**Master Circular IT 2023**

IT Master circular for market participants.

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## **Introduction: -**

BSE provides managed communication links to Market Participant offices within India. The connectivity services are offered through a wide range of LAN and WAN technologies. **Section 1** covers details of connectivity provided by BSE.

BSE provides home grown applications as well as Application Programming Interface (API’s) to Market Participants for trading and post-trade activities. Details of applications is covered in **Section 2**. These applications are available on BSE provided connectivity. Most of the applications are also available over web.

Ongoing support to Market participants is provided through Help Desk as well as specialised support teams. Details are covered in **Section 3**.

This circular combines all previous circulars and notices related to Exchange connectivity, application parameters and support for benefit of market participants. **Major changes** are summarised below. Changes in commercials wherever applicable will be effective from 1st April 2023.

**Telecom: -**

* Technology refresh of leased line equipment has commenced. Rollout details in **Section 3**
* Charges for 4Mbps leased lines and Co-Location have been revised.
* Telecom operators have been added / removed from few types of services. Drop down menus for operator selection have been appropriately amended in BEFS module.
* Minor tweaks in link cancellation charges done in view of revised logistics charges and capex spends.

**Applications**: -

* Parameters for some of the applications have changed.
* BEST application has been phased out.

**Support: -**

* Some of the help desk numbers have changed. Please make note of updated numbers.

**Definition of Market Participant**: - An organisation is termed as Market Participant (MP) if it confirms to one or more of following criteria: -

1. Is registered Stockbroker / Clearing Member of any of BSE’s trading segments.
2. Is registered Clearing Bank / Custodian with ICCL.
3. Is registered Depository Participant / Registered Transfer Agent with CDSL.
4. Is registered Data Dissemination Vendor with BSE
5. Is empanelled software development vendor with BSE / ICCL.

# **Section 1: Connectivity.**

Connectivity provisioning: BSE follows ISO9001:2015 processes for provisioning connectivity with defined SLA’s. SLA’s are however site feasibility dependent. Non-feasible locations are either cancelled / are requested to wait longer till operator (s) build up their plant till the site.

Table below gives a snapshot view of different connectivity options with provisioning SLA’s.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No** | **Link type** | **Recommended use.** | **Speed and latency** | **Provisioning SLA’s** |
| 1 | Colo LAN | For algo trading engines requiring very low latency to trading backend servers. | **10 Gbps.**8 – 10 Microseconds | 2 days |
| 2 | Campus LAN | For participant offices within BSE buildings – P.J. Towers, Rotunda, and Cama buildings. | **1 Gbps**1 millisecond (ms) | 2 days |
| 3 | Leased lines \* | For participant offices offering retail broking services.  | **4 Mbps**5 ms local, 20ms long distance | 30 days45 days for outstation. |
| 4 | High Speed leased lines | For participant’s datacentres where aggregated order routing and back office connects to BSE. (Outstation only 10Mbps) | **10 Mbps/ 45 Mbps/ 100Mbps** 5 ms local,20ms long distance | 30 days45 Days for outstation |
| 5 | MPLS \* | For participant offices outside Mumbai. | **4 Mbps/ 10 Mbps**25 – 80 ms | 45 days |

‘\* Response time varies with distance. ms means milliseconds.

Broadly, the communication infrastructure confirms to following goals: -

1. No single point of failure in backbone area. Last mile redundancy options through different operators.
2. Star topology network. Clean traffic between users and BSE servers. No site-to-site communication. No need to deploy specialised security hardware.
3. Built-in seamless connectivity to BSE’s primary and Disaster recovery facilities.
4. Cost effective quality services.

## Generic terms and conditions for connectivity provisioning: -

1. An office is considered market participant office if it’s owned / rented / leased / licenced to the participant. Participant should be able to furnish requisite proof as and when requested by BSE.
2. Staff operating on trading terminals should be on participant’s payroll.
3. Participant should have effective control over functioning of the office.
4. Connectivity provisioning at MP’s office is done based on MP’s requirements. Connectivity is provisioned on MP’s name. Individual franchise is not eligible to apply directly. MP must apply to BSE in prescribed form available through BSE Electronic Filing System (BEFS) login.
5. In case of wireless MPLS circuit, BSE would request No-Objection clearance (NOC) from landlord of the premises where connectivity is desired. This NOC will help our supplier vendor to install Antenna at respective building terrace and pull wires to MP’s office. Scanned copy of NOC will have to be uploaded through BEFS module. Hard copy is to be despatched to BSE Ltd, 23rd Floor, P.J. Towers, Dalal Street, Fort, Mumbai 400001.
6. BSE will issue networking gear to participant’s office at the time of connectivity provisioning. This networking gear will be property of BSE Ltd and must be surrendered back at time of connectivity cancellation. This gear will be in control of BSE and MP is required to ensure that relevant site requirements are maintained at all the time for gear to function smoothly.
7. To issue network gear, BSE would be required to generate e-way bills. MP would be expected to validate e-way bill within specified timelines for smooth commissioning of links.
8. The networking gear will be under comprehensive maintenance with BSE assigned vendor. Routine faults / replacement will be done at no extra charge to MP. However, if the gear fails due to negligence on part of MP, BSE reserves right to recover part or full cost from MP.
9. MP office will be assigned IP subnet. MP can allocate IP address to their terminals from within this subnet. MP must segregate their internal network from BSE assigned subnet by either having additional NIC card on terminals or by having static NAT on their interfacing private switch.
10. Sharing of links between MP offices is not permitted.
11. Connectivity charges are bundled for entire service which includes amortised capital cost component of network gear; link costs towards operator lease; maintenance cost of the network gear and provision of disaster recovery. Recovery of these charges are yearly in advance. The guiding principle in devising these charges is that the network will be operated on “Not for Profit” basis. For most of market participants, recovery is through CBS (Common Billing System). For some category of market participants, it’s based on advance invoice. In such cases, BSE reserves right to levy Security Deposit of network gear which would be deployed at MP office.
12. For WAN links, BSE has strived to remain operator neutral. However, in few cases, operator infrastructure may not be feasible at customer office. This could be due to techno-commercial or logistics reasons. Further, link costs with operators are arrived at on pan-India basis. There could be some local variance for same operator. However, BSE charges remain fixed. Commercially non-feasible links carry different tariffs and are billed and commissioned in concurrence with participant.
13. BSE has over the years witnessed overall link uptime more than 99.9%. However, there could be cases where individual downtime would affect operations of MP. BSE strongly recommends MP’s to avail WAN links from two different operators for better link availability. MP’s may note that network services are offered on best effort basis.
14. Shifting of WAN links (Leased lines / MPLS / High speed links) between offices is not permitted. For such cases, MP’s must take fresh circuit in new office and surrender existing link.
15. Site requirements: BSE provided network equipment has to be kept in dust free environment with proper air conditioning and UPS power supply. The output voltages from UPS should be in range 220 V – 240 V with Neutral to Earth voltages less than 2 volts. In case operator Mux has been installed at MP’s office, provision of 24X7 electricity and appropriate air-conditioning is required.

## **Redundancy and business continuity:** -

BSE Strongly recommends that members avail redundancy for their connectivity through two separate operators. Normally leased line should be backed up with another leased line of same capacity. MPLS can be provided as redundant link to a leased line.

Campus LAN and Colo customers get two Ethernet drops from different switches.

BSE also recommends that market participant maintain at least two sites preferably in geographically different areas to ensure that any type of failure does not impact their business operations.

## **Other connectivity:** -

**Internet:** BSE also has applications hosted on web. To access these applications, market participant needs to have their respective internet link and application passwords. Email ID for internet-based applications assistance is bsehelp@bseindia.com

**VPN:** VPN connectivity is available for software vendors who wish to test functionality of their applications with BSE published API’s. This setup is made available for short term on need basis for BSE’s development environment without market multicast. For details, vendors may please write iml.support@bseindia.com

**Colo:** The Co-Location facility (Colo) is provided by BSE in its premises at 1st Floor and Ground Floor. Day-to-day activities are handled by NTT under instructions from BSE. Online application form is available in BEFS module. For details and offers, participants are requested to contact respective account managers or write to tech.prog@bseindia.com

**Data feed:** Data feed customers have separate connectivity form and charging mechanism. For more details, please write to datafeed@bseindia.com

**Participant owned links:** Participants owned links can be connected to BSE network using any of these methods. (a) Allow BSE to manage the router terminating at their end and use BSE provided ports at BSE DC. (b) Host their own routers at BSE DC and manage their link themselves. Commercials for both options are detailed in Link charges table below.

**Member SOC :** Connectivity is provided over Internet VPN to member’s private network. For more details write to bsemsoc@bseindia.com

**Link Charges:** - Charges mentioned below exclude applicable taxes which would be levied yearly in advance as per prevailing rules. All costs are in Indian rupees. Operator preference option is available in the online application form.

|  |  |  |  |
| --- | --- | --- | --- |
| **S N** | **Type of link** | **One Time Charges Rupees** | **Annual recurring charges Rupees \*** |
|  | **Leased Lines** |  |  |
| 1 | 4 Mbps Local Leased line anywhere in Mumbai upto 50km. | 10,000 |  **51,000**  |
| 2 | 10 Mbps Local Leased line in Mumbai | 10,000 |  1,60,000  |
| 3 | 45 Mbps Local Leased line in Mumbai | 10,000 |  3,30,000  |
| 4 | 100 Mbps Local Leased line in Mumbai | 10,000 |  4,50,000  |
| 5 | 4 Mbps Long Distance Leased Line anywhere in India | 20,000 |  2,35,000  |
| 6 | 10 Mbps Long Distance Leased Line anywhere in India | 25,000 |  3,80,000  |
| 7 | 100 Mbps Long Distance Leased Line anywhere in India | 25,000 |  10,00,000  |
|  | **MPLS** |  |  |
| 8 | 4 Mbps MPLS anywhere in India | 20,000 |  66,000  |
| 9 | 10 Mbps MPLS anywhere in India | 15,000 |  2,00,000  |
|  | **Campus LAN and Colo** |  |  |
| 10 | 1 Gbps Campus LAN within PJ Towers, Rotunda and Cama Building |  As applicable |  15,000  |
| 11 | 2 Nos. of 10Gbps fiber ports from BSE Colocation Switch. | As applicable |  75,000  |
|  | **Third party hosting** |  |  |
| 12 | Hosting charges for 3rd party routers | As applicable | 60,000 |
| 13 | BSE Port Charges for interconnection. | 10,000 | 60,000 |

* In case of BSNL, 2Mbps long distance leased lines, additional Rs. 70,000/- applicable.
* CDSL interconnect charges of Rs. 15,000/- yearly plus taxes on per link basis wherever applicable.

**Cancellation Charges:** - All charges in Rupees. Applicable taxes extra. For all connectivity type, lock-in period of 1 year. Thereafter, proportionate refund from yearly charges with 1 months’ notice period.

|  |  |  |
| --- | --- | --- |
| **S. No** | **Connectivity Type** | **Cancellation charges in Rupees** |
| 1 | Leased Lines | 5,000 local.15,000 outstations. |
| 2 | MPLS links | 15,000 |
| 3 | Campus LAN | 6,000 |
| 4 | Colo | 7,000 |

**Miscellaneous charges:** - For cases where the BSE provided equipment gets damaged due to reasons attributable to MP, BSE may recover appropriate charges from MP as a token penalty. For cases where insurance claim is possible, one-time recovery will be made from MP and refund will be provided once insurance claim comes through.

# **Section 2: Application parameters.**

Following applications are currently available over internet.

|  |  |  |
| --- | --- | --- |
| **Application Description** | **Generic Name** | **URL over Internet** |
| Single Sign-on for – Unique Client Code. Extranet, Location ID Registration. Electronic Contract Notes. BSE Electronic Filing System. Customer Relationship System. Book Building.BSE Online Surveillance System (EBOSS).Liquidity Enhancement Incentive Program (LEIPS).Real Time Risk Management System (RTRMS).SME Market Making Compliance System.Collateral | Members SSO portal | <https://membersso.bseindia.com> |
| Collateral and early pay - in | CLASS  |  <https://class.bseindia.com/> |
| BSE Online trading  | BOLTPlus On Web | Exe based application<https://bow1.bseindia.com/>  |
| BSE Currency | BOLTPlus Currency | Exe based application[https://boltplus1.bseindia.com/](https://boltplus.bseindia.com/)  |
| Interconnected Debt Market | ICDM | <https://icdm.bseindia.com/bonds/html/index.html> |
| Mutual funds | BSESTARMF |  [https://www.bsestarmf.in/index.aspx](https://ind01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.bsestarmf.in%2Findex.aspx&data=02%7C01%7CSanjay.Pardiwala%40bseindia.com%7Cd30ddd17924c4c4dbc1b08d7d12a06eb%7C673d78df71354df68573dba39180888d%7C0%7C0%7C637207850747710572&sdata=Wdb7f7A6OIdRaXYXHAcKw8IWORMMIdvPGwBTbuTOF%2Fo%3D&reserved=0) |

### **Applications over Leased Lines:**

From time to time, Disaster Recovery testing is carried out for all applications. The envisaged environment expects MP’s terminals to automatically seek Disaster Recovery Site servers in case of major outage at Primary site.

**Leased line Terminal users – Addition of secondary DNS**

All leased line terminal users, accessing BSE applications for trading and related functions are requested to add below mentioned secondary DNS entry in your terminal. This is one time change.

Currently, only Preferred DNS server IP is mentioned i.e. 10.1.125.122. Now, one more IP needs to be added as Secondary DNS in **Alternate DNS server – 10.1.22.162**

Below is a view of terminal after adding secondary DNS.



With the addition of secondary DNS entry it will help in seamless resolution of leased line based URLs when operating from Primary site or from Disaster site.

**BOLTPLUS Connectivity Manual: -**

For BOLTPLUS application details, configuration parameters are detailed in Annexure as under:



**Peripheral Applications**: For peripheral applications, the configuration parameters for working over leased lines are as per table below.

|  |  |
| --- | --- |
| **App Name** | **URL over BSE Leased Line**  |
| Single Sign-on for – Unique Client Code. Extranet, Location ID Registration. Electronic Contract Notes. BSE Electronic Filing System. Customer Relationship System. Book Building.BSE Online Surveillance System (EBOSS).Liquidity Enhancement Incentive Program (LEIPS).Real Time Risk Management System (RTRMS).SME Market Making Compliance System. | <https://memberssoll.bseindia.com> |
| Collateral and early pay-in | https://classll.bseindia.com﷟  |
| BSE Online trading  | Exe based application10.1.101.118:6080/stocks |
| BSE Currency | Exe based application10.1.101.37:6080/stocks |
| BSE StarMF | https://www.bsestarmf.in/index.aspx |

Applications:

|  |  |
| --- | --- |
| iBBS IML (Application) | <https://10.1.101.254:1000> |
| OTD (Application) | 10.1.101.102:9011 |

## **Minimum recommended configuration of trading terminals.**

|  |  |  |
| --- | --- | --- |
| **Description** | **Suggested Configuration for IML Server** | **Suggested Configuration of TWS** |
| System Configuration | Intel i3 / above or equivalent configuration | Intel i3 / above or equivalent configuration |
| Memory | 4 GB RAM minimum / 8 GB RAM Suggested | 4 GB RAM minimum / 8 GB RAM Suggested |
| Network cards | 2 Ethernet ports | 2 Ethernet ports  |
| Free Disk space | 100 GB minimum | 100 GB minimum |
| Display Resolution | 1024 X 768 | 1024 X 768 |
| OS | Windows Server 2008 R2 (64 bit) | Windows 7 or Window 10 |
| Software | DotNet framework 4.0 or above | Microsoft DotNET Framework 4.0 / 4.5 / 4.5.1 |

ETI and EMDI/EOBI is completely software and hardware independent. The member can use his discretion to decide what their requirement is and plan the hardware configuration accordingly.

# **Section 3: Help and support.**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Function** | **Telephone Nos.** | **Mail ID** |
| 1  | BSE Help Desk  | +91-22-45720400/600 & +91-22-69158500 | bsehelp@bseindia.com    |
| 2  | Link fault escalation  |  +91-22-2272 8551 | Bse.networks@bseindia.com   |
| 3  | Colo Support  |  | Tech.prog@bseindia.com  |
| 4  | Datafeed  | +91-22-2272 8145 / 8078/ 8159 | datafeed@bseindia.com  |
| 5  | IML Tech Support  | +91-22-2272 8053  | iml.techsupport@bseindia.com  |
| 6  | Link provisioning  | +91-22-2272 8292 / 8519  | Bsenetwork.logistics@bseindia.com    |
| 7  | VPN for software vendors  |  | bse.networks@bseindia.com  |
| 8  | BOLTPlus On Web BOLTPlus Currency | 022-22728080  | boltplusobweb@bseindia.com  |
| 9  | BSE StarMF help desk  | +91-22-45720450/650 & +91-22-69158550 | Mutual.funds@bseindia.com  |
| 10 | Bse SSOHelpdesk | +91-22-22725033 | Bse.Ssotechsupport@bseindia.com |
| 11 \* | Link reports |  | Bse.networks@bseindia.com |

* \* We have received good feedback for automated reports for BSE provided link up – down status and MIS reports. This facility is now extended to all Market Participants. Please write to bse.networks@bseindia.com with details of mail ID’s where MP’s wish to receive such reports for their respective links.

## Procedure for Technology refresh of Member Routers: -

1. MP’s and their branches will receive information on despatch of new router from BSE through mail or telephonic conversation.
2. Once they receive equipment, please mail scanned drop copy of delivery challan duly stamped and signed by authorised representative from site. Mail should be sent to bsenetwork.logistics@bseindia.com.
3. Our engineers will connect with you for scheduling migration from old router to new router. Preferably this will be done outside trading hours.
4. Once equipment is migrated, a separate intimation will be sent by BSE giving details of old equipment pickup.
5. In case member has sufficiently skilled manpower who can configure new equipment, please feel free to contact bse.networks@bseindia.com mentioning site details and engineer contact details.
6. Sites close to BSE building / BSE regional offices will get pre-configured equipment for box level swapping. Coordination for such sites is being done separately.
7. Once all sites under scope are migrated, a separate Notice will be issued to compulsorily take part in a market wide mock trading. Some security level parameters will be changed at global level before the mock.