2 lines/ HSN ports for receiving data of different OMD datafeed products and other HKEX datafeeds, e.g. HKATS CG subject to certain limitations.

Under the current multicast transmission protocol of OMD, clients are required to establish live-live connections regardless of whether they are connecting through SDNet/2 or HSN Port in HKEX's Hosting site.

Sharing of SDNet/2 lines for different OMD datafeed products and other applications, e.g. HKATS CG is allowed and clients are required to make sure the bandwidth of the SDNet/2 lines is sufficient to support the multiple applications sharing the lines and they are aware of the potential issues for sharing of lines.

Under the Hosting setup, 1 HSN Port Set contains 2 ports which can serve the live-live connections for OMD (multicast application) and live-backup connection for other unicast application, e.g. HKATS CG.

Clients who would like to establish new HSN connection for other unicast applications which are in live-live mode may need to apply for an additional set of HSN circuits, or consider another solution that meets the same resilience requirement.

In addition, clients should note the following policies on sharing of SDNet/2 or HSN lines for OMD datafeed products:

- Sharing of same set of production SDNet/2 / HSN circuits for **more than 1 OMD datafeed products of different markets** (i.e. securities market datafeed and derivatives market datafeed) **is allowed**.
- Sharing of the same SDNet/2 / HSN circuits for both product and testing purposes is **NOT ALLOWED**.
- **Exchange Participants** who would like to **share the same SDNet/2 circuits with trading traffic (orders and trades) and market data traffic** are however **only** allowed to do so if all the traffic **on** the circuits belongs to **the same market** (i.e. either securities market or derivatives market). OMD-Index, which is market neutral, can be carried on the same circuits with securities market or derivatives market. For example, Exchange Participants of derivatives market may use the same SDNet/2 circuits for their access to DS, OMD-Index and HKATS CG.
- Clients should note and consider the followings if they are going to adopt shared line mode:
  - i) In case of failure/interruption of the shared circuits, all datafeed products using this set of circuits will be affected.
  - ii) Troubleshooting for network related issues (e.g. performance, latency or packet loss etc.) will be much more difficult and time consuming and assistance from network carriers and HKEX will be limited in such troubleshooting. Clients must accept this risk in making the line sharing decision.
  - iii) Due to the difference in operating hours and testing windows between securities and derivatives markets, clients should make sure any maintenance/testing of one of the systems does not affect the rest of the systems sharing the same set of circuits.

### 3.4 Bandwidth for shared SDNet/2 lines or HSN port set

- i) Shared SDNet/2 / HSN circuits must have sufficient bandwidth to support the data transmission of multiple products/devices. Please see below examples for reference:



Example 1: Sharing of a set of SDNet/2 lines for DS (SOM + Non-SOM) and DF (SOM) in Production Environment:

The minimum bandwidth requirements for multicast of DS (Non-SOM), DS (SOM) and DF (SOM) are 13 Mbps, 13 Mbps and 34 Mbps respectively while the minimum bandwidth requirement for unicast of multiple datafeeds is 1 Mbps, a set of SDNet/2 lines with 70 Mbps will be required. (Actual bandwidth requirement is 61 Mbps and minimum incremental bandwidth threshold is 10 Mbps for SDNet/2 lines of 10 Mbps-100 Mbps)

Example 2: Sharing of a set of SDNet/2 lines for DS (SOM + Non-SOM) and OMD D-Lite (SOM + Non-SOM) + D-Lite Order feed in Production Environment:

The minimum bandwidth requirements for multicast of DS (SOM + Non-SOM) and D-Lite (SOM + Non-SOM) are 26 Mbps and 16 Mbps respectively while the , minimum bandwidth requirement for unicast of multiple datafeeds is 1 Mbps, a set of SDNet/2 lines with 50 Mbps will be required. (Actual bandwidth requirement is 43 Mbps and minimum incremental bandwidth threshold is 10 Mbps for SDNet/2 lines of 10 Mbps-100 Mbps)

Example 3: Sharing of a set of SDNet/2 lines for DF (SOM + Non-SOM) and HKATS CG in Production Environment:

The minimum bandwidth requirements for multicast of DF (SOM + Non-SOM) is 78 Mbps while the, minimum bandwidth requirement for unicast of multiple datafeeds is 1 Mbps. The bandwidth requirement for HKATS CG is 10 Mbps. Therefore, a common set of SDNet/2 lines with 90 Mbps will be required.

(Actual bandwidth requirement is 89Mbps and minimum incremental bandwidth threshold is 10 Mbps for SDNet/2 lines of 10 Mbps-100 Mbps)

Example 4: Sharing of a set of SDNet/2 lines for DF (SOM + Non-SOM) and SS in OMD-C<sup>1</sup> in Production Environment:

The minimum bandwidth requirements for multicast of DF (SOM + Non-SOM) and SS in OMD-C are 78 Mbps and 15 Mbps respectively. Whereas the minimum bandwidth requirement for unicast of multiple datafeeds of OMD-D and SS in OMD-C are 1Mbps and 0.2 Mbps respectively. Therefore, a common set of SDNet/2 lines with 100 Mbps will be required.

(Actual bandwidth requirement is 94.2 Mbps and minimum incremental bandwidth threshold is 10Mbps for SDNet/2 lines of 10 Mbps-100 Mbps)

- ii) Clients can allocate bandwidth of the shared lines to different products as they wish as long as the bandwidth allocated to each datafeed product meets the estimated bandwidth requirement specified by HKEX.

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### 3.5 SDNet/2 High Performance Option

Clients who are required to install circuits with a bandwidth of 30 Mbps or above for connecting to HKEX systems have to subscribe to lines with High Performance Option (HPO) to avoid potential data loss in the event of bursty traffic that could happen in the production environment.

High Performance Option of SDNet/2 which transmits data in relatively high packet rates is required for clients who subscribe to OMD streaming feeds, i.e. DP and DF. OMD DS provides conflated price level information, and the message rate sent for the conflation period is relatively not high, so HPO is not necessary.

Please refer to Appendix A for details on high performance options provided by different SDNet/2 providers.

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<sup>1</sup> For OMD-C connectivity information, please refer to the Connectivity Guide for OMD Securities Market and Index Datafeed Products (OMD-C).

## 4. Other Guidelines on OMD Connections

### 4.1 Additional Login IDs/Client IP addresses for Unicast Retransmission Service

Direct connection clients will get one set of login ID with two IP addresses for retransmission service per OMD-D datafeed subscription. That means, clients subscribing to one set of DP feed and one set of DF feed will get two login IDs each with two IP addresses. These login IDs would be generic ID where each ID can be used to recover either the DP and DF missing data rather than tied to the respective datafeed product associated with that login ID provided that the same pair of SDNet/2 or HSN circuits is used for receiving the data from both DP and DF.

Exchange Participants who are entitled to receive two sets of complimentary DS feed via two different pairs of circuits when migrating to HKATS CG would also be entitled to one complimentary login ID per set of DS feed which is also a generic ID.

To facilitate different clients' internal setup or operational requirement, an additional set of login ID and with/without IP addresses for retransmission service can be offered to clients at a cost on a per request basis.

### 4.2 Installation of SDNet/2 and HSN lines

#### 4.2.1 SDNet/2 lines

Clients are required to contact the SDNet/2 Accredited Vendors for installation of SDNet/2 lines for OMD connection. Details of the SDNet/2 Accredited Vendors and reference costs charged by different SDNet/2 Accredited Vendors can be found in Appendix A.

#### 4.2.2 HSN lines

Clients who will use HKEX's Hosting Service for OMD connection should contact our Hosting Service team directly for details on the HSN lines.

## Appendix A – SDNet/2 Accredited Vendors Information

SDNet/2 services are provided by Accredited Vendors for the provision of circuits from EP/CP/IV locations to HKEX's data centres.

To become an Accredited Vendor, the Vendor's SDNet/2 service must comply with the technical requirements set out by HKEX. The compliance of these technical requirements ensures the Accredited Vendor will deliver a stable, reliable and high quality networking services to the EPs/CPs/IVs.

Three Accredited Vendors have been selected and accredited to provide SDNet/2 network services. These vendors are (in alphabetical order):

- Hong Kong Telecommunications (HKT) Limited (also known as PCCW)
- HKBN Enterprise Solutions HK Limited (HKBNES)

For details of SDNet/2 circuit price information / technical specification / service level, please refer to [Price Information / Technical Specification / Service Level of SDNet/2](#) posted on HKEX website.

## Appendix B Sample Client Configuration Information

### Client End Network Information (Sample):

1	Username	<i>CLIENT1</i>
2	OMD LAN Subnet	<i>10.55.64.0</i>
3	OMD LAN Subnet Mask	<i>255.255.255.224</i>
4	Vendor Allowable IP Address 1 for retransmission	<i>10.55.64.2</i>
5	Vendor Allowable IP Address 2 for retransmission	<i>10.55.64.29</i>
6	SDNet/2 Primary Circuit Number	<i>808311</i>
7	SDNet/2 Router A LAN IP Address (IP-A)	<i>10.55.64.14</i>
8	SDNet/2 Secondary Circuit Number	<i>808312</i>
9	SDNet/2 Router B LAN IP Address (IP-B)	<i>10.55.64.17</i>
10	SDNet/2 OMD LAN 1 <sup>st</sup> Virtual Gateway IP Address (Virt-A)	<i>10.55.64.1</i>
11	HSRP/VRRP Group Number used by SDNet/2 Router for Virt-A	<i>14</i>
12	SDNet/2 OMD LAN 2 <sup>nd</sup> Virtual Gateway IP Address (Virt-B)	<i>10.55.64.30</i>
13	HSRP/VRRP Group Number used by SDNet/2 Router for Virt-B	<i>17</i>
14	Multicast Protocol used by SDNet/2 Routers	<i>IGMPv2</i>
15	SDNet/2 Router Physical Interface for OMD	<i>gi1/0/1</i>
16	SDNet/2 Router Port Speed for OMD	<i>Auto Sense up to 1Gbps</i>
17	SDNet/2 Router Port Duplex Mode for OMD	<i>Auto Negotiation</i>
18	IP address ranges usable by Vendors (IP addresses outside these ranges are used and reserved by HKEX)	<i>10.55.64.9-13</i> <i>10.55.64.18-22</i>
	Note: Vendors can use same set of addresses for Unicast retransmission for the multicast transmission)	

### Host End Network Information (Sample):

1	Multicast Source Segment of Stream A in Primary Site forwarded by Vendor SDNet/2 Router A	<i>10.0.8.0/24</i>
2	Multicast Source Segment of Stream A in Backup Site forwarded by Vendor SDNet/2 Router A	<i>10.0.10.0/24</i>
3	Multicast Source Segment for multicast stream B in Primary Site forwarded by Vendor SDNet/2 Router B	<i>10.0.9.0/24</i>
4	Multicast Source Segment for multicast stream B in Backup Site forwarded by Vendor SDNet/2 Router B	<i>10.0.11.0/24</i>
5	Primary Site Primary Retransmission Server IP Address	<i>10.170.3.121/24</i>
6	Primary Site Primary Retransmission Server TCP Port Number	<i>55455</i>
7	Primary Site Secondary Retransmission Server IP Address	<i>10.170.3.122/24</i>
8	Primary Site Secondary Retransmission Server TCP Port Number	<i>55455</i>
9	Backup Site Primary Retransmission Server IP Address	<i>10.170.13.121/24</i>
10	Backup Site Primary Retransmission Server TCP Port Number	<i>55455</i>
11	Backup Site Secondary Retransmission Server IP Address	<i>10.170.13.122/24</i>
12	Backup Site Secondary Retransmission Server TCP Port Number	<i>55455</i>

# Derivatives Market Datafeed Products (OMD-D) Connectivity Guide v1.14

