

Master Circular IT 2021

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. Provision of internet at Market participant office is outside scope of this circular.

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 and application parameters for benefit of market participants. Major changes are summarised below. Changes in commercials if any will be effective from 1st April 2021: -

Telecom: -

- All 2mbps leased lines within Mumbai have been upgraded to 4mbps without any change in yearly outgo to Market Participants. Exception here is MTNL. MTNL links still work on serial technology and 2Mbps. Formal announcement for its upgrade will be done in due course.
- Campus LAN network within BSE premises has been upgraded with latest switches.
- MPLS links outside Mumbai have also been upgraded from 2Mbps to 4Mbps without any changes in yearly outgo to Market Participants.
- Forward – reverse logistics partners have been engaged for smoother movement of BSE routers to participant offices.
- Telecom operators have been added / removed from few types of services. Drop down menus for operator selection have been appropriately amended in BEFS module.
- As a pilot project, automated reports for BSE provided link up – down status and MIS reports are being sent out to MP's. 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.

Applications: -

- Change from API to EDI messaging for Trading applications.
- All BSE applications now have same URL for Primary and Disaster Recovery Site access.
- Parameters for some of the applications have changed.

Support: -

Please make note on changes in Help Desk contact centre 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 Stock Broker / 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.	2 Mbps/4 Mbps 5 ms local, 20ms long distance	30 days 45 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 days 45 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 conforms 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. Multiple applications through a single logical link; same link for connectivity to BSE, CDSL, ICCL and other related organisations under BSE umbrella.
5. 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.

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 application 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. Day-to-day activities are handled by Netmagic 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 can now bring their own links inside BSE datacentre. To connect same to BSE trading network, they have two options. (a) Allow BSE to manage the router terminating at their end and use BSE provided ports at BSE DC. Yearly cost excluding taxes is Rs. 60,000/- as BSE port charges. (b) Host their own routers at BSE DC and manage their link themselves. In this case, yearly cost is Rs. 60,000/- p.a. for every 2U Hosting charges and Rs. 60,000/- p.a. as BSE Port charges. Taxes extra.

Member SOC : MPLS links are provided at rates applicable to market participants to Member's security operations center (SOC). There is a separate drop-down menu option in BEFS Connectivity form application. 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	2 Mbps / 4 Mbps Local Leased line anywhere in Mumbai upto 50km.	10,000	48,000
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	2 or 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
	Campus LAN		
7	1 Gbps Campus LAN within PJ Towers, Rotunda and Cama Building	As applicable	15,000
8	2 Nos. of 10Gbps fiber ports from BSE Colocation Switch.	As applicable	50,000
	MPLS		
9	2 Mbps MPLS anywhere in India	10,000	66,000
10	10 Mbps MPLS anywhere in India	15,000	2,00,000
	Third party hosting		
11	Hosting charges for 3rd party routers	As applicable	60,000
12	BSE Port Charges	10,000	60,000

- In case of MTNL, 2Mbps long distance leased lines, additional Rs. 80,000/- applicable per annum excluding taxes.
- Tariff card for MTNL 10Mbps links is additional Rs. 70,000/- per annum.
- 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 outstation.
2	High speed leased lines	25,000
3	MPLS links	15,000
4	Campus LAN	Nil
5	Colo	Nil

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	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/
BSE Electronic Smart Trader	BEST	https://best1.bseindia.com
Interconnected Debt Market	ICDM	https://icdm.bseindia.com/bonds/html/index.html
Mutual funds	BSESTARMF	https://www.bsestarmf.in/index.aspx

Applications over Leased Lines:

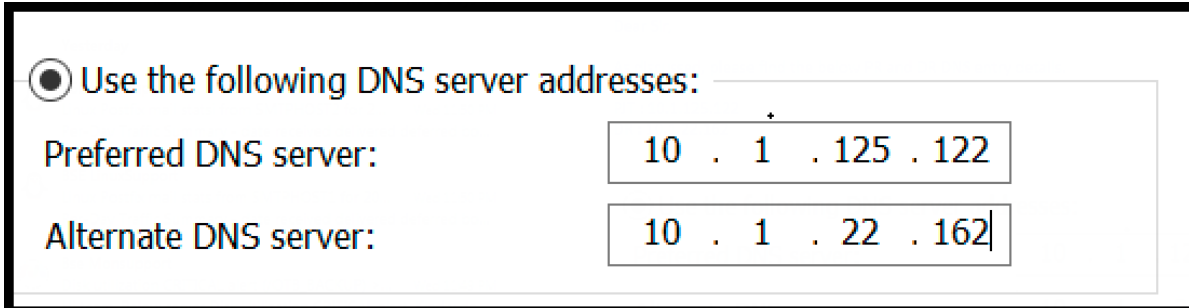
From time to time, Disaster Recovery testing is carried out for all applications. The envisaged environment expects MP's terminals to automatically seek Disaster Recovery Site servers in case of major outage at Primary site.

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.



Use the following DNS server addresses:

Preferred DNS server: 10 . 1 . 125 . 122

Alternate DNS server: 10 . 1 . 22 . 162

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 attached Annexure1.



BOLTPLUS
Connectivity Manua

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 Members Unique Client Code Extranet Location ID Registration Electronic Contract Notes BSE Online Surveillance System (EBOSS) Liquidity Enhancement Incentive Program (LEIPS) SME Market Making Compliance System	https://memberssolliam.bseindia.com
BSE Electronic Filing System	https://befssl.bseindia.com
Customer Relationship System	https://bsecrsl.bseindia.com
Book Building	https://ibbsll.bseindia.com/
Real Time Risk Management System (RTRMS)	https://rtrmsll.bseindia.com/
Collateral and early pay-in	https://classll.bseindia.com

BSE Online trading	Exe based application
BSE Currency	Exe based application
BEST	Exe based application
BSE StarMF	https://www.bsestarmf.in/index.aspx

Applications:

iBBS IML (Application)	Exe based application
OTD (Application)	Exe based application

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	+91-22-30594000 (hunting)	bsehelp@bseindia.com
2	Link fault escalation	+91-22-30594000	Bse.networks@bseindia.com
3	Colo Support		Tech.prog@bseindia.com
4	Datafeed		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 BEST	022-22728080	boltplusobweb@bseindia.com best@bseindia.com
9	BSE StarMF help desk	+91-22-30594050	Mutual.funds@bseindia.com