



## PREFACE

Co-location facility is offered by NSE to desirous COLO participants to allow their systems to be located within NSE premises in designated co-location area to connect to the trading platform of NSE and to receive market data. For this, NSE provides rack space, connectivity from racks to trading system, power supply and cooling services. However, hardware within the rack space and the software within that and other peripheral systems and services inside the rack space are under the control of the COLO participants concerned and NSE does not exercise control or oversight or monitoring obligation towards it.

The of this policy is to establish a framework for Co-location Services (here after termed as COLO) provided by NSE. This policy provides broad guidelines to be followed for Co-location operations, monitoring and support.

## CONTEXT

Board, Management input, regulatory requirements, technology changes, SEBI circulars on Colocation form the basis for any policy to be established or refined.

Note: This policy addresses a context or a business need triggered by external and internal conditions. The external conditions include business trends, technology developments, regulatory requirements and stakeholders' concerns. It is important to highlight and emphasize that all policy making are subject to the knowledge and capabilities available to understand the impact. Therefore, this policy will have its own limitations and boundaries that are determined by the technology developments and internal capabilities to fully understand them.

## OBJECTIVES

- i) Ensure all participants who avail COLO facility have fair and equitable access to facilities, data feeds.
- ii) Ensure all participants who avail COLO facility have fair and equitable access to information related to COLO service offerings such as rack availability, fees, charges etc.
- iii) Ensure all participants using COLO experience similar service quality and similar latency with respect to exchange provided infrastructure excluding COLO participants' infrastructure installed within their allocated racks.
- iv) Ensure size of the COLO space is sufficient to accommodate all the COLO participants who are desirous of availing the facility.
- v) Ensure flexibility to avail rack space in COLO so as to meet the needs of all COLO participants desirous of availing such facility.
- vi) Ensure physical security to protect NSE's systems and systems of COLO Participants from unauthorized access.
- vii) Ensure all technology related matters such as Load Balancer, Randomization etc., and all details related to the concerned facility/ service like features, benefits, risks, etc. are communicated to all existing and desirous COLO participants.
- viii) To clearly state and establish the responsibilities of NSE COLO support staff and COLO participants (or their authorized representatives) with respect to COLO rack management.

## APPLICABILITY AND COMPLIANCE WITH POLICY

i)

The policy applies to NSE, its employees, members of NSE, vendors etc that may be engaged in providing/receiving COLO services, unless explicitly stated to the contrary.

ii) NSE is the arbiter of whether a COLO participant representative, visitor, or other person or entity is in compliance or not with this policy. COLO space shall be sanctioned subject to certain terms and conditions and not adhering to the terms and conditions may result in discontinuation of service.

iii) NSE will not be responsible for any failure to perform its obligations (i.e. providing uninterrupted power supply, precision cooling, surveillance and other services support etc.), if it is prevented or delayed on account of any force majeure including but not limited to -

- Natural catastrophe (such as earthquake, flood, hurricane, typhoon or volcanic activity etc.)
- fire, explosion, war, hostilities (whether war be declared or not), invasion, act of foreign enemies, mobilization, requisition, or embargo.
- Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war.
- Riot, commotion, disorder, strike or lockout by persons other than the Contractors Personnel and other employees of the Contractor and Sub Contractor.
- munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the Contractor-s use of such munitions, explosives, radiation or radio-activity etc.

## POLICY POINTS

1. Applicability of rules regulations and bye-laws of the Exchange, SEBI and other regulators  
The Exchange provides its members various ways of connecting to the Exchange trading system via WAN networks like leased lines, VSATs, MPLS etc. The Colocation facility is one such connectivity option available to members providing LAN as a choice. Further, as colocation additionally provides colo participants a space on payment basis to place their own infrastructure to transact member business, it is akin to member-s office/data center. In view of the same, unless otherwise specified, all rules, regulations, bye-laws, circulars and other instructions issued by NSE, SEBI or other regulators that are applicable to trading on a stock exchange, shall apply mutatis mutandis to trading activity from colocation. Any change in any rules, regulations, bye-laws, circulars or instruction by SEBI or other regulatory authority with respect to colocation facility issued after the date of this policy, shall supersede this policy. The Exchange shall incorporate the relevant changes in the policy at its next review.

### 2. Setup & Commission COLO racks

- i) IT & Network cabling and connectivity

1. NSE shall provide fair and equitable cabling and connectivity components to all COLO participants from trading system and dissemination server till the allotted COLO racks resulting in similar latency experience. However NSE is not responsible for variations in latency experience due to differences in the hardware, software, internal connectivity inside the rack space and other arrangements made by the participants as a part of availing the rack space.

2. Colo participants availing Colocation facility shall be allowed to take one or more connectivity, as specified from time to time, to the co-location facility for the of setting up or modifying parameters, trading related activities and hardware, software, network related access, software download / upload and monitoring, data downloads etc. Such lines shall be referred to as -Point to Point- (PTP) links. As a Point To Point link does not lie on the trading/data dissemination path of the Exchange, they shall not be within the purview of the Exchange. PTP Links shall be procured by, paid for and maintained by the participants without any Exchange intervention. To enable participants to seek such links, the Exchange shall provide infrastructure in the form of racks in Meet Me Room(s) to connectivity service providers based on Legal/technical/physical feasibility and limitations. Connectivity service providers shall be allowed to host their infrastructure in NSE designated area(s) referred to as Meet Me Room(s) in order to provide Point to Point link services to colo participants located in Colocation facilities.
3. NSE has put in place an appropriate, transparent and fair process for selection of connectivity service providers that may be permitted to host their infrastructure in NSE Meet Me Rooms. Such process and list of vendors has been communicated to members appropriately. The said policy is annexed.
4. NSE shall provide cable infrastructure for connectivity between NSE empanelled PTP Vendors- infrastructure located at Meet-Me room and COLO participants' racks. Based on physical /technical limitation, such infrastructure may support a specific type and/or a limited number of links per rack. Such limits/limitations, if any, shall be similar for all racks. In case COLO participants need another type or more number of connectivity, NSE shall facilitate the setup between NSE empanelled PTP Vendors- infrastructure in Meet-me room and COLO participants- rack. NSE shall not be responsible for quality or latency or other performance parameters of connectivity provided by PTP vendors to COLO participants.
5. NSE-s responsibility in terms of providing fair and equitable experience of latency shall be limited from Core IP router to its network handout into the participants rack. Participants shall be solely responsible for their experience starting from the NSE handout point, including in the rack, rack to Meet Me Room and beyond till the PTP links terminate at participants premises.
6. NSE shall allow only empanelled PTP Vendors to setup their infrastructure in Meet-Me room.
7. Before new rack(s) are added, NSE shall ensure that the cabling contractor has provided equitable cable length (from trading system/ dissemination server to each COLO participant-s rack) within acceptable range of standard deviation (+/- 1 meter)\_and with equitable quality standards across racks. NSE shall get third party audit conducted annually to confirm the above.
8. COLO participants are permitted to perform their own cabling through their authorized vendors to connect their servers located in different racks from Meet-Me room to racks so long as cabling work conforms to -NSE Colocation Guidelines- as shared with colocation participants and available on NSE-s Member Portal.
9. NSE shall allow desirous COLO participants to connect their servers at NSE Colocation, directly to their own servers at other SEBI recognized stock exchanges through Meet-Me room only. COLO participants shall use services of only PTP Vendors empaneled by NSE to connect their remote offices and their servers in other exchanges to their racks in NSE COLO facility.

10. NSE shall offer two network points with same bandwidth to each COLO participant rack to connect from trading system and dissemination server. The COLO participants may choose for each of the rack, the bandwidth to be used and may use the network points on active-active or active-passive mode. Whenever there is a network bandwidth upgrade, NSE shall encourage all COLO participants to shift to higher bandwidth. However, NSE may provide a final deadline by which all colo participants shall have to align with NSE provided bandwidth, failing which NSE may take such action as it may deem fit under intimation to the concerned member.

11. COLO participants shall be informed through the **NSE Colocation Guidelines** that there is no DR facility for COLO. However, when the market operates from BCP/DR site during live drill, their orders from COLO shall be routed from the main site to the BCP site. Similarly the dissemination shall be done from the BCP/DR site to the COLO racks in the main site.

12. NSE shall allow COLO participants to connect to trading system only through NSE's COLO facility. NSE shall not allow COLO participants to connect to NSE's trading system over NSE's internal Local Area Network.

ii) Standard electrical power configuration

1. NSE shall provide adequate power facility as may be intimated from time to time with two power feeds on each rack to ensure continuous power supply in case of any failure of one feed. NSE shall communicate the difference in power consumption limits between half and full racks. NSE shall communicate to COLO participants about the risks associated with usage of single power supply equipment. The said communication are part of **NSE Colocation Guidelines**.

2. NSE shall ensure each rack is provided with two power feeds having single phase supply and predefined voltage, ampere and power specifications for both types i.e. half and full racks.

3. NSE shall monitor the power consumption by each COLO participants at each rack. Whenever the consumption exceeds predefined percentage of maximum prescribed limit, alert is raised. COLO participants shall ensure that they do not cross 100%. In case of breach, NSE may levy additional charges or take such other action as it may deemed fit.

4. NSE shall furnish and install metered rack Power Distribution Units (PDUs) and moldings within the racks. These specified PDUs support a digital display for showing current. NSE shall permit usage of power extension cords to feed equipment as per COLO guidelines. NSE shall also permit usage of members own PDUs as long as they meet the minimum specifications as specified by NSE.

3. COLO rack request and activation

i) Application, allotment and surrender of COLO racks

1. NSE shall decide regarding reduction/addition/size configuration changes of COLO racks from time to time, taking into consideration various factors like estimated future demand, lead time, changing market conditions etc. In doing so, it shall be guided by the objective **Ensure size of the COLO space is sufficient to accommodate all the COLO participants who are desirous of availing the facility**.

2. NSE shall provide two variants of racks namely **Half** and **Full**. However, NSE may provide other variants in future after intimation to colo participants. Any specific usage conditions etc.

attributable to such new variants shall be communicated appropriately to colo participants. NSE shall also provide such services as may be prescribed by SEBI specifically, from time to time. NSE may establish appropriate rules, processes and procedures separately with respect to any such services.

3. NSE shall not allow conversion of two half racks to one full rack or vice-versa, however COLO participants shall be allowed to convert their existing full racks that were physically two half racks into two separate half racks again.
4. Each rack shall be identifiable through a unique number.
5. NSE shall establish systems and/or processes to provide a fair, equitable and transparent rack booking/surrendering experience with appropriate audit trail.
6. NSE may establish processes from time to time to restrict number of racks that can be subscribed per request and/or in total by a colo participant.
7. NSE shall communicate to all existing and desirous COLO participants about necessary prerequisites, if any, to subscribe to racks.
8. NSE shall transparently through appropriate medium communicate to all existing and desirous COLO participants the applicable charges and payment terms etc. with respect to racks.
9. NSE may review its rack charges and/or payment terms from time to time. NSE may also implement variable charges for subscription to higher number of racks with a view to keep a check on concentration of consumption.
10. NSE shall ensure flexibility to COLO participants by providing option to select/ change interactive message rate and IPs. NSE shall communicate the available message rates and maximum number of IPs that can be activated along with applicable charges, if any, through circulars. All changes shall be communicated appropriately.
11. NSE shall initiate rack allocation process only after desirous COLO participant for new rack/ existing COLO participant for additional rack submits application form, agrees to terms and conditions and meets other prerequisites.
12. NSE shall communicate *Colocation guidelines* to COLO participants as a guidance to adhere to NSE's Colocation policies and processes.
13. NSE shall consider rack as surrendered only after COLO participant vacates the rack and removes all the hardware including any cabling done by them. NSE shall levy applicable rents and other charges until all equipment are moved out of rack.
14. NSE shall communicate applicable SLAs for various types of service requests and also maintain logs of all service requests.

ii) Installation/ maintenance and access to COLO facility & equipment in COLO racks

1. NSE shall allow COLO participants or their authorized vendors to carry out set up and installation/ maintenance activities at their allocated rack/s basis its access process as mentioned at point 8 hereunder and as may be decided from time to time.
2. NSE shall provide rack door locking facility. The rack shall be opened only in the presence of the authorized person during their visits to the facility.

3. NSE shall allow installation/ maintenance activities/ inter rack connectivity cabling only with prior appointment, work permit and authority letter from COLO participant for staff of COLO participant or authorized vendor of COLO participant.
4. Infrastructure of any form/factor, i.e. hardware, software, OS, applications, antivirus etc. installed in member-s rack are owned and managed by members only. NSE shall have no role and or responsibility towards such infrastructure assets. NSE is in no way obliged to keep track of or verify the source/veracity/licensing etc. of such infrastructure. However, for administrative, legal, security etc. reasons, NSE may seek necessary details from members as and when required.
5. NSE shall allow COLO participants to carry their material outside NSE premises and COLO facility only with prior gate pass requested for the equipment.
6. NSE reserves the right to inspect any and all incoming and outgoing material in the possession of visitors at any time inside NSE premises. NSE reserves the right to not allow a person to carry any material that in NSE view is likely to be harmful.
7. NSE shall allow COLO participants to carry out installation/ maintenance work by participant-s authorized vendors only.
8. Visitor access
  - i) NSE employees-
    - a. NSE shall authorize permanent access to COLO facility to its designated employees engaged in providing COLO services.
    - b. All other NSE employees must apply for permit to visit COLO facility.
  - ii) NSE authorized vendors-
    - a. NSE shall issue a permanent access card to NSE authorized vendors to carry out regular/ day to day facility operations and maintenance work. NSE may issue a temporary access card to NSE authorized vendors to carry out adhoc/ scheduled maintenance/ emergency activities.
    - b. Any adhoc/ scheduled maintenance/ emergency activities of NSE authorized vendors shall be under surveillance.
  - iii) COLO participants/ COLO participants- authorized vendors-
    - a. NSE shall issue a temporary access permission to COLO facility visitor post verifying Govt. issued Photo ID card with the photo attached with the authority letter from COLO participant. NSE shall collect the temporary access pass from visitor as and when visitor leaves the Exchange Plaza campus.
  - iv) PTP Vendors / PTP Vendors- authorized vendors-
    - a. NSE shall allow only empanelled PTP Vendors- staff or their vendor/s with authority letter to carry out maintenance activities for their infrastructure located in Meet-Me room by issuing proper work permit.
  - v) VIP/s visit to COLO facility shall be permitted only after taking necessary approval from Chief of Business Development/ Chief of Regulation/ Chief of Technology/ Chief of Trading/ MD&CEO.
9. In the event NSE determines that one or more COLO participant/ authorized vendor fails to follow the policy, the individual/s may be immediately denied access to the COLO facility.

10. NSE shall record details of individuals who visited/ were denied access to COLO facility to carry out any work with traceability back to the service request raised by COLO participants.

iii) Improper use of COLO facility

1. COLO participants- representatives and other visitors (together Visitors) are prohibited from operating; touching, opening or accessing any software, hardware or other equipment not owned by the relevant Colocation Participant or PTP Vendors in the COLO facility. This includes, but is not exclusive to colocation cabinets, network hardware and servers, computers and monitors.
2. All waste and unused components must be removed after any work is carried out.
3. All equipment including cell phones required by visitors need to be declared along with the service request/ work permit.
4. COLO participants are prohibited from installing or using wireless equipment anywhere in the COLO facility. This prohibition includes both Wi-Fi and cellular wireless devices.
5. Visitors are prohibited from smoking, drinking or eating within the COLO facility, Meet-Me room etc.
6. All doors to and from the COLO must remain closed at all times except when an authorized person is entering or exiting the COLO facility. Doors may not be left propped open at any time.
7. No hazardous or inflammable materials (including without limitation boxes, paper, and bubble wrap) may be taken into, stored or left within the COLO or other areas within COLO facility. The COLO facility must be kept free of packaging and kept in a clean and tidy condition at all times. NSE reserves the right to discard any such materials at its discretion without notice to the visitor/ COLO participant.
8. Electrical equipment of any kind (such as laptop computers, etc.) requiring the use of an electric wall outlet may only be operated with the express permission of designated NSE/ NSE authorized vendor representative/ COLO support staff. No equipment shall be placed in front of air conditioning units, electrical panels, fire extinguishers, and fire or exit routes.
9. COLO participants are not permitted to install cables or other devices below the raised floor.
10. Drilling, sawing, soldering, burning or other similar activities are prohibited in the COLO facility by COLO participants.

4. Market Data broadcast

1. NSE shall disseminate market data through such technology as may be implemented and informed from time to time by NSE.
2. NSE shall offer uniform choices of data types and content to all its members across colo and non-colo.
3. The market data subscription charges, if any, shall be uniform across colo and non-colo.
4. The details of such subscription and charges, if any shall be communicated to all members appropriately.
5. Recovery systems for market data, if made available, shall be uniform for colo and non-colo members.

6. Due to underlying technological differences between members presence in colo vs members in non-colo, the dissemination process may vary and shall be communicated to all members appropriately.

7. NSE shall provide fair and equitable access to market data up to its network handout in member-s rack; beyond which NSE shall not be responsible.

## 5. COLO support & helpdesk

### i) Incident and rack service request management

1. NSE shall provide an appropriate mechanism for query resolution, operational support, problem solving etc.

2. NSE shall publish and communicate relevant contact details for such support services.

3. NSE shall establish systems and processes for logging and ticketing of all requests, problems and incidents related to COLO facility raised by COLO participants with the COLO support team to enable efficient tracking and closure on both sides.

4. NSE shall establish systems and processes to deliver fair, transparent and equitable service to all COLO participants by serving all COLO participants- requests in a similar manner.

5. NSE shall provide similar services to all colo participants. NSE may operationally review the services provided and as a result may modify/terminate any existing services or may introduce new services. Any changes in services shall be duly notified to all colo participants via appropriate means.

## 6. Monitoring and oversight

### i) Latency monitoring & reporting

NSE shall ensure that all COLO participants experience similar latency with respect to exchange provided infrastructure.

1. Before new COLO racks are added and commissioned, NSE shall ensure that all COLO participants- racks have similar network path latency within 99% confidence interval across COLO racks in line with 2 (i) 5 of this policy.

2. NSE shall engage experts to record network path latency of data feeds in all rack switches at predefined periodicity as per SEBI directions.

3. NSE shall record delay range of tick data reaching at recovery server compared to Multicast switch at predefined periodicity as per SEBI directions.

ii) NSE shall provide appropriate backup and contingency for breakdown of NSE provided infrastructure viz. air-conditioning and power in COLO facility.

iii) NSE shall maintain auditable database of technology assets used in providing COLO facility.

## 7. Data retention and archiving

Data retention and Archival Data retention covers all data related to COLO services retained in NSE-s custody or control in whatever medium such data is contained in. ·Data· refers to not only the information contained in electronically readable format but also includes information

contained in paper documents, audios and videos. NSE shall retain and archive data as per NSE Data Retention Policy.

#### 8. Change management

NSE shall adhere to change management (including stakeholder communication) guidelines and procedures while implementing any policy or process changes related to COLO facility and services. NSE shall maintain auditable record to the extent possible of changes done and changes not pursued with reason to the processes defined for implementing COLO policies. Advance notice shall be sent to COLO participants as per change management guidelines specific to the type of change except in level III/ level IV disaster scenarios. NSE shall review and revise the policy as and when required based on changes/requirements emanating from regulatory directives, technical developments or business perspectives but at least once a year during the period April to June. The revised policy shall be placed before the next meeting of the Board of Directors for their ratification.

### Point To Point (PTP) Link providers at Colocation

Exchange, vide its circular NSE/MEM/12985 dated August 31, 2009 announced the launch of Colocation services along with the guidelines/ procedure to be followed by members interested in availing Colocation facility. Members availing Colocation facility are allowed to take one or more leased lines to the co-location facility from different telecom service providers for the of setting up or modifying parameters, trading related activities and hardware, software, network related access, software download / upload and monitoring and data downloads. Such lines are called Point to Point (PTP) links.

A PTP link does not lie on the trading/data dissemination path of the Exchange. Hence, the equal-length concept does not apply to PTP links. PTP links are not within the purview of the Exchange as they are procured by, paid for and maintained by the member without Exchange intervention. However, the Exchange has policies related to where PTP link can terminate.

During the nascent stages of colocation, the Exchange had communicated Leased Line providers for PTP links available in Colocation facilities. Subsequently, members were allowed to take leased lines from any telecom service providers for connecting their racks in Colocation to their respective offices etc. Information in this respect was published on the NSE website. Currently, multiple reputed national level telecom vendors serve Exchange members for PTP links.

Currently, to enable members to seek such links, the Exchange provides infrastructure in the form of racks in Meet Me Room (MMR) based on technical and physical feasibility. Member-s chosen PTP link provider can host their MUX in such a rack. The stock of racks in MMR is depleting. It is seen that new vendors are now showing interest in providing similar services. It is thus felt necessary to lay down policies and procedures to manage PTP link vendors.

The following is proposed as policy and process to manage PTP link providers- w.e.f. April 1, 2017:

1. Existing PTP vendors present in MMR of colocation shall be considered as empanelled if they fulfill the criteria laid down in this regard
2. Racks provided to data vendors, International Network Carriers etc. in MMR, if any, shall be beyond the scope of this policy
3. New PTP vendors desirous of providing PTP services to members in colocation will make an appropriate application to .
4. Empanelment shall be done once every year where in applications shall be scrutinized and placed before the during the month of May
5. The committee shall consider the following:
  - Necessary licenses (DOT / NLD etc. as applicable) are available with the applicant to provide Point To Point connectivity.
  - The entity has at least 3 years standing in the telecom industry as a national level player with extensive coverage across the metro cities and other major cities

- The applicant has necessary orders from at least 10 unique members of the Exchange for PTP links
- Availability of Physical infrastructure such as Rack space, cable duct space, inter rack cabling trays/duct, power etc. Any other norms/pre conditions that the Empanelment Committee may decide from time to time

6. The results of the Empanelment process shall be declared/communicated and the new list of approved PTP vendors shall be updated on the website within 5 working days

Without prejudice to the right of to frame rules, general rules and processes with respect to rack allocation in MMR shall be as follows:

1. Only half rack shall be allotted at a time
2. An existing empanelled Telecom Vendors can later apply for additional racks.
3. Exchange shall endeavor to provide a rack in the desired area of colocation subject to availability; Exchange shall otherwise allot rack as per availability.
4. There shall be no charges for the 1st half rack allotted to a PTP vendor in MMR room.
5. From the second rack onwards, normal charges applicable to colocation racks shall be charged w.e.f. April 1, 2017.
6. Additional Racks shall be allotted only upon receipt of advance payment. Billing for allotted racks shall be done on annual basis in advance. The billing will be in line with the process followed by the Finance & Account Team for racks in colocation facility.
7. Additional racks shall be allotted subject to availability only if one or more of the following condition is encountered:
  - The PTP Vendor has exhausted 75% of the existing racks capacity
  - Due to technical/physical constraints, Exchange is not able to provide for inter rack cabling thus limiting the vendors capability to service clients located across colocation
  - The PTP Vendor has at least 10 orders from members who have racks located in a particular area of the colocation away from the current rack
8. Exchange shall permit the PTP Vendor to interconnect racks in various parts of colocation based on technical and physical feasibility
9. Such racks are not meant for trading and hence service/data etc. provided to normal racks shall not be available to such rack. Further, any scheme of rebate, discount, free period etc. by whatever name called shall not be applicable to such racks if made applicable to normal racks in colocation.