

Supply, Installation and Maintenance of hardware and related software licenses for fulfilling Early Warning System (EWS), Biometric Authentication application, UPI and Indpay hardware and software requirements (Ref: CO/ITD/1084/R1:2018-19 dated 24/12/2018)

### Clarifications

Sl No	RFP Point No./Title	Page No in RFP	Details Provided in RFP	Query / Changes Requested	Response to Query / Remarks from Bank
1.	Section III- Conditions of Contract/ 7) Delivery Schedule	14	The equipment should be delivered within four (4) weeks from the date of issue of purchase order and installed within six (6) weeks from the date of delivery. On delivery the Program Manager / Account Manager of successful bidder is expected to contact the respective in-charge, plan the installation in coordination with Indian Bank team and should complete the installation within the schedule. Total time for Delivery and Installation should not exceed ten (10) Weeks from the date of Purchase Order.	Kindly change the equipment's delivery from 4 weeks to 6 weeks from the Date of PO	Please adhere to the tender terms and conditions.  However, it has been mentioned that Total time for Delivery and Installation should not exceed ten (10) Weeks from the date of Purchase Order.
2.				Please note the standard delivery period for vendor is 04 to 06 Weeks.	
3.				Kindly request you to amend this delivery as 8 week for delivery from the date of PO. For installation 8 week	
4.	Section III- Conditions of Contract/ 13) Payment	16	<p>I. <b>On Delivery:</b> Eighty (80)% of the price of the Systems delivered will be paid within 15 days of submission of Invoice copy and Proof of delivery duly counter signed by the Bank's Representative, Original/Copy of Transit Insurance Policy and Original of Storage cum erection policy.</p> <p>II. <b>On Installation:</b> Fifteen (15) % of the price of the Systems delivered and installed will be paid within 15 days on submission of Installation Certificate duly counter-signed by the Bank's</p>	As Bidder is already giving 10% PBG as a security for 39 months. Request you to drop 5% retention & change the payment terms as 80% against delivery and 20% on installation	<p>Please adhere to the tender terms and conditions.</p> <p>Please refer to point no. 1 of Amendment Corrigendum for Performance Security.</p>



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			Representative.  III. <b>Remaining five (5) %</b> of the payment will be held by the bank to recover penalty if any, during the warranty period and the balance amount will be released after warranty period. If penalty exceed 5% quantum then supplier has to make good any excess  TDS will be deducted for the payment, if applicable.		
5.	Section IV – Technical Specification / 2) Web Server	24	Network: 2 nos. of 10 Gbps dual port Ethernet card with Trans-receiver and 25m FCoE cables	Whether its Sfp+ SR transceivers; FCOE Means LC-LC cables	Yes, FCoE means LC-LC fibre cables. Further, the Trans-receiver means SFP + trans-receiver required for 10Gpbs Ethernet.
6.	Section IV – Technical Specification / 2) Blade Chassis	25	<b>Form factor:</b> Blade Chassis to house at least 14 half height compute nodes.	Please change to accommodate 12 or more blades	Please adhere to the tender terms and conditions.
7.	Section IV – Technical Specification / 2) Blade Chassis	25	Chassis Connectivity	Please change to Unified fabric since this will help reduce the network/ san switch cabling, and it is being widely adopted. Having separate switches for Network & SAN Switch that too in a Blade Chassis is getting outdated.	Please adhere to the tender terms and conditions.
8.	Section IV – Technical Specification / 2) Blade Chassis	26	<b>Cooling:</b> Should have minimum ten fan modules	Request to change it to minimum 9 fans. As some chassis will be coming with 9 Fans.	Please refer to point no. 2 of Amendment Corrigendum
9.	Section IV – Technical Specification / 2) Blade Chassis	26	<b>Compatibility with Existing Chassis Available with Bank:</b> The chassis quoted should be compatible with Lenovo Pureflex Chassis, for ease of	Quoted Chassis is not compatible with existing Pure flex	Please refer to point no. 3 of Amendment Corrigendum



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10.			management and monitoring.	Different OEM has different chassis models, which get aggregated at the NW layer or SAN Switch layer, However Management/ Monitoring will be by the offered OEM	
11.	Section IV – Technical Specification / 3) Compute Nodes	27	<b>Memory Configuration:</b> The System has to be supplied with at least 768 GB RDIMM (operating @2400 MHz or higher) using 32 GB DDR4 Modules	We shall provide 512GB in RDIMMS or 768 GB in LRDIMMS.	Please refer to point no. 4 of Amendment Corrigendum
12.	Section IV – Technical Specification / 3) Compute Nodes	27	Ethernet Adapter & Fiber Channel HBA Connectivity	Please change this to 2x20Gb Converged network adapter capable of taking both Ethernet and FC	Please adhere to the tender terms and conditions
13.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Controller Cache Requirements:</b> The system should be configured with 256 GB cache across the two controllers (128 GB per controller) with an ability to protect data on cache. Cache should be mirrored and battery backed. Cache battery backup should be at least 48 hours. Cache should be scalable to 512GB across controllers under cluster in future.	Request the bank to consider Cache Scalability to 512GB within the controller pair and not across the cluster. This would ensure that the existing disks installed get benefitted with the added cache. The Cache can be scaled within the same controller pair by doing a data in place upgrade.	Please adhere to the tender terms and conditions
14.				Please include 'the systems should be configured with 256 GB cache...to include both read and write'	Please adhere to the tender terms and conditions
15.				Please include 'Scalability of Cache shall be through SSDs also'	Please adhere to the tender terms and conditions
16.				For investment protection to the bank, request that the cache scalability be mentioned as "scalable to 1TB without requiring to add additional controllers". Also please clarify that here cache is in the form of memory DIMMs in the control enclosures. SSDs being used as cache is not acceptable.	Please adhere to the tender terms and conditions

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17.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Raid Level Support:</b> The storage system should support raid levels 0,1,5,6,10	Requesting M/s. Indian bank to amend the clause as: The storage system should support raid levels 0,1,5,6,10 or Equivalent	Please refer to point no. 5 of Amendment Corrigendum
18.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Host interface Support:</b> The Storage System Shall have support for 16 Gbps FC & 1Gbps iSCSI Host Connectivity Protocols. The Storage System shall be configured with minimum 2 no. of 4x16 Gbps FC Ports	Today the latest interconnect in the storage technology marketplace is NVMeOF. We request bank to include support for NVMeOF also so that bank does not lose out on this critical capability in future. We request modification to "The Storage System Shall have support for 16 Gbps FC & 1/10Gbps iSCSI Host Connectivity Protocols. The proposed storage system should be end to end NVMe capable and should support NVMe capable SSDs/ flash drives. Support for NVMe should not require controller change or hardware upgrade in future"	Please adhere to the tender terms and conditions.
19.				The storage system shall support for 16Gbps FC & 1Gbps iSCSI Host connectivity protocols. The Storage system shall be configured with minimum 2 nos of 4 x 16Gbps FC Ports and 2 Nos of 4 x 10Gbps iSCSI Ports for replication and host connectivity	Please adhere to the tender terms and conditions.
20.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Drive Technology Support:</b> The storage system should have support for SSD & HDD , 2.5'/3.5' SAS, 2.5'/3.5' NL-SAS Drives Disk drives should be available in following configurations. 1TB/2TB/3TB/4TB NL_SAS 7200 RPM,	Since today NVMe capable flash drives are available in the market and this is the latest technology, request the bank to ensure that the proposed model should support NVMe SSDs and flash modules.	Please refer to point no. 6 of Amendment Corrigendum





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21.			300GB,600GB 15K RPM SAS Drives, 600GB, 900GB, 1.2TB 10K RPM SAS Drives, 200GB, 400GB, 800GB SSD, The storage system shall support a mix & match of different drive types within the same enclosure.	Requesting M/s. Indian bank to amend the clause as: The storage system should have support for SSD & HDD, 2.5'/3.5' SAS, 2.5'/3.5' NL-SAS Drives Disk drives should be available in following configurations. 2TB/ 4TB NL_SAS 7200 RPM, SAS Drives, 600GB, 900GB, 1.2TB, 1.8TB 10K RPM SAS Drives, 800GB, 960GB, 3.8TB SSD, The storage system shall support a mix & match of different drive types within the same storage.	
22.				Some of the drives are Dated and no longer available like the 300GB 10K/15K disks and 200GB SSD's. Request bank to mention support for SSD, 10K/15K and 7.2K RPM Disks within the same system with automated storage tiering across all the drives.	
23.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Storage Capacity</b> The storage system should be capable to scale up to 500 drives when using SAS physical storage capacity should scale up to atleast 1000 TB ( using NL SAS)	Requesting M/s. Indian bank to amend the clause as: The storage system should be capable to scale up to 450 or more drives when using SAS physical storage capacity should scale up to atleast 1000 TB ( using NL SAS)	Please refer to point no. 7 of Amendment Corrigendum
24.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Storage Capacity:</b> System should be linearly scalable on performance up to 500 drives. Storage system quoted should be configured with all the required performance related licenses to achieve the maximum performance configuration.	Requesting M/s. Indian bank to amend the clause as: system should be linearly scalable on performance up to 450 or more drives. Storage system quoted should be configured with all the required performance related licenses to achieve the maximum performance configuration.	Please refer to point no. 8 of Amendment Corrigendum

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25.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Storage Capacity:</b> Storage system should be configured with hybrid pool of 1.8 TB 10K SAS HDD Disks and 1.92 TB SSD and provide automated storage tiering with usable capacity of 60TB (at least 25% of usable capacity should be configured on SSD)	Requesting M/s. Indian bank to amend the clause as: Storage system should be configured with hybrid pool of 1.8 TB 10K SAS HDD Disks and 1.92 TB/960 GB SSD/3.84 TB SSD and provide automated storage tiering or promoting hot data to higher performance disk with usable capacity of 60TB (at least 25% of usable capacity should be configured on SSD)	Please refer to point no. 9 of Amendment Corrigendum
26.				Request modification to include NVMe capable SSDs - "Storage System should be configured with hybrid pool of 1.8TB 10K SAS HDD Disks and 1.92TB NVMe SSD and provide automated storage tiering with usable capacity of 60TB (at least 25% of usable capacity should be configured on NVMe SSD).	Please adhere to the tender terms and conditions.
27.	Section IV – Technical Specification / 5) SAN Storage	32	<b>Storage Built In Functionality:</b> The storage system shall have the capability to support storage tiering to automatically manage Hot spots in the system. The feature should automatically detect and non-disruptively move individual volumes and sub-volumes between solid state and spinning Drives (HDDs) to optimize price/ performance ratio between the SSDs & HDDs.	Requesting M/s. Indian bank to amend the clause as: The storage system shall have the capability to support storage tiering to automatically manage Hot spots in the system. The feature should automatically detect and non-disruptively move individual volumes and sub-volumes between solid state and spinning Drives (HDDs) to optimize price/performance ratio between the SSDs & HDDs or the storage should support workload optimization by dynamically moving hot data to high performance disks like SSD and cold data to low performance disks like 10K/15K RPM disks.	Please refer to point no. 10 of Amendment Corrigendum
28.	Section IV – Technical Specification / 5) SAN	32	<b>Additional Advanced Software</b>	The software license for the entire storage array to be provided on day one for the	Please adhere to the tender terms and conditions.



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	Storage		<b>Features Supported:</b> Appropriate software licenses for usable capacity for (Production volume/Non Production Volume, Flash Copy ) need to be provided	entire array scalability offered by the vendor. If the vendor supports clustering, the licenses for the entire clustered storage array to be provided.	
29.	Section IV – Technical Specification / 6) 24 Port activation in SAN 48B-5 Switches	33	Bidder shall supply license and 16 Gbps SFPs for the activation of remaining 24-ports for each of the two 48-Port SAN switches	This clause is restrictive for other bidders, since a SAN Switch from one OEM Cannot be upgraded by another OEM. Request the bank to consider a new SAN Switch in lieu of upgrading the existing switch. This would ensure that the SAN Switches and the Storage are in common maintenance. The proposed SAN Switch can be connected to the existing SAN Switch using Inter Switch Link and can offer the connectivity and functionality.	Please refer to point no. 11 of Amendment Corrigendum
30.				Need support from the original supplier OEM due to the part number & upgrade are linked to the first purchase	
31.	Section IV – Technical Specification / 7) Tape Library	33	Offered Tape Library shall provide 16Gbps FC connectivity to SAN switches.	LTO8 tape library interface is 8Gbps. Hence request change to "Offered Tape Library shall provide 8/16 Gbps FC connectivity to SAN switches."	Please refer to point no. 12 of Amendment Corrigendum
32.	Section IV – Technical Specification / 8) Server Rack	34	Standard 42U fully perforated front & back door and side panels, holes should be evenly distributed from top to bottom to permit adequate airflow (equivalent to 64 percent open areas for ventilation), preferably black Color.	Kindly Specify Width & Depth for more clarity	Please refer to point no. 13 of Amendment Corrigendum
33.	Section IV – Technical Specification / 8) Server Rack	34	The bidder should provide 2 (two) nos. Power Distribution Units (PDU) - PDU should have a 32A MCB, a neon Indicator, 16 x IEC C13 Sockets (5 A /	Please clarify if C13 sockets (10A) is required or India pin (5A/15A) is required	Please refer to point no. 14 of Amendment Corrigendum

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			15 A) and at least 3.0 meter cable for connection to the external power source.		
34.	Section IV – Technical Specification /8) Server Rack	34	The bidder should terminate the Jack Panel and its necessary components using Cable Manager	Cable manager will be provided.	Please adhere to the tender terms and conditions
35.	Section IV – Technical Specification /8) Server Rack	34	Rack should be provided with Blanking plates covering all 42U in combination of 1U and 2U.	Please confirm the quantity.	Please adhere to the tender terms and conditions. Further, at the time of delivery all the 42U of the racks should be covered with 22 no. of 1U and 10 no. of 2U blanking plates respectively.
36.	Section V- Qualification criteria	37	The Bidder should have supplied minimum of 10 rack mountable servers/ blade servers of the make quoted in the bid in single order to Banks/ Financial Institutions/ Government Organizations in India in each of the last three financial years of the bidder.	Bidder should have supplied minimum 10 rack mountable / blade server quoted in single order to bank/financial institutions / government organizations	Please adhere to the tender terms and conditions. Further, Bidder should have supplied minimum of 10 rack mountable servers/ blade servers as part of Single Purchase Order.





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**Amendments**

SI No	RFP Point No/Title	Page No in RFP	Details Provided in RFP	Amended Clause
1.	Section III- Conditions of Contract/ 4)Performance Security	13	a. Within 15 days of issue of Purchase Order, the supplier shall furnish to the Bank the Performance Security equivalent to 10% of the Contract Amount in the form of a Bank Guarantee, valid for 39 months with further one month claim period.	a. Within 15 days of issue of Purchase Order, the supplier shall furnish to the Bank the Performance Security equivalent to 5% of the Contract Amount in the form of a Bank Guarantee, valid for 39 months with further one month claim period
2.	Section IV – Technical Specification / 2) Blade Chassis	26	<b>Cooling:</b> Should have minimum ten fan modules	Cooling: Should have minimum Nine fan modules
3.	Section IV – Technical Specification / 2) Blade Chassis	26	<b>Compatibility with Existing Chassis Available with Bank:</b> The chassis quoted should be compatible with Lenovo Pureflex Chassis, for ease of management and monitoring.	<b>Compatibility with Existing Chassis Available with Bank:</b> The Blade chassis to be supplied should have Chassis Management Software, which can be integrated/ interfaced with Vmware vCenter for ease of monitoring and management.
4.	Section IV – Technical Specification / 3) Compute Nodes	27	<b>Memory Configuration:</b> The System has to be supplied with at least 768 GB RDIMM (operating @2400 MHz or higher) using 32 GB DDR4 Modules	<b>Memory Configuration:</b> The System has to be supplied with at least 768 GB LRDIMM (operating @2400 MHz or higher) using 64 GB DDR4 Modules.
5.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Raid Level Support:</b> The storage system should support raid levels 0,1,5,6,10	<b>Raid Level Support:</b> The storage system should support raid levels 0,1,5,6,10 or equivalent and should provide the data protection and performance in-line with the raid levels 0,1,5,6,10.  Further, in case of equivalent RAID other than RAID 0,1,5,6,10, the bidder has to provide the necessary documentation on the data protection and performance for the supported equivalent RAID configuration.
6.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Drive Technology Support:</b> The storage system should have support for SSD & HDD , 2.5'/3.5' SAS, 2.5'/3.5' NL-SAS Drives Disk drives should be available in following configurations. 1TB/2TB/3TB/4TB NL_SAS 7200 RPM, 300GB,600GB	<b>Drive Technology Support:</b> The Storage System should have support for SSD, 2.5'/3.5' SAS, 2.5'/3.5' NL-SAS Drives. Disk Drives should be available inline with the industry standards. The Storage System shall support a mix & match of different drive types (2.5"

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			15K RPM SAS Drives, 600GB, 900GB, 1.2TB 10K RPM SAS Drives, 200GB, 400GB, 800GB SSD, The storage system shall support a mix & match of different drive types within the same enclosure.	SAS/SSD/NL-SAS drives) within the same enclosure and 2.5" and 3.5" drive types in the same storage. The system must support intermixing of SSD, SAS and NL-SAS drives to meet the capacity and performance requirements of the applications.
7.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Storage Capacity</b> The storage system should be capable to scale up to 500 drives when using SAS physical storage capacity should scale up to atleast 1000 TB ( using NL SAS)	<b>Storage Capacity</b> The storage system should be capable to scale up to atleast 450 drives when using SAS physical storage capacity should scale up to atleast 1000 TB.
8.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Storage Capacity:</b> System should be linearly scalable on performance up to 500 drives. Storage system quoted should be configured with all the required performance related licenses to achieve the maximum performance configuration.	<b>Storage Capacity:</b> System should be linearly scalable on performance up to atleast 450 drives. Storage system quoted should be configured with all the required performance related licenses to achieve the maximum performance configuration.
9.	Section IV – Technical Specification / 5) SAN Storage	31	<b>Storage Capacity:</b> Storage system should be configured with hybrid pool of 1.8 TB 10K SAS HDD Disks and 1.92 TB SSD and provide automated storage tiering with usable capacity of 60TB (at least 25% of uable capacity should be configured on SSD)	<b>Storage Capacity:</b> Storage system should be configured with hybrid pool of 1.8 TB 10K SAS HDD Disks and 960 GB/1.92 TB SSD and provide automated storage tiering with usable capacity of 60TB (at least 25% of usable capacity should be configured on SSD). The usable capacity excludes overheads such as RAID space utilization, Global hot spares, etc.
10.	Section IV – Technical Specification / 5) SAN Storage	32	<b>Storage Built In Functionality:</b> The storage system shall have the capability to support storage tiering to automatically manage Hot spots in the system. The feature should automatically detect and non-disruptively move individual volumes and sub-volumes between solid state and spinning Drives (HDDs) to optimize price/performance ratio between the SSDs & HDDs.	<b>Storage Built In Functionality:</b> The Storage System shall have the capability to support Storage Tiering to automatically manage Hot Spots in the system. The feature should automatically detect and non-disruptively move/promote individual volumes and sub-volumes between Solid State Drives/Cache and Spinning Drives (HDDs) to optimize price/performance ratio between the SSDs & HDDs.



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11.	Section IV – Technical Specification / 6) 24 Port activation in SAN 48B-5 Switches	33	Bidder shall supply license and 16 Gbps SFPs for the activation of remaining 24-ports for each of the two 48-Port SAN switches	<p>“The Bidder shall propose 24 no. of ports with 16Gbps SFP and necessary licenses using either a new FC SAN Switch or upgrade the existing 48Port Switch by adding license and SFP’s for the 24 Ports.</p> <p>In case, the bidder is proposing new pair of SAN switches, then the model quoted should comply with the technical specification of the SAN switches attached as Annexure”</p>
12.	Section IV – Technical Specification / 7) Tape Library	33	Offered Tape Library shall provide 16Gbps FC connectivity to SAN switches.	Offered Tape Library shall provide 8/16Gbps FC connectivity to SAN switches.
13.	Section IV – Technical Specification / 8) Server Rack	34	Standard 42U fully perforated front & back door and side panels, holes should be evenly distributed from top to bottom to permit adequate airflow (equivalent to 64 percent open areas for ventilation), preferably black Color.	Standard 42U 800 mmW/1000 mmD fully perforated front & back door and side panels, holes should be evenly distributed from top to bottom to permit adequate airflow (equivalent to 64 percent open areas for ventilation), preferably black Color.
14.	Section IV – Technical Specification / 8) Server Rack	34	The bidder should provide 2 (two) nos. Power Distribution Units (PDU) - PDU should have a 32A MCB, a neon Indicator, 16 x IEC C13 Sockets (5 A / 15 A) and at least 3.0 meter cable for connection to the external power source.	The bidder should provide 2 (two) nos. Power Distribution Units (PDU) - PDU should have a 32A MCB, a neon Indicator, 16 x IEC C13 Sockets (10A) and at least 3.0 meter cable for connection to the external power source.
15.	Section IV – Technical Specification / 5) SAN Storage	31	Additional Clause	The storage system shall not be a re-branded or re-christened make of another OEM.



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### Annexure-I

S. No	Specifications	Complied (Yes/No)
1	Non-blocking architecture with 48 ports in a single domain concurrently active at 16 Gbit/sec full duplex with no oversubscription. Each SAN Switch to be supplied with 24 Ports activated.	
2	All the ports should provide auto-sensing 4, 8 and 16 Gbit/sec capabilities for backward compatibility using appropriate SFPs	
3	The switch shall support different port types such as , F_Port, M_Port (Mirror Port), EX port and E_Port; self-discovery based on switch type (U_Port); D port ( Diagnostic port)	
4	The switch should be rack mountable and be supplied with proper rack mount kit to mount in a standard 42U rack.	
5	Non-disruptive Microcode/ firmware Upgrades and hot code activation.	
6	The switch shall support minimum Aggregate bandwidth of 384 Gb/sec (48 ports x 16 Gbit/sec (data rate) end to end)	
7	Should support Quality of Service (QoS) to help optimize application performance in consolidated, virtual environments. It should be possible to define high, medium and low priority QOS zones to expedite high priority traffic.	
8	The Switch should be configured with the Zoning and ISL Licenses, should support frame based ISL trunking.	
9	The switch shall be able to support ISL trunk up to 128 Gbit/sec between a pair of switches for optimal bandwidth utilization and load balancing.	
10	Support for web based management and should also support CLI.	
11	The switch shall support advanced zoning (Port/WWN based zoning) and ACL to simplify administration and significantly increase control over data access.	
12	It shall be possible to configure the switches with alerts based on threshold values for temperature, fan status, Power supply status, port status.	
13	Switch shall support POST and online/offline diagnostics, including RAStrace logging, environmental monitoring, non-disruptive daemon restart, FCping and Pathinfo (FC traceroute), port mirroring (SPAN port).	
14	Should provide enterprise-class availability features such as redundant and hotpluggable components.	
15	Should have Back-to-front airflow	
16	Port to Port latency should not be more than 700 ns	
17	The switch should support Inflight Compression and Encryption	
18	The switch shall be supporting SNMP (v2 and v3) management and appropriate MIBs shall be provided.	
19	The switch should support Forward Error Correction and Dynamic Fabric Provisioning	

