REQUEST FOR PROPOSAL

FOR

Supply, Installation, Commissioning, Training and Maintenance of SD WAN Solution for Data Centers & Branch Network

BY

HDFC BANK

Version	**: 1.0**
Reference	**: ITD/RFP/SDWAN/0719**
Date	**: 28/08/2019**

General Information

1. Scope of this RFP:

The scope of this RFP is for Supply, installation & maintenance of a comprehensive SD WAN (Software Define Wide Area Network) solution and seamless integration with the existing HDFC Bank Network Architecture. The proposal shall include:

- SD-WAN (Software Defined Wide area network) Solution need to implemented across Primary site, Disaster recover site DR (Data Center) and in all of the HDFC Bank Branch Network with MPLS, Broadband & LTE links.

- HDFC Bank intends to procure the solution for SD WAN with the following terms

  - The devices should have comprehensive onsite support for a period of 6 years from the date of acceptance given to the Bidder.

  - The equipment quoted by bidder should not be declared as End of life (EOL) or End of Sale (EOS) by the OEM (Original Equipment Manufacturer) at the time of bidding RFP & also it should not become EOS (End of Support) during first 6 years and in case OEM status does change, then the bidder should upgrade/replace the same free of charge.

  - The bidder should migrate to new setup with no/minimum possible downtime.

  - The bidder should provide OEM product training for 3 persons.

- The bidder should submit the solution architecture with the entire components, and this should include detailed description about the solution including the architecture diagram.

- The bidder should responsible for implementing the SD-WAN solution across all branch locations and Primary and DR sites without any impact for the business operations.

- The bidder should submit the OEM/Manufacturer Authorization Letter.

- The bidder should clearly mention any pre-requirements that need to be fulfilled by the HDFC Bank (Eg : if proposed solution will be deployed in the virtual environment , bidder should provide dependency software component and the required hardware and sizing for the resources Requirement).

- The bidder should submit Bill of material (without finance) including all the part numbers and Quantities in the table format along with the Technical Proposal. The line items on the bill of material that is submitted with the Technical proposal should exactly match with the Bill of material in the Finance Proposal.

- The bidder should submit a general description of the techniques, approaches and methods to be used in completing the project. (Please refer **Figure A** at page 6)

- The bidder shall submit the project plan in MS project (MPP based)

- The bidder should provide a user guide on specific customization carried out on HDFC Bank environment.

- The bidder should submit at least 1 similar (same proposed product) projects experience during the last 2 years according to the table provided in section 3-Similar Project experiences of the Implementation Partner.

- The bidder should submit at least 3 Engineers qualification according to the table provided in section 4- Details of Supporting Team.

- The selected Bidder shall appoint a single point of contact, with whom HDFC Bank will deal with, for any activity pertaining to the requirements of this RFP.

- The proposal for aforesaid scope should be submitted in two sealed envelopes consisting of the following. Based on our RFP technical template, vendor should be able to submit a soft copy of the same, by way of a CD, attached to the original Bids..
  - o Technical proposal - 2 copies (01 original/01 duplicate) & CD
  - o Financial proposal - 2 copies (01 original/01 duplicate) & CD

2. Terms & Eligibility Criteria

- Bidder should be a registered company and should be a manufacture or supplier of SD-WAN / WAN and related security applications for last 3 years.
- The bidder should be a profit-making company/firm during last 3 consecutive financial years.
- Bidders should undertake to supply mentioned solution under this RFP within 6 weeks from the date of acceptance of PO including Pre Delivery Installation (PDI.)
- The Bidder should have the facility to maintain the SD-WAN Solution related Hardware /software component and devices supplied to Bank and provide the service 24x7 support on receipt of complaint from the Bank immediately as requested.
- Bidder should maintain a stock of spare parts/complete hardware devices with application support to fulfill the bank's requirement.
- Bidder should provide partnership / authorization letters from the manufacturer and partnership status (Platinum/Gold/Silver).
- HDFC Bank does not bind itself to accept the lowest or any tender and reserves the right to reject all or any bid or cancel the Tender without assigning any reason whatsoever. HDFC Bank also reserves the right to re-issue the Tender without the Bidders having the right to object to such a re-issue.
- HDFC Bank reserves the right to accept or reject, in full or in part, any or all the offers without assigning any reason whatsoever.
- Proposals which fail to address each of the eligibility requirements above and described below in section 15 (Technical Requirement), may be deemed non-responsive and will not be further considered. Note that responses to questions must be specifically answered within the context of the submitted proposal. The Bank's evaluation team will not refer to a designated web site, brochure, or other location for the requested information. Responses that utilize references to external materials as an answer will be considered non-responsive.

3. Similar Project experience of the Implementation Partner

Bidder should provide the SD WAN Solution implementation related past project experience with reference in following format. The bidder should have completed at least 1 similar projects during the last 2 years. All the project should be local implementations.

Project Experience -#				
Company Name				
Industry	Bank /Finance /Others			
Detail Project Description	< Detail about the Project >			
Project time period / implemented Date				
Type of Network devices used in this project	SD WAN Models	Yes/No		
Technology implemented in the project	Service Provider Links (MPLS / Broadband) Encryption from PR-DC to Branches & Branches to PR-DC		Yes/No	
	Service Provider Links (MPLS / Broadband) Encryption from PR-DC to DR-DC		Yes/No	
	Service Provider Links (MPLS / Broadband) Encryption from DR-DC to Branch network.		Yes/No	
	Dual Link utilization and Failover		Yes/No	
	QoS and Traffic shaping		Yes/No	
	Implement customized rules		Yes/No	
	Link Bandwidth		<256KB/512KB/1M, etc...>	
	Number of branches		< Qty >	
Other relevant information about the project				
Names and role of technical team Members	1. 2. 3.			
Project Reference -1				
Contact Person Name				
E-Mail Address				
Contact Number 01				
Project Reference -2				
Contact Person Name				
E-Mail Address				
Contact Number 01				

4. **Details of implementation and Supporting Team**

Bidders must have qualified and skilled engineers (at least 3 Engineers) for SD-WAN maintenance & repair and be able to support 24 x 7 onsite service, please submit their certification details along with past experience.

Details of implementations should be state here.

Bidder should provide at least 3 Engineer's qualification in the following format.

Technical Staff Experience - #			
Full Name			
Academic Qualification	Graduate level		
	Postgraduate level		
Professional Qualification	Proposed SD WAN Product related Certification & awarded date		
	Other SD-WAN/ WAN Product related Certification & awarded date		
	Other network and Security related Certifications		
Number of years of Experience in Network & Security Fields			

5. **Delivery of Goods**

   After issuing the PO, all related devices with applications should be delivered to the H/O IT Stores. After the condition, specification and accessories of the relevant equipment are checked and verified by the bank's technical team. Then, vendor should deliver goods to the relevant branch locations.

6. **Installation, Configuration, Hardware maintenance & Financial Proposal**

   - The Bank is expecting to complete the process of supplying of the relevant equipment with all accessories within 6 weeks of acceptance of PO.
   - All required Hardware, software, drivers, cables, rack mount kits, media and manuals etc., should be supplied.
   - Bidder should maintain adequate stock of spare parts and Additional SD WAN appliances at the vendor's regional offices to fulfill the bank's requirement.
   - The bidder shall be responsible for delivery, installation of all Hardware appliances and software components and related devices and making them fully operational at Head-Office Data center and DR Data center and all HDFC Bank Branches within 30 working days from the date issuing of delivery instructions.
   - In case the Bank wants the equipment to be shifted to a location other than the originally indicated location, the vendor should do the necessary configuration changes in the equipment suitable to the new location and install the same at the new location without any additional cost to the bank.
   - Vendor should visit the equipment location once in six months and submit a health check report to the HDFC Bank IT department.
   - The Supplier is responsible for all unpacking, assembling, wiring, installations, cabling between hardware/Peripheral units and connecting to power supplies.
   - The bidder will test all operations and accomplish all adjustments necessary for successful and continuous operation of the mentioned SD WAN Appliance at all installation sites.
   - In case there is a malfunction or failure of the device, bidder should responsible to replace the SD WAN Appliance without any additional cost to the bank.
   - Bidder should deploy total solution at primary and DR Data centers and across all the branches on island wide. The project should be completed within the agreed project time line between vendor and HDFC Bank, if any delay cause, 3% penalty from total budget will be applicable.

- The bidder should submit a general description of the techniques, approaches and methods to be used in completing the project.
- The Bidder will assume total responsibility for the fault free operation of hardware and maintenance during the warranty for a total duration of six years.
- The SD WAN Appliance which is removed for repairs from Head Office/DR Data Center or branch office require being returned to the respective locations and are prohibited from being given as replacements for another SD WAN Appliance. The SD WAN Appliance which is taken to repair should be handed over to the relevant location with all accessories/original configurations. IT department of the Bank will be strictly monitoring this.
- On lodgment of complaint, service should be provided and rectification of reported problem immediately. In case any part is found defective & needs to be taken to the Vendor's Premises/lab for repairs, the Vendor should either ensure the required part is replaced or standby equipment is provided in place of defective equipment immediately by evaluating the time chart given below.

Figure A (Descriptions of Technical methods)

Proposed Technical method	Objective to be achieved

FINANCIAL PROPOSAL FORMAT

#	ITEM DESCRIPTION	QTY	UNIT PRICE (LKR)	TOTAL (LKR)	NBT 1%	VAT 15%	TOTAL PRICE
Hardware Appliance Cost							
1							
2							
3							
Software License cost							
1							
2							
3							
Implementation cost							
1							
Training cost							
1							
GRAND TOTAL							

Prices and Duties & Taxes

- The vendor should quote in all-inclusive prices including any charges for installation support & onsite warranty etc.
- Rate and amount of all the applicable duties and taxes should be clearly stipulated.

Cost of Maintenance / Service-level Agreement for on-site support

Please indicate the AMC (annual maintains cost including any applicable license costs) for the SD WAN solution in the table below for the next 6 years. the AMC should cover all the applicable cost including warranty on all Hardware, Software and all accessories, Local Support and subscription license.

YEAR	Percentage (%)	Warranty Status /AMC COST (LKR) EXCLUDING TAXES
1st YEAR		
2nd YEAR		
3rd YEAR		
4th YEAR		
5th YEAR		
6th YEAR		

7. **Award of Contract**

- The contract shall be awarded to the vendor after considering the proposal provided. The decision of the bank evaluation is final. Selected vendor will be informed within a week for Proof of Concept. Canvassing of any sort will lead to disqualification of the bid.

- At any time during term of the purchase order / performance of the Contract, technological advances be introduced by the OEM/ Supplier for information technologies originally offered by the supplier in its bid and still to be delivered, the supplier shall be obliged to offer to HDFC Bank the latest version of the available technologies having equal or better performance or functionality at the same or lesser unit prices. During performance of the Contract, the Supplier shall offer to HDFC Bank all new versions, releases and updates of standard software, as well as related technical support within 30 days of their availability from the OEM.

- Price shall remain fixed for additional units required by the bank (on request) for a period of 12 months from the date of confirmation of Order / issuance of formal Purchase order.

8. **Warranty**

- The offer for the SD WAN solution should include a minimum comprehensive onsite warranty of three years with license from the date of installation and acceptance of the system by the Bank. Bidder is expected to provide AMC for the 4th, 5th and 6th Year after the expiry of warranty period.

- Bidder shall also undertake to carry out implementation / operationalization including move, add, and delete changes / customization of such software updates, releases, Version upgrades. Bidder should update and maintain all supplied equipment to correctly reflect actual state of the setup and should maintain the latest stable version of the software/ Operating system at any point in time during the warranty period and AMC.

- Bidders should cover all parts and accessories of SD WAN solution and related Hardware Appliance and Software during the warranty and AMC period.

- In case of a device malfunctioning during the warranty period and AMC period, bidder should provide a one to one replacement **instead of an on-loan unit**.

9. **Compliance on Service Levels**
   The following response and resolution times will be strictly adhered to; for responding and resolving hardware failures during the contract period.

Description	Primary and DR Datacenter	With Greater Colombo (30Km radius)	Outstation branch Location
Technical Support Requirements			
Remote Technical Support	24x7xSBD	24x7xSBD	24x7xSBD
On-Site Technical Support	24x7xSBD	24x7xSBD	24x7xSBD
Telephone / Remote Technical Support	24x7xNBD	24x7xNBD	24x7xNBD
Response Time			
Urgent (Has an impact on all services or total device malfunction/failure)	Immediate	Immediate	Immediate
Serious (Has an impact on all services but not total device malfunction/failure)	01 HRS	01 HRS	01 HRS
Non-Critical (Services are not significantly impaired)	HDFC Bank Convenience	HDFC Bank Convenience	HDFC Bank Convenience
Resolution Time			
Urgent (Has an impact on all services or total device malfunction/failure)	Immediate	01 HRS	02 HRS
Serious (Has an impact on all services but not total device malfunction/failure)	02 HRS	02 HRS	03 HRS
Non-Critical (Services are not significantly impaired)	HDFC Bank Convenience	HDFC Bank Convenience	HDFC Bank Convenience
TAC Support	Available	Available	Available
Support History Status	Available	Available	Available
Replacement of Hardware / devices as per support agreements	Available	Available	Available

The above response and **resolution times are strictly monitored by the HDFC bank IT department** and the support levels will be considered when evaluating vendors for the next year's maintenance contracts.

10. **Indemnity**
    Vendor shall indemnify, protect and save against all claims, losses, costs, damages, expenses, action suits and other proceeding, resulting from infringement of any patent, trademarks, copyrights etc. or such other statutory infringements in respect of all the software supplied by them.

11. Payment terms and conditions.

Confirmation and Issue PO (Purchase Order)	25%
Goods Delivery	15%
Completion of UAT and Testing and Deployed on 20 Branches	35%
Completion of Deployed on all Branches	15%
After one month of completion of the project	10%

12. **Software & Peripherals:**

The vendor should provide all the Software & Peripherals to comply with the technical specification for the solution that including original CD's, Communication Cables and rack mountable kit, other modules, etc for each SD WAN Appliance.

13. Rejection of Proposals

- The Bank reserves the right in its sole discretion to reject any or all proposals in whole or in part, without incurring any cost or liability whatsoever. All proposals will be reviewed for completeness of the submission requirements. If a proposal fails to meet a material requirement of the RFP, or if it is incomplete or contains irregularities, the proposal may be rejected. A deviation is material to the extent that a proposal is not in substantial accord with RFP requirements

- Immaterial deviations may cause a bid to be rejected. The Bank may or may not waive an immaterial deviation or defect in a proposal. The Bank's waiver of an immaterial deviation or defect will in no way modify the RFP or excuse a bidder from full compliance with the RFP requirements.

- Any proposal may be rejected where it is determined to be not competitive, or where the cost is not reasonable.

- Proposals that contain false or misleading statements may be rejected, if in the Bank's opinion the information was intended to mislead the Bank regarding a requirement of the RFP.

**14. Technical Specifications for SD WAN Solution**

Please refer the below table at page 15-21 for functional requirements.

15.1 Present Branch Network Architecture

In the existing branch network setup, all the branches are connected through single WAN connection from a service provider. The present network has following challenges that need to be addressed with the new solution.

- Integrate two WAN links from two different service providers to achieve the link redundancy.
- Utilizing both service provider links to deliver business application traffic from/to Branch and DC's (Data Center) (PR/DR).
- Automatic/Manual smooth transition to DR setup for branch full operation, when PR site is fully inoperative.
- Provide guaranteed bandwidth for different business application traffic streams.
- Real time traffic monitoring, application level traffic utilization visibility, monitoring the Service Provider link condition.
- Automatic link failover during primary link down and deliver business critical application traffic under link congestion condition.
- Allow only the services traffic through rule based approach.
- Encrypt the data traffic streams from Branch to Data centers and vice versa.

The current Branch network high-level setup is as follows.
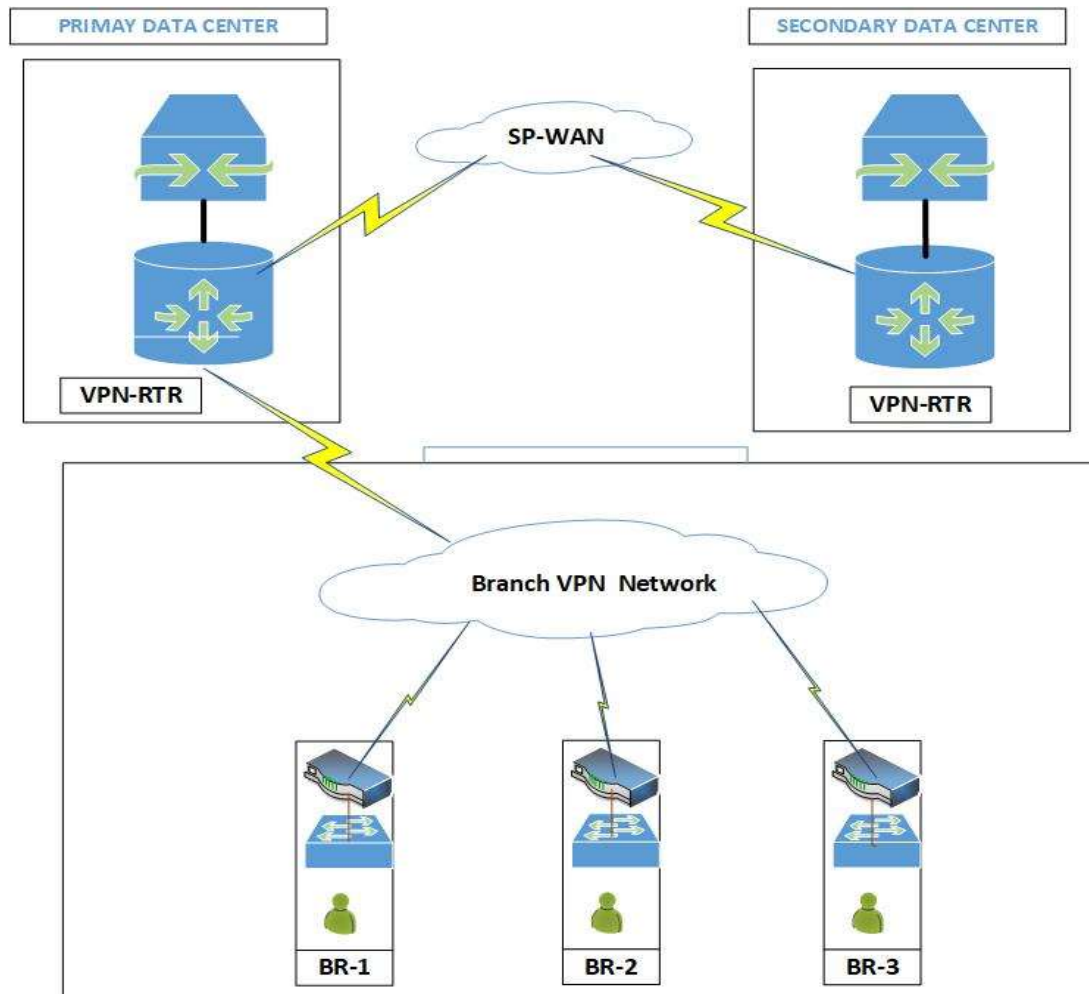
15.2 Expected Solution

The proposed SD WAN solution should have the following features/capabilities conforming to the specifications as given below. The minimum physical Appliance requirement should be as the following.

S. No	Location / Service	Number of Device	Status / Option
1	Primary Site	2	1 Cluster (2 Devices)
2	Disaster Recovery Site	2	1 Cluster (2 Devices)
3	Branches	39	Single device
4	Central Management	All the SD-WAN devices & Link status	Dashboard view

The bidder should clearly mention the product information in following format.

Product name	Model Number	Country of origin	EOL / EOS

No	Description	C	NC	REF
1.0	**SD WAN Functional Specifications**			
1.	The Proposed SD-WAN should be capable of HA: Active/Passive and should be capable of auto & manual failover in case active device fails and fail to wire capability.			
2.	The Proposed SD-WAN OEM must be in Leaders/Challengers Gartner's Magic Quadrant.			
3.	The solution should support Hybrid deployment where Non SDWAN sites and SDWAN enabled sites would interoperate in the SDWAN topology.			
4.	All the proposed devices should be appliance based. The minimum requirement is as follows.			
	● Primary Site Datacenter (Required 2 Physical devices with HA)			
	● Disaster Recovery Site Datacenter (Required 2 Physical devices with HA)			
	● One device per existing 39 Branches and scalable up to 50 Branches.			
5.	PR-DC & DR-DC SDWAN Hardware Appliances Specifications ● Proposed solution should be in the form of Hardware Appliance and must be Rack Mountable with Dual Power Supply. ● Proposed solution must be on-premise, management of devices also should be on-premise. DC SD-WAN Appliances Should handle total encrypted throughput of 600mbps and upgradable up to 1Gbps. ● The solution must support high availability option for branch appliances. ● The proposed solution (DC&DR appliances) should manage and support minimum of 50 Branches. ● The Proposed SD-WAN appliance should have minimum 05 1000 Base TX Ethernet ports (Minimum Fail to wire ports 03) & minimum 02 1G SFP ports with one fail to wire. ● The proposed solution must provide technical data sheets for each model of appliance proposed. ● Vendor should clearly indicate the resources required (vCPU ,Memory, Storage, Networking Requirements) to implement the SDWAN Management Solution. ● The proposed product equipment (PR & DR) should be support IPS/IDS. ● Proposed Solution should have strong information security certification from independent evaluation bodies such as NSS Labs. Branch SDWAN Hardware Appliance Specifications ● Proposed solution should be in the form of Hardware Appliance and must be Rack Mountable. ● The Proposed Branch SD-WAN Appliance should support minimum encrypted throughput of 20 Mbps and should be scalable up to 40 Mbps on same hardware platform. ● Proposed SD-WAN appliance should have minimum 04 1000 Base TX Ethernet ports (Minimum Fail to wire ports 02) & minimum 02 1G SFP ports with one fail to wire. ● The Proposed Branch SD-WAN appliance should have integrated LTE (CAT 6) modem for 3G/4G connectivity. ● Supplier should provide a comprehensive document covering the architecture, Configuration as a deliverable of the project implementation. ● All Branch SDWAN appliances should support 13 ampere (type G) rectangular pin plug.			
6.	The proposed solution must assign the path on per packet basis.			
	The Proposed solution should be measure the latency, packet loss, jitter and bandwidth congestion of WAN links to determine quality of WAN Links			

	Quality determinations must be made based on the relative quality of each possible link, not on fixed values or thresholds.		
	If DSCP tags are used to assign traffic to an MPLS queue and if the demand exceeds the amount of traffic available on a given queue, then the solution must direct traffic to use multiple queues simultaneously.		
	Should Support 128 Bit AES, 256 Bit AES , IPSec Encryption		
7.	The proposed solution must have ability to reorder any packets that are retransmitted during a failover.		
	If a link carrying application traffic fails, the application traffic must be moved from the failed link to a functioning link in milliseconds without any application timeouts and disconnections.		
	If a link carrying application traffic begins to exhibit loss or latency such that the quality of the application begins to degrade, then the solution must include the ability to shift application traffic off of the degraded link on to a better performing link without any perceptible interruption in application continuity or lost packets.		
	Should support minimum 35 IPSEC-VPN / Virtual Tunnels and upgradable to 65 without changing the Hardware appliance.		
	The proposed solution should adjust the bandwidth rate on the WAN Link dynamically based on a defined bandwidth range (minimum and maximum WAN link rate).		
	Proposed SDWAN solution should support defining Application Aware policies. Any required licenses have to be provided.		
8.	Stateful failover should support with HA (High Available) devices in HO and DR Data centers (should not drop any packet during device failover)		
9.	Interfaces Must support virtual interface (IEEE 802.1Q)		
10.	The solution should support multiple VLAN & SVI (Switched Virtual Interface)		
	● Branch Device: Minimum 10VLAN & SVI		
	● Datacenter: Minimum 35 VLAN & SVI		
11.	The solution should be capable to be deployable as a layer 2 / Layer 3 device.		
12.	Solution should support to utilized both the Service Provider Communication Links (MPLS / Broadband) Simultaneously and share the traffic among the links.		
13.	The solution should be leveraging multiple paths for application traffic.		
14.	To ensure high application performance for bandwidth intensive applications such as multi-media streaming, video conferencing, backups, and large file transfers, the solution should be able to leverage multiple links simultaneously for a single application session by distributing the packets across multiple links.		
15.	The solution should support traffic distribution per packet basis.		
16.	The solution should continuously check the link flaps, if the link is not stable then put the link in monitor state, once the link is stable for particular time then start sending traffic on that link with Qos features / bandwidth shaping.		
17.	During the failure on one link, the critical traffic should automatically migrate to the other Service Provider Link without any manual intervention and without session disconnect. QOS also should maintain during the failure of the WAN link.		
18.	When a data transfer is initiated (packet base path selection), the Appliance should able to select the path based on the link quality:- Congestion, latency, loss and jitter must be taken into consideration.		
19.	Solution should support seamless application accessibility across DC 's & Branches during auto failover of WAN links and load balancing.		
20.	The solution should support Link failover due to packet loss, Latency, Jitter, link flap & Etc. - without TCP / UDP session failover		

21.	If the bandwidth of a single session exceeds that available on any single link, the session must be able to use multiple links simultaneously by distributing the packets across multiple links			
22.	The solution should recover from link failure - alternate link convergence time within milliseconds without session disconnect. (applications should not be interrupted during the traffic fail over from one WAN link to Other)			
23.	The solution should be capable of selecting path per traffic type (i.e. Voice always on SP-1 link and Application X always on SP-2 link)			
24.	The solution should provide end to end Encryption using industry standard protocol (Minimum AES -256 or higher) Form Branch to/from Primary site and DR site Data centers			
25.	Should support QOS over the encrypted channel.			
26.	Should be able to define the traffic priority level (critical level) base on different criteria such as application, Destination TCP/UDP port Number, Destination IP address and Source IP address.			
27.	Should be able to define Guaranteed Bandwidth base on different criteria such as application, Destination TCP/UDP port Number, Destination IP address and Source IP address			
28.	The solution must be able to allocate a maximum bandwidth usage cap to each class of traffic. The solution must allow usage to burst above the maximum bandwidth usage cap if no other traffic classes attempt to utilize the available bandwidth.			
29.	Based on network analysis of the current setup the solution must select path based on link Quality, Policy & link Capacity.			
30.	The solution Should be capable of sending duplicate data over both links for guaranteed delivery of all applications like data, video, etc., and it has to be configurable feature need to be enabled if required.			
31.	The solution should be able to send packets on a same path (persistency) based on the need (User configurable).			
32.	Real-time traffic duplication across multiple links to mitigate against latency and packet drops only when feature is enabled.			
33.	It must support IPv4 and shall have the capability to support IPv6 Protocols.			
34.	Appliance should capable to Monitor the remote IP address and change the traffic path according to availability of the remote IP address			
35.	The solution must require configuration of the WAN bandwidth as part of the basic configuration process. The available WAN bandwidth can change due to network routing changes and other network events, and the solution must dynamically adjust its consumption of WAN bandwidth in response to packet loss.			
36.	The Solution must support Bandwidth testing on WAN links to check the available bandwidth.			
37.	The proposed solution must have DPI (deep packet inspection) engine to identify applications and apply rules to control how application traffic is handled.			
38.	The solution should Support L3 protocol functionality.			
39.	The solution should support routing protocols			
40.	The solution should support PBR.			
41.	Should support the VRRP (Virtual Router Redundancy Protocol) for high Availability			
42.	Solution should have ability to inject under-layer routing to / from over-layer routing with controllability for each direction.			
43.	The Primary site and DR site Datacenter appliances should support BGP and OSPF for routing exchange with the Datacenter Core Switch.			
44.	The solution should support static multicast feature through IGMP/MLD proxying			
45.	The solution should support automatic creation of summary routes per site.			
46.	The solution should support scale of 64K route table per appliance or per site.			

47.	The solution must support static Network Address Translation (NAT) and Dynamic NAT		
48.	The solution must support Dynamic NAT with port forwarding.		
49.	The solution must support stateful Firewalling.		
50.	The solution must support custom Firewall policy per each routing domain.		
51.	The solution must support application classification using Deep Packet Inspection technology.		
52.	The solution must support Applying Global Policy Templates		
53.	The solution should be configurable, so as to easily disable all WAN virtualization and should not have any service impact.		
54.	The solution should provide role-based access control or multiple user roles that facilitate separation of duties.		
55.	The solution should support user / password management capabilities.		
56.	Proposed hardware should be able to interoperate with the existing products of different vendors. (eg: - cisco, juniper, checkpoint, D-link, Fortinet, etc.)		
57.	The solution must not require additional software plug-ins or agents on client or server hosts.		
58.	The solution must support an authentication capability to authenticate a remote peer WAN Virtualization device before performing traffic Virtualization		
59.	Traffic types must support All IP-based traffic, such as CIFS, MAPI, HTTP, NFS, SMTP, SNMP, SSL, Oracle, TCP, UDP, and VoIP etc..		
60.	Solution must support TCP packet order correction.		
61.	The solution must provide the ability to manage its files through the GUI, including upload, download and deletion.		
62.	The solution must provide the ability to backup and restore the solution configuration and traffic data centrally.		
63.	The solution must provide the ability to configure Manual /automatic backups, download/upload backup files, view backups that have been created.		
64.	The solution must provide summary reporting of user defined Top IP Sources and Destinations with external monitoring server.		
65.	The solution shall be able to perform time synchronization (NTP, etc)		
66.	Eligibility for New version upgrade need to be done as and when required without any additional cost.		
67.	The solution must support partial software upgrade feature which allows the network administrator to selectively upgrade the software on sites in the network without needing to upgrade all sites simultaneously		
68.	Based on user need, the solution should be able to archive/save all the old network configurations, so that it can be used to revert the network configuration when needed		
69.	The configured end device DSCP tagging (If any) should be preserved by the solution without tampering for Quality of Service.		
70.	The solution should have the capability to detect the path MTU		
71.	The solution must support DHCP Server /DHCP Relay /DHCP Client		
72.	The solution should have the ability to „pass through" certain applications/traffic without applying any Quality of service parameters which is of no interest to the administrator		
73.	The solution should be able to send packets on a same path (persistent) based on user need.		
74.	The solution should support VRF that allow for building multiple virtual networks that separate traffic, can carry overlapping IP address ranges, allow the application of distinct security and QoS policies for a subset of data such as guest Wi-Fi provide overall application security.		
75.	The proposed solution should be leader position in Gartner Report or should have NSS lab testing report.		

No.	Requirement			
76.	Appliance should intelligent to neutralize any vulnerability issues (ARP spoofing, MAC, DNS, DHCP, Ping, Routing, TCP attacks, VLAN hopping)			
Monitoring, Visibility & Management				
77.	The solution should Real time monitor WAN Link Condition over the period of time and but not limited to ● Packet Loss over the customized time period and real time ● Jitter over the customized time period and real time ● Link Errors over the customized time period and real time ● Bandwidth Utilization over the customized time period and real time ● Application utilization from bandwidth over the customized time period and real time			
78.	Should be able to create customized single console dashboard for the monitoring all links, all appliances			
79.	The solution must support centralized monitoring of deployed appliances, including health reporting and archival of log messages.			
80.	The solution must be capable of exporting traffic statistics to NetFlow / SIEM collector			
81.	The solution must include a comprehensive logging capability, integrate to HDFC Bank AD & customize user roll base facility.			
82.	Logs must be retained in each individual device for a period of at least one Month, with inbuilt capability or with external database where storing for longer duration is possible, depending on size of the data.			
83.	Solution should have web GUI console to manage the devices without limiting any functionality			
84.	The solution should support TLS 1.2 or higher for management web GUI SSL access for better security.			
85.	The solution must support SSH for access to the management Command Line Interface.			
86.	The solution must provide administrator authentication via TACAS/RADIUS/LDAP			
87.	The solution should support role-based administration that can be linked to groups of WAN Virtualization appliances. Depending on their assigned roles, administrators may have read-only or read-write.			
88.	The solution shall support monitoring using SNMP version 2/3			
89.	The solution must support alerting notifications through SNMP traps, SMTP email, and remote syslog.			
90.	The solution should support to update the Patch, OS on the branch devices using central management console			
91.	The solution must support configuration rollback feature to detect and recover from software and configuration errors by reverting to previously active software or configuration.			
92.	All the function and features should be able to configure locally/remotely on device in each branch devices and Primary and DR devices. (any functionality should not be restricted with local device configuration)			
Reporting and Alerting				
93.	Solution should support real time alerting with status and value of following items and but not limited to ● during the failure of the Service Provider links ● Ethernet interfaces failure / disconnection ● The event of exceeds threshold value of WAN Link Condition (Packet Loss, Jitter, Errors and etc) ● High Memory and CPU Usage ● Routing failures			

	• Status of the Encrypted Tunnel			
	• Configuration changers on Branch or Data center appliance.			
94.	Should support to generate the following customized reports for daily, weekly, monthly, yearly etc and but not limited to • Per branch individual WAN Link Utilization over period of time • Per branch individual WAN Link Condition / Quality (Packet loss, Jitter, Latency) over period of time • Per branch virtual Link Condition / Quality (Packet loss, Jitter , Latency) over period of time. • Per branch Memory and CPU Usage (health monitoring) • User activity (user login, user creation /deletion)			
95.	Should support Real-time performance statistics, graphical reports, and export. Report by application, link, or QoS class. SNMP support			
96.	All reports must be exportable to CSV format / PDF format			
97.	The solution should support one way (individually uplink and downlink) Jitter monitoring (Eg: Branch to PR-DC & PR-DC to Branch)			
98.	The solution should support one way (individually uplink and downlink) Latency monitoring (Eg: Branch to PR-DC & PR-DC to Branch)			
99.	the solution should support one way (individually uplink and downlink) traffic loss monitoring (Eg: Branch to PR-DC & PR-DC to Branch)			
Purchase and Service level agreement				
100.	The bidder should clearly indicate the compliance to the "Purchase and Service Level Agreement" clause and responses should be provided as part of the proposal submitted			
101.	Price shall remain fixed for additional units required by the bank (on request) for a period of 12 months from the date of confirmation of Order / issuance of formal Purchase order.			
102.	Bidder should agree to the service Level agreement, which described under section 9 on RFP Document.			
103.	Bidder should agree to payment terms and condition, which described under section 11 on RFP Document.			
Support, Warranty & OEM Criteria				
104.	The bidder should responsible for implement SD-WAN solution across all the HDFC Bank Branches on island wide and Primary and DR site without any impact for the business operations.			
105.	A comprehensive 3 year warranty and 24 x 7 x 365 support on all Hardware/Software and all accessories, security signature updates and licensing with Next Business Day Hardware replacement commitment.			
106.	Bidder is expected to provide AMC for the 4th, 5th and 6th year after the expiry of warranty period.			
107.	During AMC period, the vendor shall provide and install all new versions, releases, and updates for all standard software at no additional cost to HDFC BANK.			
108.	Bidder shall also undertake to carry out implementation / operationalization including move, add, and delete changes / customization of such software updates, releases, Version upgrades. Also should update and maintain all supplied equipment to correctly reflect actual state of the setup and should maintain the latest stable version of the software/ Operating system at any point in time during the warranty period and AMC.			
109.	Bidder should maintain minimum 04 (Data Center level 01 & Branch level 03) Number of additional Hardware Appliances to replace in the case of failure on behalf of the HDFC Bank.			
110.	Bidder should agree to "Installation & Configuration Requirement and hardware maintenance" which describe under section 6 on RFP Document.			

License				
111.	The Bidder shall supply HDFC BANK with required licenses in the name of HDFC BANK to access and use the Software supplied through this RFP. Such licenses to access and use the software shall be non-exclusive, fully paid up, irrecoverable, and valid throughout HDFC BANK offices.			
112.	Bidder must mention all feasible additional features can be activated on proposed appliance by purchasing additional license / subscription and must propose as optional.			
113.	All license in the solution should be perpetual (should not be subscription model)			
End-of-Life and End-of-Sale conditions				
114.	The equipment quoted by bidder should not be declared as End of Life (EOL) or End of Sale (EOS) by the OEM, for a period of 6 years from the last date of RFP.			
115	The bidder should provide the details of the EOL or EOS timelines for the proposed items.			
Training				
116	The Bidder shall provide and/or organize product / solution specific Overseas training (including courseware and hands-on) for 3 staff members, from a certified trainer (OEM trainer) on the proposed solution recommended by the principle vendor.			

The following Check List is provided to assist the Bidders to organize and consistently present their Technical Proposal. The Bidder should critically assess their ability to meet each requirement in the list and respond according to the instructions given below by inserting a **√** mark under the appropriate column. However, if the above response is not sufficient to confirm technical responsiveness to the Technical Requirements, then the Bidder **MUST** describe their Technical Capability to support the requirement in the space provided under each section. In addition, the Bidder **MUST** provide cross references to the relevant supporting information, if any, included in the proposal. The cross references should identify the relevant document(s), page number(s), and paragraph(s). The Technical Responsiveness Check List does not supersede the rest of the Technical Requirements (or any other part of the proposal documents). If a requirement is not mentioned in the Check List, that will not relieve the Bidder from the responsibility of including supporting evidence of compliance with the other requirements in its Technical Proposal.

Acronyms:

▪ **Comply (C) -** *The requirement is met by the offered approach/product exactly as stated*.

▪ **Non-Compliance (NC) -** *The requirement is not compliant.*

▪ **Reference (REF) -** *Cross references to the relevant supporting information and comments*.