
Test Guide

16 June2018

Disaster Recovery Test Guide

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1.0 Introduction

1.1 Scope

The purpose of this document is to describe the dress rehearsal activities that will take place on Saturday 16th June 2018 to simulate a Disaster Recovery test for the Borsa Italiana MTA, MIV, AIM Italia-MAC, Blt GEM, DomesticMOT, EuroMOT, ExtraMOT, ETFPlus, SeDeX and TAH markets and EuroTLX market running on the MIT platform, the IDEM, IDEX and AGREX markets running on the SOLA platform and the BCS Clearing Service.

Customers are warmly invited to participate to this test session.

The scope of the Disaster Recovery Test is to verify that all participants' applications can correctly connect to the Secondary Data Centre addresses of both Millennium IT and SOLA platforms in case of unavailability of the Primary Data Centre and are able to perform trading activities and receive market data.

In particular, all participants are required to double check their logon procedures for all the enabled User IDs to both Primary Data Centre and Secondary Data Centre, and to enter/amend/delete orders and quotes (single/double) and execute trades on both instances.

Customers should confirm their participation to the Disaster Recovery test by sending an email to Clients-Services@borsaitaliana.it by **Wednesday, June 13th 2018**.

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2.0 Test Overview

All market participants are required to logon to MIT, SOLA and to MITCH/GTP/GTP Lite/HSVF data feed services from all relevant applications.

The instruments available for the Disaster Recovery (for all markets) test will be the ones configured for the trading session of Monday, the 18th June 2018.

The test is performed in the production environment and the services involved are:

- **MIT platform** for the MTA, MIV, AIM Italia-MAC, Bit GEM, DomesticMOT, EuroMOT, ExtraMOT, ETFPlus, SeDeX, TAH and EuroTLX markets:
 - Native Trading Gateway
 - FIX Trading Gateway
 - Drop Copy Gateway
 - Post Trade Gateway
 - MITCH (for both Multicast and Reply/Recovery services)
- **SOLA platform for IDEM, AGREX and IDEX**
- **GTP**
- **GTP Lite**
- **FTP reference data services**
- **BCS (Bit Clearing Station)**

All trades executed during the test session will not be sent to the settlement systems and **will be cancelled at the end of the test** (trades executed on the derivatives markets will be visible on BCS during the test and cancelled right after).

Please note that the Trayport service is out of scope.

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3.0 Before the test

All market participants Customers are invited to test the connectivity in terms of successful telnets to both the Primary Data Centre and the Secondary Data Centre IP addresses. In particular:

- **Millennium IT** production (Primary and Disaster Recovery) IP addresses are available:
 - for Borsa Italiana, in document MIT701 (for TAH market) MIT702 (for all other Borsa Italiana markets running on the MIT platform) available at:
<http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazionemillenniumit-mit/millenniumitmigration.en.htm>
 - for EuroTLX, in document MIT701 available at:
<http://www.eurotlx.com/en/technicaldocumentation>

Important:

- MIT Trading SDC (Disaster Recovery) TCP IP addresses are available for connection during standard market hours
- MITCH B feed is always disseminated
- MITCH B feed Reply and Recovery services are available only in case of failure of primary (A feed) ones
- TCP Responders and Multicast Heartbeat Generators for:
 - MIT Trading PDC (Primary) and SDC (Disaster Recovery) TCP IP addresses
 - MTCH A and B Feeds
 - MITCH A and B feed Reply and Recovery servicesare available every evening between 8.50 pm CET and 11 pm CET.

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- **SOLA** production (Primary and Disaster Recovery) IP addresses are available in the SOLA Connectivity guide available at:

<http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazioneidem/migrazioneidem.en.htm>

Important: SOLA SDC (Disaster Recovery) IP addresses are available for telnet (not login) during standard market hours.

- **GTP** production (A, B and C feed) IP addresses are available in the GTP004 published at:

<http://www.londonstockexchange.com/products-and-services/millennium-exchange/documentation/documentation.htm>

Important:

- GTP B feed is always disseminated
- GTP B feed Reply and Recovery services are available only in case of failure of primary (A feed) ones
- GTP Lite B feed (Live, Reply and Recovery) services are available only in case of failure of primary (A feed) ones
- GTP C feed is always disseminated
- GTP C feed Reply and Recovery services are always available
- In case of SDC invocation:
 - Only GTP C feed will be available for Borsa Italiana and ETLX markets running on the MIT platform
 - Only GTP B feed will be available for Borsa Italiana markets running on the SOLA platform
- TCP Responders and Multicast Heartbeat Generators for:
 - GTP A and B Feeds
 - GTP A and B feed Reply and Recovery services
 - GTP Lite A and B feed Real-Time, Reply and Recovery servicesare available every evening between 9.20 pm CET and 12 am CET.

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4.0 Trading Date

The trading date will be set to **Saturday 16th June 2018**.

5.0 Millennium IT platform

Customers are invited to connect to the Primary Data Center as they normally do in normal trading days in the production environment.

They will then carry out a standard trading activity such as entering/amending/deleting orders and quotes and executing trades.

Following the disaster recovery invocation, customer will be required to connect to the Secondary Data Center with the same Comp IDs where they will perform the same standard market activity as they did while connected to the Primary Data Centre.

The **Reference Data** files available via ftp will be dated 16th June 2018 (as per trading date set).

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6.0 SOLA platform

The test consists in two different sessions:

- the first one, Phase 1, is a simulation of a standard trading day with the trading systems running in the Primary Data Center while the second one
- Phase 2, will take place after the disaster recovery invocation with the trading systems running in Secondary Data Centre

In particular, the following activities should be executed:

Phase 1:

1. logon to the SOLA trading service and BCS in the Primary Data Center
2. perform standard trading activity entering/amending/deleting orders and quotes, executing trades and verifying trades reception via BCS

Phase 2:

1. Customers will be notified to logon to SOLA and BCS to the Secondary Data Centre
2. Going on trading, executing and verifying trades reception via BCS without detecting orders, quotes and trade numbers duplication (**see details in Appendix 1, paragraph 12.0**)
3. Clearing End Of Day process will be executed, closing prices and clearing report will be available via e-mail following a specific request

All trades executed during the test session will be available for customers via BCS GUI and BCS API.

6.1 Main test activities

Customers will connect to the same Production Environment IP addresses and port usually used for live environment.

Participants are required to logon with at least one user (Fix and/or sail) per type of activity performed.

During the first test session, **Phase 1**, participants shall perform the following activities:

- Login : verify the connectivity to SOLA and BCS and verify the connectivity
- validate the trading functions of their proprietary and/or third party software applications including quoting systems:
 - Enter / Modify / Cancel Orders

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- Trades management
- Quotes management (MM only)
- Check correct reception of real time feed (orders and prices)
- Check Trades in BCS

During the second test session, **Phase 2**, after the SOLA invocation, participants shall perform the following activities:

- Login : verify the connectivity to SOLA and BCS in SDC verify the connectivity
- validate the trading functions of their proprietary and/or third party software applications including quoting systems
- Check order/trades numbering (see details at Appendix 1)
- Enter / Modify / Cancel Orders
- Trades management
- Quotes management (MM only)
- Check correct reception of real time feed (orders and prices)
- Check Trades in BCS

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7.0 Group Ticker Plant

The test will start with customers connected at the usual IP addresses they connect throughout the regular trading days.

We will reproduce the failover scenario documented in paragraph 5.4 of the GTP002 available at:

<http://www.londonstockexchange.com/products-and-services/millennium-exchange/documentation/documentation.htm>

In particular:

- Before the Disaster Recovery invocation, Feed A, B and C will be disseminated in PDC. Both feed A and B will be in upper case while feed C will be in lower case.
- Following the Disaster recovery invocation:
 - feed B will be available in SDC for IDEM and will be broadcasted in lower case.
 - Customers should expect to experience a reset of message sequence numbers to one
 - feed C, available for channels H, I J, K, Q, R and S will continue to be active and will be disseminated in lower case. No changes in the sequence numbers are expected in this case. **Feed B will not be available in SDC for markets running on MIT platform.**
- Customers are reminded that the C feed is available only for markets running on the MIT platform

8.0 BTS®

Please note that BTS®:

- will failover to SDC following the Disaster Recovery invocation, consequently you are invited to connect back to the BTS® by selecting *SDC* in the *Environment* drop down menu.
- will be available
 - at the beginning of the test and
 - within 45' after the availability of SOLA after the Disaster Recovery invocation

Finally, the test is out of scope to those customers who have not fully migrated to the BTS® version running on the Linux operating system.

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9.0 After the test

The Disaster Recovery test can be considered completed once customers are connected to the Secondary Data Centre and trading activity is available.

In order to avoid any issue at the market opening on Monday June 18th 2018, we kindly ask you to restore your database at the end of the test session and in general to perform all relevant activities for avoiding any problem during the next trading day.

The possibility to telnet (not login) Primary Data Centre IP and ports will be granted. The schedule will be communicated in due course.

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10.0 Disaster Recovery timetable

The test will be performed in the production environment where **customers are invited to connect to the Primary Data Centre according with the normal trading phases available during normal trading days.** Customers are invited to connect starting from 8:00 AM CET.

Consequently, logon only will be available on TAH (no market activities will be allowed).

Time	Activity
8:30	Start of the session (and support availability)
10:30	Disaster recovery invocation
10:30	MIT already available in SDC as per hot-hot configuration. GTP feed C only available for markets running on MIT platform
11:30	SOLA back available in SDC
11:30	GTP feed B available for IDEM
13:30	End of test

Customers will be informed about relevant updates on the website at the following page:

<http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/comunicazionitecniche/comunicazionitecniche.en.htm>

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11.0 Customer Support

During the test session participants can contact the **Service Desk** at:

0080026772000 (From mobile: +39 02 45411399)

service-desk@borsaitaliana.it

Service Desk team will be available starting from 8.30 AM CET.

As usual, your **Technical Account Managers** will also be on hand for any query:

+39 02 72426512

Clients-Services@borsaitaliana.it

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12.0 Appendix 1 – SOLA and BCS Recovery Procedures

- Clients of the BCS clearing services (API and GUI), at the end of Phase 1 should logoff and logon again for test Phase 2. Trades executed before the restart of the service in Phase 1 will be available and could be downloaded during Phase 2
- An offset in the ContractNumber field of the NotifyContract/ NotifyContractByTime API layouts will be applied to trades executed before the disaster recovery. Any split trades will maintain the original contract number; in the GUI application this will be displayed in the Trades >Trades List window
- The ContractNumber field of the trades executed after the disaster recovery will restart from scratch. In order to avoid ContractNumber duplication in their data storage, customers should reset trades data related to the Phase 1 session, and submit again the related queries for the trades downloading, in order to properly manage the data realignment.
- The MarketContractNumber and OrderNumber fields of the NotifyContract/NotifyContractByTime API layouts of the trades executed before the restart will remain unchanged
- An offset to the MarketContractNumber and OrderNumber fields of the trades executed after the restart will be applied automatically by SOLA trading engine. The offset will be different from the one applied to the ContractNumber field for trades executed before the restart
- All BCS functionalities will be available as usual