

External Testing Environment Connectivity Guide

Orion Derivatives Platform (ODP) Stage 1 – Post Trade

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Version History

Version	Publication Date	Description
V1.0	10 August 2026	First version

Definitions

Terms	Definitions
API	Application Programming Interface
JWT	JSON Web Token
SDNet	Securities and Derivatives Network

SECTION I: OVERVIEW

1. The objective of this guide is to provide Clearing Participants (“CPs”) or Independent Software Vendors (“ISVs”) with the information required to establish connectivity between their testing environments and the Orion Derivatives Platform – Post Trade (“ODP-PT”) External Testing Environment. The guide outlines the SDNet connectivity requirements, onboarding process, access configuration, and authentication setup necessary to support participant testing activities. It also provides an overview of the ODP-PT API Gateway services and references the supporting API documentation available on Client Connect for participants integrating with ODP-PT API.
2. HKEX will provide a dedicated ODP-PT External Testing Environment to support CPs and ISVs in developing and validating their internal systems before production implementation. Impacted participants are required to establish connectivity to the ODP-PT External Testing Environment through an SDNet development circuit.
3. The External Testing Environment is intended to allow participants to validate functionality, data formats and interoperability of their internal systems when consuming API responses. It also allows participants to familiarise themselves with the JWT setup and authentication requirements before production implementation.
4. All data; including the IP addresses used within the External Test Environment is for testing purposes only. The data; including the IP addresses may differ from data used in production. CPs and ISVs should not use real production data in their test activities. HKEX does not bear any liability on the data used in the External Test Environment.
5. The ODP-PT API Gateway provides RESTful JSON endpoints and WebSocket broadcast services for CPs to automate post trade operations and receive information from the clearing system.
6. For the full API information package, participants should refer to the ODP-PT API Specification available on Client Connect.

SECTION II: PARTICIPANT SET UP JOURNEY

7. Participants should complete the following activities before starting ODP-PT testing.

Table 1: Participant Set Up Journey

Step	Participant Action
A	Arrange an SDNet testing line through an HKEX-accredited vendor, or HSTN circuit via HKEX Hosting Services Team.
B	Submit Form TechS 5 (DCASS Production / Testing Line Application and/or Change of Bandwidth Notification to HKCC/SEOCH) through Client Connect to notify HKEX of the installation of the ODP-PT testing site.

SECTION II: ODP-PT EXTERNAL TEST ENVIRONMENT

Available Services

8. The following services will be available to participants in the ODP-PT External Testing Environment:

Table 2: Available Services

Service	Description
ODP-PT API	RESTful API access for participant system testing
ODP-PT WebSocket	Receive broadcast messages
ODP-PT Login Management	JWT access token retrieval

Testing User ID

9. Participant should submit a request form through Client Connect to obtain a testing user ID for access to the ODP-PT External Testing Environment.
10. Participant must provide a public key in the request form. The public key is for the retrieval of a JWT access token for the API or WebSocket connection.

Authentication Settings

11. A JWT access token must be retrieved via ODP-PT Login Management in the testing environment.
12. Token expiry time is 15 minutes.
13. During this period, the same token can be reused to invoke the ODP-PT API.

Environment Differences

14. URLs, domain names and IP addresses in the test environment are different from production.

Testing Data and Validation

15. All data retrieved during testing is for testing purposes only and may differ from production data.
16. The hardware capacity of the testing environment differs from production. Performance, or load testing is not permitted.
17. Other forms of non-functional testing, including failover testing and security testing, are not permitted.

SECTION IV: SDNet CONNECTIVITY AND HOST CONFIGURATION

Arrange SDNet Testing Line

18. CPs or ISVs should arrange an SDNet testing line with HKEX's accredited vendors. Vendors contact details are available on the HKEX website:

Table 1: HKEX's accredited vendors

[https://www.hkex.com.hk/Services/Connectivity/SDNet_2/Listed_Derivatives_Clearing_\(DCASS_CMS\)?sc_lang=en](https://www.hkex.com.hk/Services/Connectivity/SDNet_2/Listed_Derivatives_Clearing_(DCASS_CMS)?sc_lang=en)

Register for an SDNet Development Circuit

19. Register for an SDNet development circuit by submitting Form TechS 5 (DCASS Production / Testing Line Application and/or Change of Bandwidth Notification to HKCC/SEOCH) through Client Connect.

CPs or ISVs that already have a development circuit to access the DCASS OAPI testing environment may choose to share the existing development circuit or subscribe to a dedicated development circuit.

Host Configuration

20. Participants may configure the following host table entries or use DNS at 10.161.5.206 to resolve the destination URLs

Table 2: Host Configuration

Hostname	IP address
api.odppt.orion-eut.hkex.com.hk	10.161.5.209
ws.odppt.orion-eut.hkex.com.hk	10.161.5.210
login.odppt.orion-eut.hkex.com.hk	10.161.5.207

ODP-PT Endpoints

21. All ODP-PT endpoints are accessible through the SDNet development network. Communication is encrypted using TLS v1.2.

Table 3: ODP-PT Endpoints

Endpoint	URL	TCP Port
RESTful API	https://api.odppt.orion-eut.hkex.com.hk	8688
WebSocket	https://ws.odppt.orion-eut.hkex.com.hk	8098
JWT Access Token	https://login.odppt.orion-eut.hkex.com.hk/realms/ext/protocol/openid-connect/token	443

Testing Account Setup

22. Participants should apply for access to the ODP-PT External Testing Environment by submitting the relevant request form through Client Connect.
23. For API access, participants must provide a public key for registration in the request form. The key algorithm should be RSA-SHA256 2048-4096bit. An example of 2048 bits key is shown below.

```
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAI3We4ukm9dk4s4LrenFdpteiGH4/H
P4YedBekNDeVPMIJ6A+qWguV+KfNjX0TEvmJvNXQRuI112aRuQKF3FhfoN0AwpZKl5qLmp6s
WbC6RZ2Kb23Hdmai9Rf6wMvfkMhxGegtBfcHKDCetYro+I9aZT10rcXiiajWDYvSAOkwHsIM2t
qWC4KiWnJIU45qvN12Hq79yD4XyHLk+4Qn4kW+9YWlhCM6PEccSZeu0PGjxzL6S+hQpbEnJ
9PTf8l5W4HL6DB+LVgz3LqTsNRUxiJkSK850wc/a+5Ng58hDIU34MFWaEkz0bwFhoiGLD+Me+
Vjld9NrkuIFg5ZMImsdQIDAQAB
```

24. HKEX will provide the testing user ID details to the participant upon request.

SECTION V: JWT ACCESS TOKEN RETRIEVAL

25. Participants should refer to Section 3 of the ODP-PT API User Guide for the detailed step-by-step procedure for JWT access token retrieval. Participants should use the External Testing Environment domain name when following the procedure.

JWT Token URL

Table 6: JWT Token URL

<code>https://login.odppt.orion-eut.hkex.com.hk/realms/ext/protocol/openid-connect/token</code>

Claims aud in JWT

26. The Claims aud in JWT should be

Table 7: Claims aud in JWT

<code>"aud": "https://login.odppt.orion-eut.hkex.com.hk/realms/ext/protocol/openid-connect/token"</code>
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SECTION VI: ENQUIRIES

27. For general enquiries, participants may contact HKEX ODP support email address.

Table 8: General Enquires

Contact	Details
Email	odp_support@hkex.com.hk

Hong Kong Exchanges and Clearing Limited

8/F, Two Exchange Square,
8 Connaught Place,
Central, Hong Kong

hkexgroup.com | hkex.com.hk

info@hkex.com.hk

T +852 2522 1122

F +852 2295 3106