

FAQs on Disaster Recovery (DR 45)

Version 2.0

October 2024

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Background:

This is with reference to the implementation of SEBI circular SEBI/HO/MRD1/DTCS/CIR/P/2021/33 dated March 22, 2021, on Business Continuity Plan (BCP) and Disaster Recovery (DR) of Market Infrastructure Institutions (MIIs).

As specified in the aforementioned circular, the Exchange has implemented and labelled these changes as DR 45 and are applicable for all users i.e. NEAT as well as Non NEAT Front End (NNF) in the CM, FO, CD, COM Segments and SLBM. In case of contingency observed at the primary site, the Exchange may have to shift its operation to DR site.

To understand the DR 45 initiative undertaken by the Exchange, a detailed FAQ is provided herewith.

FAQs:**1. For which users and segments will DR 45 initiative be applicable?**

DR 45 will be applicable for all users i.e. NEAT as well as Non NEAT Front End (NNF) in the CM, FO, CD, COM Segments and SLBM.

2. What will happen in case of switchover?

Upon switchover, all members/users will be disconnected from the primary site once it is not available. Members will have to reconnect to the trading system. Disconnection will be for trading as well as drop copy interfaces.

3. Is Multicast Tick by Tick (MTBT) available on BCP/DR site?

MTBT feed shall be available from BCP/DR site.

4. Are there any changes required in connectivity parameters upon switchover?

There shall be no changes in parameters for interactive connection as well as market data broadcast for members connecting to DR site. Member should continue to use existing connectivity parameter for connecting to NSE trading system at DR site.

5. What are the indicators for Market to start from DR site?

- Member on reconnecting at DR site will receive start of outage message. In case member is not connected, they will receive this message as a part of journal download post reconnecting to NSE trading system at DR site. Details of these transcodes are part of API specs for NNF users
- In case member is connected after switchover, they will receive end of outage message. In case member is not connected, they will receive this message as a part of journal download post reconnecting to NSE trading system at DR site.

- NEAT users shall be able to view the end of outage message on their Login screen. NEAT and NNF users can login to the trading system only after receiving the end of outage message.
- Markets shall start from DR site once the end of outage message is sent by the Exchange.

6. How to connect Extranet from BCP/DR site?

Members connecting through Leased line are requested to connect to below mentioned IP address for Extranet - 172.19.125.71.

7. Does the Exchange carry forward any outstanding orders from primary site to DR site?

For Neat Users:

Exchange shall not carry forward outstanding orders from primary site to DR site and no cancellation messages will be sent for these orders. Hence it is advised that NEAT users generate online backup for orders/trades.

For NNF Users:

Members using NNF software should clear the outstanding orders of primary site in their systems before commencing trading from BCP site. Same is also applicable for MTBT feed. This is part of the Exception Handling as mentioned in the API specs.

8. Can I download Journal Information from DR site after switchover?

Yes, Journal information download (includes only trade messages for the user) will be available to members at DR site as only trade messages are replicated at DR site.

9. Are the primary site trade details available on the Drop Copy Server after DR switchover? If no, are there any alternatives to view such trades?

No, the details of trades done at primary site will not be available on the Drop Copy Server after DR switchover.

Alternatively, NEAT Users can view trades of primary site by inquiring in hierarchy mode by keying F8 (Previous Trade) shortcut key from NEAT Front End. Corporate Manager can also view trades for all Users i.e. NEAT as well as NNF. Messages of primary site will be available in TWS Message Area of NEAT Users.

However, if the NEAT user renames or deletes the User folder and re-login the NEAT/NEAT+ terminal, then data of primary site shall not be available in the functional window as mentioned above.

10. Can members modify or cancel trade available at DR site?

Yes, Members are enabled to perform trade modification or trade cancellation on trades which are available at DR site.

11. What will be the Used limit value after switchover to DR site?

Used limit value in User Order Value Limit (UOVL) and Branch Order Value Limit (BOVL) will be reset to zero after switchover to DR site.

12. Will the Net position window functionality for NEAT Users be available at DR site??

No, Net position window functionality for NEAT users will not be available at DR site.

13. Is IPO and OFS UAT environment available from BCP/DR site?

No, UAT environment is not available for IPO and OFS.

Key aspects of DR 45:

1. Exchange shall publish stream-wise trade number of the last trade (Exchange trade number) available at DR site. Member may note that stream-wise trades upto the last trade number shall only be considered for clearing and settlement. Sample message string which shall be sent by the Exchange would be as below:

- “Last Trade Number processed on stream number 01 is 10008000.”
- “Last Trade Number processed on stream number 02 is 20004000” NNF users are requested to refer the API specs for details on transcodes.

NNF Users: Trade confirmation packet contains the stream wise details (Please refer to Message Header structure in NNF document). Members can identify the stream number from the trade carried out by the user and reconcile the same with last trade number published after switchover to DR site.

Neat Plus TWS users: The member will be able to view the message area where user can identify the streamwise trades and reconcile the same with last trade number published after switchover to DR site.

NSE’s trading system constitutes of multiple matching engines (streams). Each stream hosts a range of contracts on which trading is allowed. Accordingly, please refer the below illustration / Flow for better understanding:

- For stream 1 trade number executed at primary site is 1234567 and Exception has been initiated.
- All open orders at primary site will be cancelled. (No cancellation message will be sent by the Exchange)
- Last Trade no available at DR site for stream 1 is 123400. The message will be broadcast to all market participants that “Last Trade Number processed on stream number 01 is 123400.”

- Members who have received trades no 123401 – 1234567 of stream 1 from primary site will need to omit/delete those trades from their system as they shall not be considered by the Exchange.
 - When trading commences from DR site members will start receiving new trades starting from trade no 123401 for stream 1 based on orders activity at DR site.
 - Same logic for all other streams and segments.
2. For MTBT feeds, in case of switchover to DR site during the day, the sequence no. for the first message for each stream from DR site will be sent as 1. (Mentioned in MTBT API specs)
 3. MTBT Recovery of messages for activity at primary site will not be available when connecting to the DR site recovery channel.
 4. Order numbers provided by the Exchange from primary site and DR site will be unique and there shall not be any duplication.
 5. Due to Recovery Point Objective (RPO) there maybe gap in the data available at DR site when trading is commenced from DR site. In case members had submitted any of the below requests while trading at primary site during the said time period, they will be required to re-submit the request again after commencement of trading from DR site.
 - Assignment of various rights like Trade modification, Trade Cancellation, Cancel on Logout for user etc. from Corporate manager terminal.
 - Limit setting for Branch Id's and User Id's,
 - Trade modification done for existing trades, (Members can check their trade status from Previous trades screen)
 - Unlocking, password reset/change of user ids,
 - PRO or CLI enablement etc.

Impact on NOTIS API in case of initiation of DR 45 scenario:

1. In case DR 45 is initiated, NOTIS API will also switchover to the DR setup.
2. There will be a downtime period when members will not be able to connect to the NOTIS API during migration of NOTIS from Primary to DR setup.
3. Members will be allowed to generate token and trade information once DR setup is available for them to connect.
4. Members should wait till they receive the end of outage message on the interactive session before connecting to the NOTIS API.
5. Valid Trades of Primary site will be available for download when member connects to NOTIS API from DR site for respective segment.
6. Trades of primary site which are not migrated to DR site on interactive session will not be available in NOTIS API when services resume from DR site.

7. Only impacted members who have trades of primary site to be deleted in their NOTIS API application should take 0 download when connecting from DR site.
8. Members downloading from sequence '0' are required to adhere to the usage guidelines as mentioned in the API specs. (Spacing their consecutive download requests at least 30 seconds apart). Failure to adhere to the guidelines may result in removal of whitelisting of their IP for accessing NOTIS API.

Market participants are encouraged to refer to the API specification documents available on the Exchange website for any technical/functional queries they may have.

Note: The aforesaid changes are not available in test market for testing as the Test market environment does not have and DR setup.