

CIRCULAR**SEBI/HO/MRD/TPD/CIR/P/2024/171****December 10, 2024**

To,

All Stock Exchanges,

All Clearing Corporations,

(except Commodity Derivative segment)

All Depositories

Dear Sir/ Madam,

Subject: - Revised Guidelines for Capacity Planning and Real Time Performance Monitoring framework of Market Infrastructure Institutions(MIIs)

1. Chapter 2 of SEBI Master Circular dated October 16, 2023 inter-alia prescribes capacity planning framework for Stock Exchanges, Clearing Corporations. Further, Section 4 of SEBI Master Circular dated December 03, 2024 prescribes capacity planning framework for Depositories.
2. MIIs (i.e. Stock Exchanges, Clearing Corporations and Depositories), being systemically important institutions, provide infrastructure necessary for the smooth and uninterrupted functioning of the Securities Market. Therefore, it is imperative for the MIIs to continuously assess and monitor their system capacities. Over the years, owing to the growth of the securities market, MIIs have experienced increase in volumes, which necessitated augmenting their infrastructure relating to trading, clearing and settlement etc.
3. The framework adopted by the MIIs for their capacity planning was reviewed by SEBI in consultation with the Technical Advisory Committee (TAC) of SEBI. Based on the recommendations of the Committee and in consultation with MIIs, it has been decided to advise MIIs to ensure the following requirements while formulating the framework of capacity planning and real time performance monitoring of their Critical Information Technology(IT) systems and supporting infrastructure components: -
 - 3.1 Capacity planning methodology should be proactive, future ready and developed to help estimate/forecast future projected capacity requirements to support business activities and minimize the risk of service disruption (taking into account trend analysis of system utilization, historical volume, maximum allowed volume to all members/participants taken together such as number of orders/messages

per second, projection of customer growth/transaction volume, system performance issues, implication of any new business initiatives, possible surge in transaction volume etc.) Details of the methodology adopted by MIs shall be submitted to SEBI within 3 months from the date of the issue of this Circular after taking approval of their Standing Committee on Technology (SCOT) and Governing Board.

- 3.2 All MIs should ensure adequate system capacity in place to handle high volumes to ensure high level of service availability.
- 3.3 The installed capacity shall be at least 1.5 times (1.5x) of the projected peak load.
- 3.4 The projected peak load shall be calculated for the next 60 days based on the sustained peak load trend of the past 180 days and other relevant factors including futuristic factors as mentioned at Clause number 3.1 above. However, MIs may also calculate the projected peak load for time duration shorter than 60 days. The exact duration of sustained peak load to be considered by MIs to calculate the projected peak load shall be decided based on the consultation with their SCOT. However, the outer limit for sustained peak load shall be 10 seconds for Stock Exchanges and Clearing Corporations and 5 minutes for Depositories.
- 3.5 MIs shall conduct comprehensive stress testing on quarterly basis to identify the impact on throughput/performance/latency metrics when compared to lean period by stressing the existing load scenarios to various multiples.
- 3.6 MIs shall ensure that application design should have horizontal and vertical scalability and the same shall be tested on periodic basis.
- 3.7 MIs shall have guidelines/Standing Operating Procedures (SOPs) to identify and understand the performance of each application/process, capacity, utilization of each individual IT component, within the entire system/network architecture, used to support their IT services.
- 3.8 While devising the capacity planning and real time performance monitoring methodology, MIs should not consider each IT component/application/process in isolation and must consider inter-dependency of the IT components/applications/processes.
- 3.9 All IT systems shall be considered in this process which shall, inter-alia, include network, hardware, software, security devices, network devices, memory utilization, CPU utilization, disks, network links, third party vendor systems, supporting infrastructure etc., and shall be adequately sized to meet the capacity and real time performance requirements to support the business activities of the MI.

- 3.10 All MIIs shall implement automated performance monitoring and alert system covering all their critical applications/activities/IT components to continuously monitor the real time performance of processes/applications and utilization of its system resources at each IT component level against a set of pre-defined thresholds. These thresholds should enable the MIIs to do early detection of any possible performance issue, slowness etc. and should be set accordingly. A dedicated team should monitor such alerts and SOPs should be put in place to address such alerts in a timely manner to ensure performance of systems/applications/processes of MIIs. The said performance monitoring and alert system shall be reviewed on quarterly basis.
- 3.11 Alerts generated from the monitoring and detection systems shall be dealt proactively including necessary actions such as infrastructure up-gradation, addition of IT resources etc. shall be taken immediately to address the issue effectively.
- 3.12 All MIIs shall maintain an asset register of all IT components and monitor their usage on a continuous basis. MIIs shall examine and establish an appropriate threshold on utilization of each component. If actual utilization of any component of MII exceeds the threshold over a period as defined by MII, immediate action shall be taken to enhance the capacity. The threshold must be reviewed and approved by SCOT of the MII.
- 3.13 In general, if actual capacity utilization of any component of Stock Exchanges and Clearing Corporations exceeds 75% of the installed capacity, immediate action shall be taken to enhance the capacity. For Depositories, if actual capacity utilization of any IT component exceeds 75% of the installed capacity over a period of 15 days on rolling basis, immediate action shall be taken to enhance the capacity.
- 3.14 All MIIs shall assess impact of all changes to existing IT systems or introduction of new IT systems/applications/processes on capacity planning and real time system performances.
- 3.15 All MIIs shall also appropriately include the capacity planning and real time performance monitoring and alert resolution requirements in the service level agreement (SLA) with the third party vendors, as applicable, to meet the current and future business requirements.
- 3.16 All MIIs should have clearly defined 'Capacity Planning and Real Time Performance Monitoring Policy' which shall be approved by their SCOT and Board and would inter-alia cover various requirements of this circular. Further, the policy would require to clearly set out, among others, appropriate system utilization thresholds to provide sufficient time to meet the lead time for procurement of

additional resources or take corrective measures during real time. Such policy shall also be reviewed at least on annual basis by the MII.

4. Considering the above, Stock Exchanges, Clearing Corporations and Depositories are advised to submit their revised guidelines to SEBI on capacity planning and real time performance monitoring of all IT systems after taking approval from SCOT and Governing Board within 3 months from the date of this Circular.
5. The provision at para 3.1 shall come into effect 3 months from the date of this circular. The remaining provisions of this circular shall come into force with immediate effect.
6. This Circular supersedes the Clause 12.1 of Chapter 2 of SEBI Master Circular dated October 16, 2023 and Clause 4.62 of SEBI Master Circular dated December 03, 2024.
7. MIIs are required to take necessary steps to put in place systems for implementation of the Circular, including necessary amendments to the relevant bye-laws, rules and regulations, if any.
8. This Circular is being issued in exercise of the powers conferred by Section 11(1) of Securities and Exchange Board of India Act, 1992 read with Regulation 51 of Securities Contracts (Regulation) (Stock Exchanges and Clearing Corporations) Regulations, 2018 and Section 19 of the Depositories Act, 1996 read with Regulation 97 of Securities and Exchange Board of India (Depositories and Participants) Regulations, 2018 to protect the interest of investors in securities market and to promote the development of, and to regulate the securities market.
9. The Circular is issued with the approval of Competent Authority.
10. This Circular is available on SEBI website at www.sebi.gov.in under the categories "Legal Framework" and "Circulars".

Yours faithfully,

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