

## Regular Data Center Failover Rehearsal for Market Data Systems on 6 November 2021

### Systems: Orion Market Data – Securities (OMD-C) and Mainland Market Data Hub (MMDH)

Time (HKT)	Activity	Action – for participating OMD-C and MMDH Clients
<b>Data Center Failover Rehearsal</b>		
10:30	<b>OMD-C and MMDH</b> are ready for connection in Primary Data Center	<ul style="list-style-type: none"> <li>• <b>OMD-C</b> and <b>MMDH</b> Clients to connect to OMD-C / MMDH and receive OMD-C / MMDH messages in Primary Data Center.</li> </ul>
11:30 – 12:00	Pre-Opening Session	
12:00 – 12:30	Continuous Trading Session	
Anytime between 12:15 and 12:30	Simulation of Primary Data Center service outage and failover to Secondary Data Center for Market Data and Trading System: <ul style="list-style-type: none"> <li>- Failover <b>OMD-C</b> from Primary Data Center to Secondary Data Center</li> <li>- <b>MMDH</b> disconnect with OMD-C until OMD-C in the Secondary Data Center is ready</li> </ul> <i>[HKEX-IS will simulate the notification of incident to OMD-C &amp; MMDH Clients and advise Clients to stay alert to HKEX's announcement on the trading arrangement and service resumption. <b>Emails for rehearsal will all be tagged with "Regular Data Center Failover Rehearsal on 6 November 2021" in the email subject.</b> ]</i>	<ul style="list-style-type: none"> <li>• <b>OMD-C</b> Clients to execute their contingency arrangement upon the detection of OMD-C Data Center failover by the receipt of DR Status "1" (DR in progress) in DR Signal (105) message.</li> <li>• <b>MMDH</b> Clients will receive heartbeat messages only from MMDH during the failover period.</li> </ul>

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Time (HKT)	Activity	Action – for participating OMD-C and MMDH Clients
Around 13:30	<p><b>OMD-C</b> located on Secondary Data Center is ready for connection  <i>[HKEX-IS will notify OMD-C Clients on the readiness of OMD-C on Secondary Data Center and the trading arrangement.]</i></p> <p><b>MMDH</b> will connect to OMD-C on Secondary Data Center  <i>[HKEX-IS will notify MMDH Clients for the trading arrangement]</i></p>	<ul style="list-style-type: none"> <li><b>OMD-C</b> Clients to connect to the OMD-C on Secondary Data Center upon receiving DR Status “2” (DR completed) in DR Signal (105) message.</li> </ul>
13:45	Order Cancel Session	<ul style="list-style-type: none"> <li><b>OMD-C</b> and <b>MMDH</b> Clients to check if OMD-C / MMDH messages can be received and processed normally after data center failover.</li> </ul>
14:00 – 15:00	Continuous Trading Session	
15:00 – 15:10	Closing Auction Session	
Upon completion of Matching ~15:10	Day Close	
15:30	<p>End of Rehearsal</p> <ul style="list-style-type: none"> <li><b>OMD-C</b> will switch back to Primary Data Center.</li> <li><b>MMDH</b> will be shut down to reconnect to the OMD-C on Primary Data Center. MMDH Clients will be disconnected.</li> </ul>	<ul style="list-style-type: none"> <li><b>OMD-C</b> and <b>MMDH</b> Clients to take appropriate actions to clean all test messages disseminated during the rehearsal period.</li> </ul>
<b>Result Confirmation</b>		
Before 17:00	<p><b>OMD-C and MMDH Clients please confirm your rehearsal result by completing the online <a href="#">Rehearsal Result Confirmation Form</a></b></p>	
<b>Connectivity Test for Reconnecting to the Primary Data Center (Optional)</b>		

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Time (HKT)	Activity	Action – for participating OMD-C and MMDH Clients
22:30 – 23:30	<b>OMD-C and MMDH</b> are ready for connection in Primary Data Center	<ul style="list-style-type: none"> <li>• <b>OMD-C</b> and <b>MMDH</b> Clients to connect to OMD-C / MMDH in Primary Data Center.</li> </ul>
23:30	<b>OMD-C</b> shutdown	<ul style="list-style-type: none"> <li>• <b>OMD-C</b> and <b>MMDH</b> Clients to take appropriate actions to clean all messages received from OMD-C / MMDH during the rehearsal period.</li> </ul>

## System: Orion Market Data – Derivatives (OMD-D)

Time (HKT)	Activity	Action – for participating OMD-D Clients
<b>Data Center Failover Rehearsal</b>		
10:30	<b>OMD-D</b> is ready for connection in Primary Data Center	<ul style="list-style-type: none"> <li>• <b>OMD-D</b> Clients to connect to OMD-D and receiving OMD-D messages in Primary Data Center.</li> </ul>
11:45 – 12:00	Market Pre-Open	
12:00 – 12:30	Market Open	
Anytime between 12:15 and 12:30	Simulation of Primary Data Center service outage and failover to Secondary Data Center for Market Data and Trading System <ul style="list-style-type: none"> <li>- Failover <b>OMD-D</b> from Primary Data Center to Secondary Data Center</li> </ul> <i>[HKEX-IS will simulate the notification of incident to OMD-D Clients and advise Clients to stay alert to HKEX's announcement on the trading arrangement and service resumption. <b>Emails for rehearsal will all be tagged with "Regular Data Center Failover Rehearsal on 6 November 2021" in the email subject.</b>]</i>	<ul style="list-style-type: none"> <li>• <b>OMD-D</b> Clients to execute their contingency arrangement upon the detection of OMD-D Data Center failover by the receipt of DR Status "1" (DR in progress) in DR Signal (105) message.</li> </ul>
Around 13:10	<b>OMD-D</b> located on the Secondary Data Center is ready for connection <i>[HKEX-IS will notify OMD-D Clients on the readiness of OMD-D on Secondary Data Center and the trading arrangement.]</i>	<ul style="list-style-type: none"> <li>• <b>OMD-D</b> Clients to connect to the OMD-D on Secondary Data Center upon receiving DR Status "2" (DR completed) in DR Signal (105) message.</li> </ul>

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Time (HKT)	Activity	Action – for participating OMD-D Clients
13:25 – 13:45	Market Pre-Open	<ul style="list-style-type: none"> <li>• <b>OMD-D</b> Clients to check if OMD-D messages can be received and processed normally after data center failover.</li> </ul>
13:45 – 15:15	Market Open	
15:15	Market Close	
15:30 – 16:00	After Hour Trading Session (“AHT”) Market Open (T+1 session)	
16:00	AHT Close (T+1 session)	
16:15	End of Rehearsal - OMD-D will switch back to Primary Data Center	<ul style="list-style-type: none"> <li>• <b>OMD-D</b> Clients to take appropriate actions to clean all test messages disseminated during the rehearsal period.</li> </ul>
<b>Result Confirmation</b>		
Before 17:15	<b>OMD-D Clients please confirm your rehearsal result by completing the online <a href="#">Rehearsal Result Confirmation Form</a></b>	
<b>Connectivity Test for Reconnecting to the Primary Data Center (Optional)</b>		
22:30 – 00:30	<b>OMD-D</b> ready for connection in Primary Data Center	<ul style="list-style-type: none"> <li>• <b>OMD-D</b> Clients to connect to OMD-D in Primary Data Center.</li> </ul>
00:30	<b>OMD-D</b> shutdown	<ul style="list-style-type: none"> <li>• <b>OMD-D</b> Clients to take appropriate actions to clean all messages received from OMD-D during the rehearsal period.</li> </ul>

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## System: Orion Market Data – China Connect (OMD-CC)

Time (HKT)	Activity	Action – for participating OMD-CC Clients
<b>Data Center Failover Rehearsal</b>		
10:30	<b>OMD-CC</b> is ready for connection in Primary Data Center	<ul style="list-style-type: none"> <li><b>OMD-CC</b> Clients to connect to OMD-CC and receive OMD-CC messages in Primary Data Center.</li> </ul>
11:00 – 11:31	Continuous Auction Session	
11:31	Mid-day Close	
Anytime between 12:15 and 12:30	Simulation of Primary Data Center service outage and failover to Secondary Data Center for Market Data system: <ul style="list-style-type: none"> <li>Failover <b>OMD-CC</b> failover to Secondary Data Center</li> </ul> <i>[HKEX-IS will simulate the notification of incident to OMD-CC Clients and advise Clients to stay alert to HKEX's announcement on the service resumption. <b>Emails for rehearsal will all be tagged with "Regular Data Center Failover Rehearsal on 6 November 2021" in the email subject.]</b></i>	<ul style="list-style-type: none"> <li><b>OMD-CC</b> Clients to execute their contingency arrangement upon the detection of OMD-CC Data Center failover by the receipt of DR Status "1" (DR in progress) in DR Signal (105) message.</li> </ul>
Around 13:30	<b>OMD-CC</b> located on Secondary Data Center is ready for connection <i>[HKEX-IS will notify OMD-CC Clients on the readiness of OMD-CC on Secondary Data Center.]</i>	<ul style="list-style-type: none"> <li><b>OMD-CC</b> Clients to connect to the OMD-CC on Secondary Data Center upon the receipt of DR Status "2" (DR completed) in DR Signal (105) message.</li> </ul>

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Time (HKT)	Activity	Action – for participating OMD-CC Clients
14:00 – 15:01	Continuous Auction Session	<ul style="list-style-type: none"> <li>• <b>OMD-CC</b> Clients to check if OMD-CC messages can be received and processed normally after failover to Secondary Data Center.</li> </ul>
15:01 – 15:05	Exchange Intervention	
15:05	Day Close	
15:30	End of Rehearsal - <b>OMD-CC</b> will switch back to Primary Data Center	<ul style="list-style-type: none"> <li>• <b>OMD-CC</b> Clients to take appropriate actions to clean all test messages disseminated during the rehearsal period.</li> </ul>
<b>Result Confirmation</b>		
<b>Before 17:00</b>	Please confirm your test result by completing the online <a href="#">Rehearsal Result Confirmation Form</a>	
<b>Connectivity Test for Reconnecting to the Primary Data Center (Optional)</b>		
22:30 – 23:30	<b>OMD-CC</b> is ready for connection in Primary Data Center	<ul style="list-style-type: none"> <li>• <b>OMD-CC</b> Clients to connect to OMD-CC in Primary Data Center.</li> </ul>
23:30	<b>OMD-CC</b> shutdown	<ul style="list-style-type: none"> <li>• <b>OMD-CC</b> Clients to take appropriate actions to clean all messages disseminated from OMD-CC during the testing period.</li> </ul>

## System: Issuer Information feed Service (IIS)

Time (HKT)	Activity	Action – for participating IIS Clients
<b>Data Center Failover Rehearsal</b>		
10:30	IIS is ready for logon in Primary Data Center	<ul style="list-style-type: none"> <li>• <b>IIS Clients</b> to connect to IIS in Primary Data Center and receive testing new news and attachments.</li> </ul>
10:30 – 12:30	IIS disseminates testing news on Primary Data Center	
Anytime between 12:15 and 12:30	Simulation of Primary Data Center service outage and failover to Secondary Center Data: <ul style="list-style-type: none"> <li>- Failover IIS failover from Primary Data Center to Secondary Data Center</li> </ul> <i>[HKEX-IS will simulate the notification of incident to IIS Clients and advise Clients to stay alert to HKEX's announcement on the service resumption. <b>Emails for rehearsal will all be tagged with "Regular Data Center Failover Rehearsal on 6 November 2021" in the email subject.]</b></i>	<ul style="list-style-type: none"> <li>• <b>IIS Clients</b> to execute their contingency arrangement upon HKEX-IS notification.</li> </ul>
Around 13:00	IIS located on Secondary Data Center is ready for connection <i>[HKEX-IS will notify IIS clients on the readiness of IIS on Secondary Data Center]</i>	<ul style="list-style-type: none"> <li>• <b>IIS Clients</b> to connect to the IIS on Secondary Data Center.</li> </ul>
13:00 – 14:30	IIS disseminates testing news on Secondary Data Center	<ul style="list-style-type: none"> <li>• <b>IIS Clients</b> to check if testing news and attachments can be received and processed normally after failover to Secondary data center.</li> </ul>



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Time (HKT)	Activity	Action – for participating IIS Clients
15:30	End of Rehearsal - IIS will switch back to Primary Data Center	<ul style="list-style-type: none"> <li>IIS Clients to take appropriate actions to clean all test messages disseminated during the rehearsal period.</li> </ul>
<b>Result Confirmation</b>		
<b>Before 17:00</b>	<b>IIS Clients please confirm your test result by completing the online <a href="#">Rehearsal Result Confirmation Form</a></b>	
<b>Connectivity Test for Reconnecting to the Primary Data Center (Optional)</b>		
19:00 – 20:00	IIS is ready for logon in Primary Data Center	<ul style="list-style-type: none"> <li>IIS Clients to connect to IIS in Primary Data Center.</li> </ul>
20:00	IIS shutdown	<ul style="list-style-type: none"> <li>IIS Clients to take appropriate actions to clean all test messages disseminated during the testing period.</li> </ul>

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### Important Notes to Clients:

1. For fault reporting, please call our Connectivity Project & Support Hotline at (852) 2211 6558 during the Rehearsal.
2. All messages disseminated during the testing period should be treated as non-production data and should be cleaned after the Rehearsal.
3. In any case, all participating Clients should complete the appropriate day-end works including file / database backup, system restoration / fallback and etc. before, during and / or after the Rehearsal.
4. Contingency Arrangements on Typhoon, Extreme Conditions and Rainstorm Warning on the day of the Rehearsal:
  - a. In case Typhoon Signal No. 8 or above or Extreme Conditions or Black Rainstorm Warning is issued/ announced or continues to be in force anytime from 07:00 to before 11:00 on the Rehearsal day, the Rehearsal will be cancelled and will not be resumed for the rest of the day.
  - b. In case Typhoon Signal No. 8 or above or Extreme Conditions is issued on or after 11:00 on the Rehearsal day, the Rehearsal will be terminated 15 minutes thereafter.
  - c. In case Black Rainstorm Warning is issued on or after 11:00 on the Rehearsal day, the Rehearsal will continue until completion.
  - d. In any case, all participating Clients should complete the appropriate day-end works including file / database backup, system restoration / fallback and etc before, during and / or after the Rehearsal.