**Master Circular IT 2016**

IT Master circular for market participants.

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# Section 1: Connectivity.

BSE provides managed communication links to Market Participant offices within India. The connectivity services are provided through a wide range of LAN / WAN and Satellite based technologies. Some of the applications are also available over web. Provision of internet at Market participant office is outside scope of this circular.

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 Vendor with BSE
5. Is empanelled software development vendor with BSE / ICCL.

Connectivity provisioning: BSE follows ISO9001:2008 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. Likewise, Road permit cases have additional provisioning delay over and above SLA’s.

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. | 10Gbps.  8 – 10 Microseconds | 2 days |
| 2 | Campus LAN | For participant offices within BSE buildings – P.J. Towers, Rotunda and Cama buildings. | 1Gbps  1 ms | 2 days |
| 3 | Leased lines \* | For participant offices offering retail broking services within Mumbai. | 2Mbps  5 ms local, 20ms long dist. | 30 days |
| 4 | High Speed leased lines | For participant’s datacentres where aggregated order routing and back office connects to BSE. | 10Mbps / 45Mbps  5 ms | 30 days |
| 5 | MPLS \* | For participant offices outside Mumbai. | 2Mbps / 45Mbps.  25 – 80 ms | 45 days |
| 6 | PoP \* | For participant offices in metropolitan cities – Delhi, Kolkata, Chennai and Ahmedabad. | 2Mbps / 45Mbps.  25 – 80 ms | 45 days |
| 7 | VSATs | For remote retail locations requiring higher reliability for backup links. | Shared TDM / TDMA. 600 – 900 ms. | 30 days |

‘\* Response time varies with distance from Mumbai.

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. Multiple applications through a single logical link.
5. Same link for connectivity to CDSL, ICCL and other related organisations under BSE umbrella.
6. Cost effective quality services.

## Generic terms and conditions for connectivity provisioning: -

1. Connectivity provisioning at MP’s office is done based on MP’s requirements. Connectivity is provisioned on MP’s name. Individual franchise names are not eligible to apply. MP has to apply to BSE in prescribed form. The form along with it’s relevant annexures are to be signed by MP’s authorised signatory and stamped with company round seal. It has to be submitted at BSE’s Network Logistics, 22nd Floor P.J. Towers, Dalal Street, Fort, Mumbai. Scanned copy of application forms and annexures are accepted, but for records sake hard copy is absolute must and it’s submission date is considered as date of application. BSE has taken steps for electronic filing of such applications. Once it is thoroughly tested, same would be announced.
2. 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.
3. Staff operating on trading terminals should be on participant’s payroll.
4. Participant should have effective control over functioning of the office.
5. 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 has to 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.
6. 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.
7. MP office will be assigned IP subnet. MP can allocate IP address to their terminals from within this subnet. MP has to 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.
8. 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 normally yearly in advance except for few cases where it’s monthly. 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 internal billing. 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.
9. 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 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.
10. BSE has over the years witnessed overall link uptime in excess of 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.
11. Shifting of WAN links (Leased lines / MPLS / PoP / High speed links) between offices is not permitted. For such cases, MP’s have to take fresh circuit in new office and surrender existing link. VSAT shifting between offices is however accepted subject to feasibility.
12. 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 of VSAT, Dedicated earth pit for outdoor antenna and Indoor unit is a mandatory site requirement.
13. Road Permits – In specific localities across the country, road permit is required to despatch the equipment. In such cases, onus of obtaining road permit with requisite costs thereof falls on Market Participant. BSE on it’s part will furnish all relevant documentation.

## Redundancy: -

Tables below lists connectivity type and recommended redundancy options. *R stands for Recommended, Y stands for technically feasible X is not recommended / not feasible.*

### 2Mbps circuits

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Secondary->**  **Primary** | **Local Leased Lines** | **Long Distance LL** | **MPLS** | **PoP** | **VSAT** |
| Local Leased Lines | R | X | X | X | Y |
| Long Distance LL | X | R | Y | X | Y |
| MPLS | X | Y | R | Y | Y |
| PoP | X | X | Y | R | X |
| VSAT | Y | Y | Y | X | X |

10Mbps / 45Mbps circuits. (Redundancy with same capacity circuit)

|  |  |  |  |
| --- | --- | --- | --- |
| **Secondary->**  **Primary** | **Local Leased Lines** | **Long Distance LL** | **PoP** |
| Local Leased Lines | R | X | X |
| Long Distance LL | X | R | X |
| PoP | X | X | R |

For Campus Lan and Colo customers, two Ethernet drops from different Core switches are offered for redundancy.

Link Charges: - Charges mentioned below exclude applicable taxes which would be levied as per prevailing rules. All costs are in Indian rupees.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No** | **Connectivity type** | **One time**  **charges** | **Recurring Charges** | **Recovery frequency** | **Code** |
| 1 | Colo LAN | Free. | | | CO |
| 2 | Campus LAN | Wired office – Nil  New office 50,000 | 1,100 | Monthly | CL |
| 3 | Direct Leased lines |  |  |  |  |
|  | 2Mbps Leased lines within 5Km from BSE | 4,000 | 40,000 | Yearly | L5 |
|  | 2Mbps circuits in Mumbai, Thane and Navi Mumbai | 4,000 | 48,000 | Yearly | LM |
|  | 2Mbps circuit anywhere in India except Mumbai | 20,000 | 3,00,000 | Yearly | LI |
|  |  |  |  |  |  |
| 4 | High Speed leased lines |  |  |  |  |
|  | 10Mbps Leased lines within Mumbai | 20,000 | 1,70,000 | Yearly | H1 |
|  | 45Mbps leased lines within Mumbai | 20,000 | 4,00,000 |  | H4 |
| 5 | MPLS |  |  |  |  |
|  | 2Mbps MPLS anywhere in India | 10,000 | 1,50,000 | Yearly | M2 |
| 6 | PoP | Charges comprise of (A) Port Charges, (B) BSE WAN Charges and (C) Last Mile charges | | |  |
| 6A | PoP Port charges |  |  |  |  |
|  | PoP Port charges - Primary Link |  | 99,990 | Yearly |  |
|  | PoP Port charges – Backup Link |  | 10,000 | Yearly |  |
| 6B | BSE WAN Support charges |  | 15,000 | Yearly |  |
| 6C | PoP Last Mile | PoP’s are located in Delhi, Kolkatta, Ahmedabad and Chennai. | | | |
|  | 2Mbps within PoP municipal limits | 5,000 | 36,000 | Yearly | P2 |
|  | 2Mbps Delhi NCR (Noida, Greater Noida, Gaziabad, Gurgaon, and Faridabad) | 10,000 | 56,000 | Yearly | PN |
|  | 10Mbps within PoP municipal limits | 20,000 | 2,60,000 | Yearly | P1 |
|  | 45Mbps within PoP municipal limits | 20,000 | 4,50,000 | Yearly | P4 |
|  | 2Mbps in Rajkot, Vadodara and Surat (Only RCOM link) | 10,000 | 40,000 | Yearly | PG |
| 7 | VSATs |  | 4,000 | Monthly | VB |

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 month’s notice period.

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Connectivity Type** | **Years from date of commissioning** | **Cancellation charges** |
| 1 | Leased Lines | No cancellation charge. | |
| 2 | High speed leased lines | No cancellation charge. | |
| 3 | MPLS links | Upto 1 year | 25,000 |
|  |  | 1 – 2 Years | 20,000 |
|  |  | 2 – 3 years | 15,000 |
|  |  | Beyond 3 years | 10,000 |
| 4 | PoP Links | Upto 1 year | 25,000 |
|  |  | 1 – 2 Years | 20,000 |
|  |  | 2 – 3 years | 15,000 |
|  |  | Beyond 3 years | Nil |
| 5 | VSATs | Upto 1 year | 75,000 |
|  |  | 1 – 2 Years | 60,000 |
|  |  | 2 – 3 years | 40,000 |
|  |  | Beyond 3 years | 25,000 |

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.

### Costing for VSAT spares is as follows: -

|  |  |  |
| --- | --- | --- |
| **S. No** | **Cost head** | **Cost in Rs. (Taxes extra)** |
| 1 | Repair cost of RF head | 11,674 |
| 2 | Repair cost of Indoor unit | 11,460 |
| 3 | Repair cost of LNA | 4,500 |
| 4 | Repair cost of power adapter | 3,000 |
| 5 | Site Re-visit charges | 3,000 |

### Shifting of VSATs between MP’s offices: -

|  |  |  |
| --- | --- | --- |
| **S. No** | **Cost head** | **Cost in Rs. (Taxes extra)** |
| 1 | VSAT Shifting (Inter-city) | 31,000 |
| 2 | VSAT Shifting (Intra-city) | 23,000 |
| 3 | VSAT IDU Shifting within same premises\* | 6,000 |
| 4 | VSAT ODU shifting within same premises \* | 8,000 |
| 5 | Cabling expenses if applicable (upto 120 feet) | 9,000 |

‘\* Excludes new cabling expenses.

## 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](mailto: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 to [bse.networks@bseindia.com](mailto:bse.networks@bseindia.com)

Colo: The colo facility is provided vide Netmagic. For application details and offers, participants are requested to contact respective account managers or write to [tech.prog@bseindia.com](mailto:tech.prog@bseindia.com)

Datafeed: Datafeed customers have separate connectivity form and charging mechanism. For more details please write to [datafeed@bseindia.com](mailto:datafeed@bseindia.com)

Network Connectivity Forms: -  
Documents required for BSE Network Connectivity:

|  |  |  |
| --- | --- | --- |
| **Link Code** | **From No (s) Required** | **Description** |
| **New Application** | | |
| CL | 1 | Campus LAN application |
| L5, LM, H1, H4 | 1, 2 | Direct Leased Line application for Mumbai |
| LI | 1, 2, 3 | Direct Leased line application for outside Mumbai |
| P2, PN, P1, P4, PG | 1, 2, 3 | PoP link application |
| M2 | 1, 2, 3, 4 | MPLS link application. |
| VSAT | 1, 2, 3,4, |  |
| **VSAT Shifting application** | | |
| VSAT | 2, 3, 4, 5 | VSAT Shifting application |
| **Cancellation of Network Connectivity** | | |
| All Codes | 6 | Cancellation application with BSE provided equipment. |

|  |  |
| --- | --- |
| **Form No. 1.** Application Form (on plain paper) |  |
| **Form No. 2.** Undertaking for Network Equipment’ (on Participant Letter Head) – |  |
| **Form No. 3.** CST / LST Declaration for dispatch of equipment (on Participant Letter Head) |  |
| **Form No. 4.** No-Objection Certificate from landlord of premises for installation of radio equipment. (For MPLS / VSAT applications only) (on Landlord Letter head) . Not required if MPLS link is feasible on Fiber / Copper. |  |
| **Form No. 5.** VSAT Shifting application. |  |
| **Form No. 6.** Application for cancellation of Network Connectivity |  |

For Road Permits: In cases falling under Road Permit, BSE will provide requisite documentation and Market Participant local office has to obtain road permits at their own cost for despatch of equipment m No. 6. BSE Network connectivity cancellation application.

## Instructions for filling up the form:

### Form No. 1: Application Form for BSE Network Connectivity

1. Use capital letters to fill up this form.   
   Market Participant Code is the unique number assigned by BSE / ICCL / CDSL.   
   SEBI Registration number is the unique ID assigned to market participant by SEBI.   
   Firm Name is the registered name of Market Participant.   
   Please ensure that e-mail address of main contact person is provided as a copy of all communication for this site will be marked to this e-mail ID and most of follow-up communication will also be sent through e-mail.
2. Please prefix STD code for phone number. Preferably, furnish BSNL / MTNL phone number for easy identification of site. Mobile number and E-mail ID of the contact person at the site are mandatory. All correspondence during pre-installation and post-installation support phase will be made with this e-mail and mobile number. In the event of any change, please ensure that the same is communicated to BSE. Post installation, this mobile number and email ID will be used for circuit upkeep related correspondence.
3. Separate forms are required for Primary and Backup links. A primary link is the path through which your data will flow normally. Backup link will take over in case primary link fails. Please tick appropriate entry (Primary / Backup)
4. Kindly tick appropriate media code.   
   CL stands for Campus LAN within the three BSE buildings – P.J. Towers, Rotunda and Cama Buildings.  
   L5, LM and LI respectively stand for Direct 2Mbps link within 5KM from BSE building / Within Mumbai and adjoining areas / Within rest of India.  
   H1 / H4 stand for 10Mbps / 45Mbps direct link within Bumbai.  
   M2 stands for 2Mbps MPLS circuit anywhere in India.  
   P2, P1, P4, respectively stand for 2Mbps / 10Mbps / 45Mbps circuits to Local PoP in Delhi / Kolkatta / Ahmedabad / Chennai.  
   PN stands for 2Mbps circuits to Delhi PoP from NCR region of Delhi.  
   PG stands for 2Mbps circuit from Rajkot / Surat / Vadodara to Ahmedabad PoP.  
   VB stands for Broadband VSAT.   
   BSE may at it’s discretion swap PoP link application with MPLS if local last mile from contracted operators is not feasible.
5. Information about existing connectivity will help us in getting quicker feasibility from operators faster. If any operator has existing Mux installed at this office / building; MUX ID with operator name would help. For MTNL / BSNL links, existing telephone number within this premises (need not be in market participant’s name) would help. In cases where participant has existing link from other exchange, it’s circuit ID and operator name will help.
6. NearestCityfrom location -- Please tick appropriate nearest city name for Connectivity.
7. Choice of carrier vendor – Here Market Participant can specify his priority choice of telecom operator. 1 for most preferred operator and 5 for least preferred operator. Blank would mean BSE is free to choose priority based on logistics.  
   MTNL and TTML are available in Mumbai only. We do not have arrangements with TTSL at the moment. Operators not specifically mentioned do not have commercial relationship with BSE.
8. Signature should be from Authorised signatory of Market participant. Seal should be round seal used by market participant.

### Form 2: - Undertaking for Network Equipment: -

This undertaking is to be printed on Market Participant letterhead and submitted to BSE in paper form. BSE will issue appropriate network equipment against this undertaking. The undertaking will remain in custody of BSE till equipment is provided at market participant office for use. It is expected that market participant surrender back the equipment if he wishes to discontinue connectivity services. At the time of surrender of the equipment, the undertaking will be returned back.

Equipment that is issued to Market Participant : -

L5 / Lm / LI / HI / H4 / M2 / P2 / PN / P1 / P4 / PG – Router and modem / convertor. In some cases of M2, additional outdoor antenna is also provided.

BV – VSAT equipment comprising of Outdoor Antenna and electronics; Indoor Unit and Interconnecting cable.

### Form 3: - CST / LST Declaration –

This declaration is required on Market participant’s letterhead. Two original copies are required. The courier company will use this declaration to pass the despatched equipment through local toll / octroy booths. This has no commercial significance to market participant.

There would be cases where Road permit is required for despatch of equipment. Such correspondence will be done separately at appropriate time.

### Form 4: - NOC from landlord of premises for installation of radio equipment:

This NOC is required for cases where a radio transmission equipment is required to be installed on terrace of Market participant. Wireless MPLS antenna and VSATs fall under this category.

Wireless MPLS antenna requires a Pole mount. Pole of appropriate length is saddled along the terrace at proper line-of-sight location.

VSAT antennas require a 6 feet X 6 feet mounting space and clear visibility towards south direction. In special cases, Market participant is also advised to install Monkey Cage / Elevated platform to support the VSAT. Load of VSAT antenna with holding ballast in worst case is 100 Kg.

Any commercials towards roof rights from landlord are in scope of Market Participant.

Any commercials involved on monkey cage / elevated platform / dedicated earth pit with earth strips till Antenna is under Market Participant’s scope of work.

### Form No. 5 – Application for shifting VSATs to new location.

This form is to be used in case an existing installed VSAT given to Market participant is to be shifted to same Market participant office in different location.

### Form No. 6: - Application for cancellation of BSE Network Connectivity: -

This form is to be submitted if Market participant wishes to cancel BSE connectivity. Kindly ensure that contact person and email ID’s remain valid till full commercial closure.

Market participant is expected to return BSE provided equipment as communicated by BSE.

# Section 2: Application parameters.

## Following applications are currently available over internet.

|  |  |  |
| --- | --- | --- |
| **Application Description** | **Generic Name** | **URL** |
| Single Sign-on for –  Unique Client Code;  Extranet,  Location ID Registration;  Electronic Contract Notes;  BSE Electronic Filing System; Customer Relationship System; LEIPS;  Book Building. | BSE Connect | https://bseconnect.bseindia.com/ |
| BSE Online Surveillance System | Eboss | <https://eboss.bseindia.com> |
| Collateral and early pay - in | CLASS | <https://class.bseindia.com/> |
| BSE Online trading | BoltPlus | <https://boltplusonweb.bseindia.com/stocks/boltplus/index.jsp> |
| Real Time Risk Management System | RTRMS | <https://rtrms.bseindia.com> |
| Interconnected Debt Market | ICDM | <https://icdm.bseindia.com/bonds/html/index.html> |
| SME Market Making Compliance System | SME | <http://mmcs.bsesme.com/stocks/jsp/sme/index.html> |

## 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.

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

|  |  |
| --- | --- |
| BOLTPLUS\_CONFIGURATION\_PARAMETERS |  |

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

|  |  |  |
| --- | --- | --- |
| **App Name** | **Leased Line PR** | **Leased Line DR** |
| RTRMS | <http://10.1.101.99/stocks/jsp/rms/index.html> | <http://10.1.101.197/stocks/jsp/rms/index.html> |
| Collateral and early pay-in | <http://10.1.101.100/> | <http://10.1.101.202/> |
| EBOSS | <http://10.1.101.103/stocks/jsp/SURVEILLANCE/index.html> | <http://10.1.101.198/stocks/jsp/SURVEILLANCE/index.html> |
| Leips | <http://10.1.101.101/stocks/jsp/LEIPS/index.html> | <http://10.1.101.199/stocks/jsp/LEIPS/index.html> |
| Extranet | <http://10.1.101.98/extranet_login.aspx> | <http://10.1.101.201/extranet_login.aspx> |
| iBBS | <http://10.1.101.254/index.aspx> | <http://10.1.101.196/index.aspx> |
| iBBS IML | <http://10.1.101.254:1000> | <http://10.1.101.196:1000> |
| OTD (Application) | 10.1.101.102:9011 | 10.1.101.203:9011 |

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 core 2 duo / i3 or equivalent configuration | Intel core 2 duo / i3 or equivalent configuration |
| Memory | 2 GB RAM minimum | 2 GB RAM minimum |
| Network cards | 2 Ethernet ports | 2 Ethernet ports |
| Free Disk space | 100 GB atleast | 100 GB atleast |
| Display Resolution | 1024 X 768 | 1024 X 768 |
| OS | Windows Server 2008 R2 (64 bit) | Windows Server 2008 R2 (64 bit) |
| Software | DotNet framework 4.0 or above | DotNet framework 4.0 or above |

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 | +91-22-6136 3100 (hunting) | bsehelp@bseindia.com |
| 2 | IML Vendors | +91-22-6136 3100 (hunting) | bsehelp@bseindia.com |
| 3 | IML Tech Support | +91-2202272 8053 | iml.techsupport@bseindia.com |
| 4 | Link provisioning | +91-22-2272 8292 / 8519 | Bsenetwork.logistics@bseindia.com |
| 5 | Link fault escalation |  | [Bse.networks@bseindia.com](mailto:Bse.networks@bseindia.com) |
| 6 | Colo Support |  | [Tech.prog@bseindia.com](mailto:Tech.prog@bseindia.com) |
| 7 | Datafeed |  | [datafeed@bseindia.com](mailto:datafeed@bseindia.com) |
| 8 | VPN for software vendors |  | [bse.networks@bseindia.com](mailto:bse.networks@bseindia.com) |