

# AIRTEL INTERNET LEASE LINE

## Document Control

### Document Identification

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## Introduction to Bharti Airtel

Bharti Airtel Ltd is a leading global telecommunications company with operations in 18 countries across Asia and Africa. The company offers mobile voice & data services, fixed line, high speed broadband, IPTV, DTH, turnkey telecom solutions for enterprises and national & international long distance services to carriers. Bharti Airtel Ltd has been ranked among the six best performing technology companies in the world by business week. Bharti Airtel Ltd has more than 200 million customers across its operations. It has been offering a complete telecommunications solution to its customers on its own state-of-the-art network.

**Airtel Business** is the telecommunications solutions group of Bharti Airtel Ltd. Airtel Business has been created especially to provide platinum service to enterprise customers like you. Airtel Business provides you customized telecommunications solutions, which give your organization an edge in business. We harness the power of alliances and leading edge technology, combined with the ownership of a world-class network infrastructure, to create business-enabling end-to-end solutions. We are the single point of contact for all your data and telecommunication needs. We, at Airtel Business, adopt a unique partnership model to engage closely with customers in order to understand their specific needs, thereby creating a high impact & high value solution to address their unique requirements.



Our solutions, apart from being unique to customer's requirements, are also flexible, scalable and robust. That is why Airtel Business is the preferred partner for over 1000 large Enterprises, meeting their entire telecom needs- Mobile, Fixed Line, Data, Internet and VSAT across India. Airtel Business offers an end-to-end telecommunications solutions portfolio comprising of Voice Services, Mobile Services, Satellite Services, Managed Data & Internet Services, Managed e-Business Services and Managed Customized Integrated Solutions. It boasts of a strong management team and domain expertise. With a robust 24X7 customer support, it ensures that your business never stops.

Airtel Business brings the benefit of industry verticals to its customers. Focus on vertical segments brings the full benefit of our vertical domain knowledge and consequent design of customized vertical telecom solutions to our customers.

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We at Airtel Business see ourselves as your service partners rather than vendors. We are acutely conscious of just how critical our services are, to your business. Therefore, we have created strong, empowered teams at the regional level to take care of service provisioning as well as for the resolution of issues or faults, should you have any. This skilled manpower in the field is dedicated to making your relationship with us a smooth and efficient one.

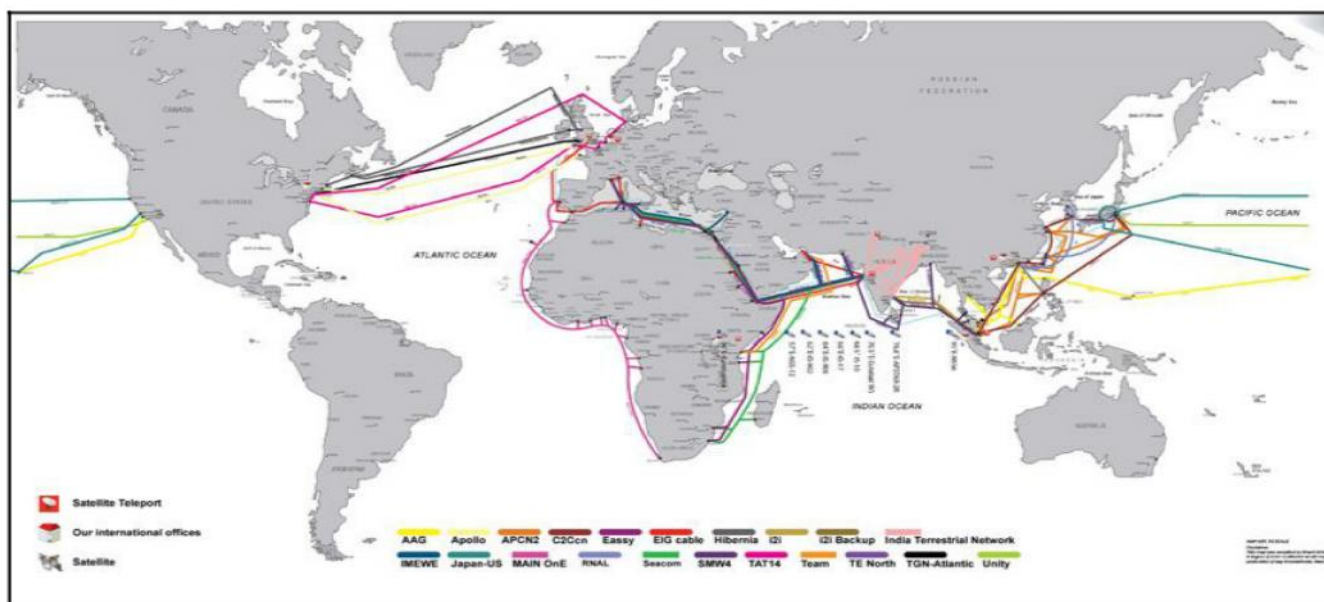
Both the service deliveries as well as the customer care teams are backed up by a strong central presence to enable seamless cross-company, cross-geography coordination. We have also created a national, centralized contact center which can be accessed toll free from any airtel mobile or land line phone in the country.

*Airtel is proud to be the trusted communications partner to India's leading organizations, working with them to meet the challenges of growth.*

*Across India, beyond India*

## Bharti Airtel's Internet Overview

**Best route with Multiple Upstream Providers:** Airtel's strategic peering with global upstream providers is backed by Service Level Agreements (SLAs) across the entire route ensuring a world-class Internet experience to customers. Routing design in Enterprise Internet Service is made in such a way so as to offer the Best Route, wherein customer traffic is announced to all Airtel peering points on transoceanic sides of India (Singapore, Hong Kong, Los Angeles, London, and New York). Using the dynamic selection mechanism of routing device, the best available route is selected and traffic is sent on that route.



**Redundancy with Multiple Cable Systems:** Airtel has multiple international cable systems either by ownership or as a consortium partner. Airtel Internet infrastructure offers three paths on every route, which ensures the shortest and least congested route. Airtel provides 225,000+ Kms of global network connectivity.

**Multipath backbone within the country:** The Internet backbone has redundant ring architecture, and is designed in three-tier architecture to provide a high level of redundancy and scalability. Airtel has more than 140 ISP POPs in India. These POPs are connected by high speed optical fiber network. Airtel internet network runs on SDH/ASON/OTN with redundancy at all levels. Every ASON node is connected to three other such nodes and provides highly redundant internet backbone for our customers.

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### *Cable Landing Stations*

Airtel offers capability of four Cable landing station through the Mumbai and Chennai CLSs which are connected to four different cable systems (two each at both locations). The Mumbai CLS is on the western coast of India while the Chennai CLS is on the Southern coast. In India, Airtel holds cable landing station ownership for the following

- I2I (Chennai)
- SMW4 (Chennai)
- EIG (Mumbai)
- IMEWE (Mumbai)

By using the Dual Internet Gateway in Chennai & Mumbai, airtel is able to provide low latency on both the Trans-Atlantic and Trans-Pacific routes.

### *Dual Stack Peering*

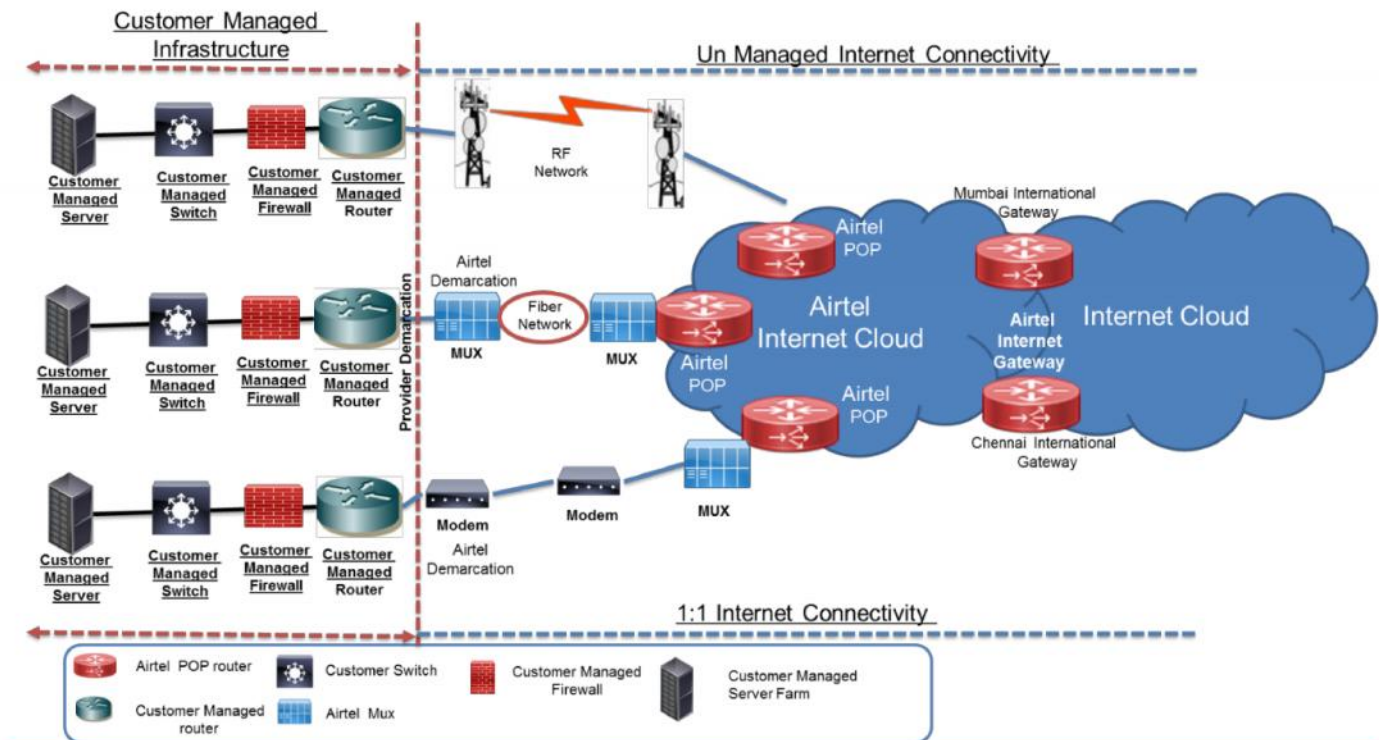
Airtel provides direct dual-stack IPv4/IPv6 connectivity to its network with its Dual Stack IPv4/IPv6 configuration at each of its Network Edges. Airtel is able to offer IPv4 and IPv6 network configuration within the same VLAN/Interface.

Customers are presented with a dual-stack configuration (each login has an IPv4 and an IPv6 address), so customers have native access to both the IPv4 and IPv6 Internet. Both versions will continue to operate simultaneously on networks well into the future.



## Network Details

### Internet Network Last Mile Diagram



## Airtel Responsibilities & Scope

- WAN, LAN and loop back IP schema for Management is provided by AIRTEL(/30 WAN IP pool and /29 LAN IP Pool)
- Installation & provisioning of Last-miles as per Feasibility.
- Handoffs will be on Fast Ethernet, Gig Ethernet & 10 Gig LAN PHY interface as per bandwidth
- Acceptance Criteria- Ping testing on laptop.
- In case there is delay/constraint in getting ROW permission from Government, the delivery timelines shall change and Airtel shall not be liable for any LD/Penalty for the delay

## Customer Responsibilities & Scope

- Rack space with Air-Cooled/Dust-Free environment for N/W Devices.
- Stabilized Uninterrupted Power supply 24x7.
- Cross-connect at DC
- In Building/In Campus Permission/ Roof rights along with permanent ladder and Space for Pole/Tower.
- LAN Cabling beyond Airtel provided Equipment
- Security of the Network equipment.
- Proper Earthing and backup power for Airtel provided equipment. (Earthing (E/N $\leq$ 3V)
- 2x6 amp Power Sockets with UPS Power Supply
- Internal cabling till Server room. (Hole for cable routing (if required)).
- Route object of prefixes and AS set of ASNs at routing registry
- Configuration at LAN network equipment
- Water proofing and security arrangement (against theft and damages)
- Basic hygiene & dust free space to be provided and maintained
- Cable Conduiting at Customer premises (ODU to IDU)

## Service Level Agreement – Internet Lease Line Services

### Average Round Trip Delay:

Average time (in milliseconds) for a 32 byte diagnostic packet to transit from Bharti's Gateway Router to Peering Router at the Foreign end and return within the Backbone Network. Under normal conditions, Airtel will ensure that following latencies are delivered to Customer.

Description	Average Round Trip Delay Time
Average Round Trip Delay (Latency) to U.S.A.	<=300 msec
Average Round Trip Delay Chennai to London	<=200 msec
Average Round Trip Delay (Latency) to Singapore	<=80 msec

Note: These are the Round Trip Delay between Airtel Gateway Router and Airtel upstream peering point

### Packet Delivery

Airtel guarantees average packet delivery in accordance with the parameters identified in the table.

Description	Guaranteed Packet Delivery
Backbone Network Packet Delivery	>=99%

\*The packet loss would be calculated by taking an average over a period of 1 month.

All Airtel SLA commitments will be from Airtel Internet gateway in Chennai to its peering points (London, Singapore, New York or Las Angeles) Subject to maximum customer load of less than 70% that customer has taken from Airtel.

### Uptime SLA

Description	Airtel Commitment - Quarterly Average Network Availability
With dual local loops (alternate providers) terminating on dual PoP's	99.95%
With local loop on Bharti Fiber/Copper (with LL backup from different service provider) terminating on same PoP	99.90%
With single local loop on Bharti Fiber	99.50%
With local loop on Bharti RF	99.00%
With local loop on Bharti Copper	98.50%

## Commercial Summary

For Link wise breakup, pls refer Annexure-1

### Commercials Terms and conditions

- Payment Terms: One Time Cost:- 100 % Advance , Annual Recurring Charges :- Quarterly Advance"
- Payment to be released on link wise basis
- Order on Bharti Airtel Limited
- Fixed price contract (subject to upward change due to license fee increase from government), No Termination for convenience. In case of link termination in between contract then whole amount of contract has to be paid.
- Mast height, anything above than 6mtr, chargeable at Rs 4000 per Mtr
- Roof rights will be provided by customer
- The rates above are applicable only for this particular scope of work. In case bandwidth upgrade/new links are required, the same will be treated as a separate case
- Airtel shall not be liable for any cost to the customer in any manner whatsoever for any loss of profits, goodwill, consequential losses (including any actions brought by a third party), whether direct or indirect.
- Any client requested for travel & manpower support shall be charged at actual
- For any hardware/ CPE on opex: Any intentional damage / mishandling / theft of equipment(s) deployed at end customer points will be the responsibility of the customer and replacement would be charged additionally at actual cost
- Site readiness & site availability (Space, rack, power earthing, internal cabling, LAN work, conduiting, access permissions) will be in customer's scope.
- All taxes, Govt. duties, levies extra as applicable/prevaling rates at time of billing/invoicing.
- Water proofing and security arrangement (against theft and damages)
- Basic hygiene & dust free space to be provided and maintained
- Cable Conduiting at Customer premises (ODU to IDU) – Customer responsibility
- Proper Earthing and backup power for Airtel provided equipment. (Earthing (E/N<=3V)
- 2x6 amp Power Sockets with UPS Power Supply
- Stabilized Uninterrupted Power supply 24x7.

ILL Unmanaged - without router		
B/w (Mbps)	CBH	CBH
4	5,000	65,000
10	5,000	100,000
15	5,000	140,000
20	7,500	180,000
30	7,500	240,000
40	7,500	280,000
50	10,000	320,000
100	10,000	600,000

ILL Managed - with Huawei router		
B/w (Mbps)	CBH	CBH
4	5,000	81,000
10	5,000	116,000
15	5,000	158,000
20	7,500	200,000
30	7,500	266,000
40	7,500	306,000
50	10,000	350,000
100	10,000	725,000

**Note: Price given are tentative and will vary depending on feasibility and ROW work involved.**