

7<sup>th</sup> February 2024

#### Corrigendum -II

For (PR No. 1000037159) RFx No. 6100001614

# New Hardware Procurement for ERP System

|     | Previous Specifications  |      |              |          | Changed Specifications          | ations  |
|-----|--|------|--------------|----------|---------------------------------|---|
|     | IITB DC Hardware BOM   |      |              |          |                                 | IITB DC Hardware BOM  |
| N/S | S/N Item Description   | Unit | Total<br>Qty | S/N      | Item Description                | on  |
| ь   | DC Server:   |      |              | <b>▶</b> | DC Server:                      |   |
|     | 8 Small form factor (SFF) NC Configure-to-order Server                           | 1    |              |          | Merged with HDD                 | DD and removed  |
|     | ICX CTO Mod-x 8SFF   | 1    |              |          | Merged with HDD                 | DD and removed  |
|     | Minimum 2.8GHz 24-core 230W Processor (multi threading supported)                | 2    |              |          | Minimum 2.8GHz with heat sink   | GHz 24-core Processor, multi threading,   |
|     | 32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22<br>Registered Smart Memory Kit | 16   |              |          | 32GB DDR4-3200                  | 200 Registered DIMM   |
|     | 600GB SAS 12G Mission Critical 10K SFF BC 5-years                                | 2    | ω            |          | 600GB SAS 120                   | 600GB SAS 12G 10K SFF HDD with minmium 8 Small form factor slots with required cables |
|     | x8/x16/x8 Primary FIO Riser Kit  | 1    |              |          | PCIe Riser Card wi              | d with Flexible Slot Configuration  |
|     | x16 Lanes 4GB Cache NVMe/SAS 12G RAID Controller                                 | 1    |              |          | 4GB Cache NVMe/                 | VMe/SAS 12G RAID Controller   |
|     | 32GB 2-port Fibre Channel Host Bus Adapter                                       | 1    |              |          | No change                       |   |
|     | Ethernet 10GB 2-port BASE-T Adapter  | ы    |              |          | No change                       |   |
|     | 96W Smart Storage Lithium-ion Battery with 145mm Cable<br>Kit                    | Ъ-7  |              |          | Battery for ba<br>power failure | Battery for backing cache and RAM in the event of power failure                       |



|              | P           | 32GB 8-port SFP28 Fibre Channel with Transceiver  |              | Ь           | 32GB 8-port Short Wave SFP28 Fibre Channel Upgrade License with Transceiver Kit  |     |
|--------------|-------------|---|--------------|-------------|--|-----|
| ١            | 16          | No change   |              | 16          | LC/LC Multi-mode OM4 2 Fiber 5m Cable  |     |
| J            | ₽-7         | No change   | J            | ъ           | 32Gb 24/8 8-port 32GB Short Wave SFP28 Fibre Channel Switch  |     |
|              |             | 3 DC SANSwitches:   |              |             | 3 DC SANSwitches:  | ω   |
| Total<br>Qty | Qty<br>Qty  | S/N Item Description  | Total<br>Qty | Onit<br>Qty | S/N Item Description   | s/r |
|              | Ь           | 5 Years warranty (24x7) for functioning of all the components of the Switch with 4-hours response time                                  |              | ь           | 5 Years 24G Support (24x7)   |     |
|              | ą           | Merged with warranty and removed  |              | 1           | 5 Years Foundation Care Critical Service   |     |
|              | 2           | No change   |              | 2           | 450W Front-to-Back AC Power Supply India English   |     |
| 2            | 2           | No change   | 2            | 2           | 450W Front-to-Back AC Power Supply   |     |
|              | 4           | No change   |              | 4           | Front-to-Back Fan Tray   | Ì   |
|              | 2           | No change   |              | 2           | 40G QSFP+ MPO SR4 Transceiver  |     |
|              | Ь           | No change   |              | Ц           | 24 Port 1/10G 6QSFP+ or 2QSFP28 Switch   |     |
|              |             | 2 DC Switches:  |              |             | 2 DC Switches:   | 2   |
| Total<br>Qty | Unit<br>Qty | S/N Item Description  | Total<br>Qty | Unit<br>Qty | S/N Item Description   | s/ı |
|              | 3.          | Merged with warranty and removed  |              | Ь           | 5 Years Technical Support for Server Hardware with replacement (24x7)  |     |
|              | Ъ           | 5 Years warranty (24x7) for functioning of all the components of the server (includes hardware and software) with 4-hours response time | ()           | Н           | 5 Years Technical Care Critical with Defective Media<br>Retention Service  |     |
|              | j.          | Merged with processor and removed   |              | 2           | High Performance Heat Sink Kit   |     |
|              | Ь           | 2U SFF Rail Kit   |              | Ъ           | 2U SFF Easy Install Rail Kit   |     |
|              | ā           | Removed   |              | Н           | Black Rivets Kit   |     |
|              | ī           | Merged with HDD and removed   |              | ъ           | 8SFF SAS/SATA Tri-Mode Cable Kit   |     |
|              | ר           | Lights-out management for remote server monitoring and control  |              | Н           | ILO (or equivalent Platform Management Architecture) Advanced 1-server License with 5 Years Support on Licensed Features |     |
|              | 2           | Hot-Swappable Power Supply Unit   |              | 2           | Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit   |     |
|              | Ь           | Cooling fans inside cabinet   |              | ר           | Maximum Performance Fan Kit  |     |
|              | 1           | Ethernet 1GB 4-port BASE-T Adapter  |              | Ы           | Ethernet 1Gb 4-port BASE-T OCP3 Adapter  |     |



|              | ΞX          | Merged to base configuration and removed   |              | Ь           | Block Storage Service  |
|--------------|-------------|--|--------------|-------------|--|
|              | ×           | Merged to base configuration and removed   |              | Д           | Block Storage 2N Startup Service   |
|              | ж           | Merged to base configuration and removed   |              | 1           | Block Storage OS Startup Service   |
|              | (9          | Included in Installation Charges and removed   |              | 1           | Technical Installation Startup Service   |
|              | ю           | Included in 5 year technical care service  |              | ב           | E-LTU (Electronic License to use)  |
|              | Ь           | Support for FIPS Data Encryption with appropriate license  |              | 1           | FIPS Data Encryption E-LTU (Electronic License to use)   |
|              | (1          | Included in 5 year technical care service  |              | 92          | Block Storage OS 8-core Tier-4, 5-Years Software and Support SaaS  |
|              | ж           | Removed  |              | ъ           | Raider CDM Bluetooth Connectivity Kit  |
|              | 20          | Merged with power supply and removed   |              | ь           | 250V 10Amp Gray 1.4m WW Power Cord   |
|              | 10          | Merged with power supply and removed   |              | 2           | IN1293 250V 16Amp IN Power Cord  |
|              | ¥           | Merged with power supply and removed   |              | 1           | 250V 10Amp Black 1.4m WW Power Cord  |
| ₽            | Н           | Minimum 57 TB usable storage on RAID6, expandable atleast up to 100 TB (NVMe SFF Encrypted SSD, minimum 100K IOPS with 16k block size 70:30 R:W) | ы            | 12          | 7.68TB NVMe SFF Encrypted SSD<br>(Minimum 57TiB Usable Capacity on RAID6, minimum 100K<br>IOPS 70:30 R:W, mininmum 16K block size) |
|              | ר           | Power supply with redundancy with necessary C13 power cords  |              | 2           | 1600W AC Power Supply  |
|              | 134         | Merged with Fibre Channel Port and removed   |              | 4           | 32GB SFP28 Short Wave 1-pack Pull Tab Optical Transceiver  |
|              | н           | 32/64 GbE Fibre Channel Port with redundancy with SPF28 shortwave transreceiver (minimum 4)  |              | 2           | Minimum of Raider 32/64GB 4-port Fibre Channel Host Bus Adapter  |
|              | Ь           | Controller with Minimum 192GB memory, min. 8-core CPU (min. 2 active-active controllers)   |              | 2           | 256GB 8-core Black Controller Node   |
|              | ы           | No change  |              | 1           | 2U Chassis   |
|              | 1           | Block Storage Base Configuration and Service   |              | 1           | Block Storage Base Configuration   |
|              |             | 5 DC Storage:  |              |             | 5 DC Storage:  |
| Total<br>Qty | Unit<br>Qty | S/N Item Description   | Total<br>Qty | Unit<br>Qty | S/N   Item Description   |
|              | ¥X          | Merged with warranty and removed   |              | ы           | 5 Years Technical Support for Server Hardware with replacement (24x7)  |
|              | ь           | 5 Years warranty (24x7) for functioning of all the components of the server (includes hardware and software) with 4-hours response time          |              | Ь           | 5 Years Technical Care Critical with Defective Media<br>Retention Service  |



| S'ears 24/8 8p 32G Switch Support (24x7)     1     5 Years warranty (24x7) for functioning of all the components of the Switch with 4-hours response time       Item Description     Unit Total Qty     S/N Item Description       OC Backup Server:     1     A DC Backup Server:       12 Large form factor (IEF) Configure-to-order Server (Commanult and windows server 2012 std operating system)     1     Merged with HDD and removed Mith HDD and removed Minimum 2.4GHz 15-core 193W Processor (multi threading 2 supported)       LOX CTO Mod-X 12LFF     1     Merged with HDD and removed Minimum 2.4GHz 15-core Processor, multi threading 2 with heat sink supported)       12 SCOB (LN32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22     2     32GB DDR4-3200 Registered DIMM With required cables with BSATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA 66 Business Critical 7.2K LFF LP 5-Years Warranty x1 BASATA  | th Support (24x7)  In the processor (multi threading 2 2 32GB DDR4 2000 CAS-22-22-22 2 32GB Fibre 2F-T Adapter 2F-T Adapter 2F-T Adapter 2F-T Adapter 2F-T OCP3 Adapter 2F-T O |
|--|--|
| Total S/N Item Descri Qty 4 DC Backup  A DC Backup  Merged wit  Merged wit  Minimum 2  with heat si  32GB DDR4  4TB SATA 60  with require  1 4GB Cache I  Battery for I  failure  Ethernet 1G  Hot-Swappa  Lights-out n  and control  Merged wit   | Total  S/N Item Description  4 DC Backup Server:  Merged with HDD and removed  Merged with HDD and removed  Minimum 2.4GHz 16-core Processor, multi threading, with heat sink  32GB DDR4-3200 Registered DIMM  4TB SATA 6G 7.2K LFF LP HDD with minimum 12 LFF slots with required cables  1TB SATA 6G 7.2K LFF LP HDD with required cables  1TB SATA 6G 7.2K LFF LP HDD with required cables  1TB SATA 6G 7.2K LFF LP HDD with required cables  1TB SATA 6G 7.2K LFF LP HDD with required cables  1TB SATA 6G 7.2K LFF LP HDD with required cables  PCle Riser Card with Flexible Slot Configuration  4GB Cache NVMe/SAS 12G RAID Controller  32 GB Fibre Channel Port with transreceiver (minimum 2)  No change  Battery for backing cache and RAM in the event of power failure  Ethernet 1GB 4-port BASE-T Adapter  Hot-Swappable Power Supply Unit  Lights-out management for remote server monitoring and control  Merged with HDD and removed  Merged with HDD and removed  Merged with Processor and removed  Merged with Processor and removed  |
| S Years war component  S/N Item Descri  4 DC Backup  Merged wit  Merged wit  Minimum 2  with heat si  32GB DDR4  4TB SATA 66  with require  4TB SATA 66  PCIe Riser C  4GB Cache I  32 GB Fibre  No change  Battery for I failure  Ethernet 1G  Hot-Swappa  Lights-out n and control  Merged wit  Merged wit  Removed  2U LFF Rail I  Merged with  | 5 Years warranty (24x7) for functioning of all the components of the Switch with 4-hours response time  5/N Item Description  4 DC Backup Server:  Merged with HDD and removed  Merged with HDD and removed  Minimum 2.4GHz 16-core Processor, multi threading, with heat sink  32GB DDR4-3200 Registered DIMM  4TB SATA 6G 7.2K LFF LP HDD with minimum 12 LFF slots with required cables  1TB SATA 6G 7.2K LFF LP HDD with required cables  1TB SATA 6G 7.2K LFF LP HDD with required cables  PCIe Riser Card with Flexible Slot Configuration  4GB Cache NVMe/SAS 12G RAID Controller  32 GB Fibre Channel Port with transreceiver (minimum 2)  No change  Battery for backing cache and RAM in the event of power failure  Ethernet 1GB 4-port BASE-T Adapter  Hot-Swappable Power Supply Unit  Lights-out management for remote server monitoring and control  Merged with HDD and removed  Merged with HDD and removed  Merged with HDD and removed  Merged with Processor and removed   |
| S Years war component Item Descriped wit Merged wit Minimum 2 with heat si 32GB DDR4 4TB SATA 60 with require 1TB 50 with require 1 | tem Description  DC Backup Server:  Merged with HDD and removed  Minimum 2.4GHz 16-core Processor, multi threading, with heat sink  32GB DDR4-3200 Registered DIMM  4TB SATA 6G 7.2K LFF LP HDD with minimum 12 LFF slots with required cables  1TB SATA 6G 7.2K LFF LP HDD with required cables  PCIe Riser Card with Flexible Slot Configuration  4GB Cache NVMe/SAS 12G RAID Controller  32 GB Fibre Channel Port with transreceiver (minimum 2)  No change  Battery for backing cache and RAM in the event of power failure  Ethernet 1GB 4-port BASE-T Adapter  Hot-Swappable Power Supply Unit  Lights-out management for removed  Merged with HDD and removed  Removed  2U LFF Rail Kit  Merged with Processor and removed  |
| m Descri m Descri rged wit rged wit safa 60 h heat si GB DDR4 B SATA 60 h require B SATA 60 h require Change Change t-Swappa hts-out n   | m Description  Backup Server:  |
|  | Unit Qty 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   |



| 5 Years Base/Storage Module Support | 5 Years Technical Care Critical with Defective Media<br>Retention Service   | Base/Storage Module Installation and Startup Service     | Installation and Startup Service | LTO-8 Ultrium 30TB RW Non Custom Labeled Library Pack 20 Data Cartridges with Cases | Universal Cleaning Cartridge | Tape Drive Install Service                               | Installation Service                                     | LC/LC Multi-mode OM4 2 Fiber 5m Cable | Upgrade Power Supply Kit | LTO-8 Ultrium 30750 FC Drive Upgrade Kit | Scalable Base/Storage Module | 6 DC Tape Library: | S/N Item Description | Configurator Defined Build Instruction Option | Virtual Rack Service                      | 7.68TB NVMe FIPS SSD Support              | 32/64 4pt FC HBA Support                  | 8C Switchless Node Support                | 2U Chassis Support                        | Base Configuration Support                |                                      |  |
|-------------------------------------|---|--|----------------------------------|---|------------------------------|--|--|---------------------------------------|--------------------------|--|------------------------------|--------------------|----------------------|---|---|---|---|---|---|---|--------------------------------------|--|
| Ь                                   | 1   | Þ  | Ь                                | ack 1   | 2                            | 2  | Д  | 2                                     | Ь                        | 2  | Ъ                            |                    | Oty O                | Ь   | Ь   | 12  | 2   | 2   | Ь   | 1   |                                      |  |
|                                     |   |  |                                  |   | 1                            |  |  |                                       |                          |  |                              | 6                  | Total S/N<br>Qty S/N |   |   |   |   |   |   |   |                                      |  |
| Merged with warranty and removed    | 5 Years warranty (24x7) for functioning of all the components of the tape library (includes hardware and software) with 4-hours response time | Merged with Installation and startup service and removed | No change                        | LTO-8 30TB RW Non Custom Labeled Library Pack 20 Data Cartridges with Cases         | No change                    | Merged with Installation and startup service and removed | Merged with Installation and startup service and removed | LC/LC Multi-mode OM4 Fiber 5m Cable   | No change                | LTO-8 FC Tape Drive Upgrade Kit          | No change                    | DC Tape Library:   | Item Description     | Included in 5 year technical care service     | Included in 5 year technical care service | Included in 5 year technical care service | Included in 5 year technical care service | Included in 5 year technical care service | Included in 5 year technical care service | Included in 5 year technical care service | software) with 4-hours response time |  |
| 9)                                  | Ь   | 9,   | בו                               | 1   | 2                            | ij   | 30   | 2                                     | ı                        | 2  | ы                            |                    | Unit<br>Qty          | \ <b>(</b>                                    | 98  | 9   | ŧ   | ĸ   | ٠   | ì   |                                      |  |
|                                     |   |  |                                  |   | ⊢                            |  |  |                                       |                          |  |                              |                    | Total<br>Qty         |   |   |   |   |   |   |   |                                      |  |



|     | Previous Specifications   |                  |              |     | Changed Specifications              | ations       |
|-----|---|------------------|--------------|-----|-------------------------------------|--------------|
|     | IITB Legacy Hardware BOM for Switch   |                  |              |     | IITB Legacy Hardware BOM for Switch | M for Switch |
| N/S | Item Description  | Qty              | Total<br>Qty | S/N | Item Description                    | Unit<br>Qty  |
| 7   | Network Switch  |                  |              | 7   | No change                           |              |
|     | 48 x 1/10G BaseT with 6x40/100G QSFP28 Copper Switch  | ↦                |              |     | No change                           | ш            |
|     | 40G QSFP+ MPO SR4 Transceiver   | 2                |              |     | No change                           | 2            |
|     | 5 Years Foundation Care Critical Service  | ъ                |              |     | No change                           | Ь            |
|     | 5 Years 24G Support (24x7)  | בו               |              |     | No change                           | 1            |
| Þ   | Switch Architecture and Performance:  |                  |              | A   | No change                           |              |
|     | Switch should have minimum 2.16 Tbps of higher Switching bandwidth & min 1000 Mpps of forwarding rate   | P                |              |     | No change                           | 1            |
|     | Switch should be equipped with minimum 16GB RAM, 128 GB Flash/ssd & 32 MB of packet buffer or more. Must support dual redundant power supplies that are hot   | Ь                |              |     | No change                           | 1            |
|     | Switch should support IPv4 and IPv6 switching and routing in hardware from day 1  | ⊢                |              |     | No change                           | 1            |
|     | Should support 0°C to 45°C operating temperature and 10% to 95% relative humidity   | ₽                | н            |     | No change                           | Ь            |
|     | The switch shall be supplied with the latest Modular OS version   | ь                |              |     | No change                           | 1            |
| œ   | Required Port Densities   |                  |              | В   | No change                           |              |
|     | Switch form factor should be $1U/2U$ or Chassis based to meet the port configuration requirement with full functionalities.   | <del> &gt;</del> |              |     | No change                           | 1            |
|     | As per solution requirement switch support minimum 48 x 1/10G BaseT and 6x40/100G QSFP28 fiber or higher ports. Vendor should quote the model to suffice the port requirement.                                  | Ь                |              |     | No change                           | 1            |
|     | should support high-speed stacking/cluster with the ability to stack up to eight units & should support minimum 400Gbps stacking bandwidth. Required 1 meter cables for stacking should be provided from day 1. | <u> </u> 3       |              |     | No change                           | н            |



| No change |
|---|
|---|



| Virtua<br>zones<br>separa  | H Servic               | Switch<br>Applic<br>be sup<br>who is   | Should<br>provis<br>day 1   | Shoul<br>Must:<br>fabric<br>Contro<br>dynan<br>be sup   | Should   | Shoul<br>snmp<br>need 1   | Switch<br>SFLOV   | Shoul  | Shoul   | G Mana              | Must<br>single  | Must:<br>Mac s  | describ   |
|--|------------------------|--|---|---|--|---|---|--|---|---------------------|---|---|---|
| Virtualizing and Segregating users and services in isolated zones (more secured mechanism than traditional VLANs separation especially for IoT deployments). | Service Virtualization | Switch should support TCL or Python based scripting and Application Telemetry for visibility. Analytics licenses should be supplied from day 1 to provide granular insights into who is using what application, when, and where in network | Should support OEM cloud management & Zero touch provisioning either via cloud or on prem NMS solution from day 1 | Should support Fabric capabilities within same hardware. Must support the ability to automatically connect to the fabric backbone. Licenses for fabric network, Controller/Orchestration tool (including automation, dynamic segmentation etc) or equivalent solution should be supplied from day 1 | Should be manageable by SSH,RMON, SNMP, and HTTP/s | Should support ability to restart individual CPU process like snmp, ssh, stp etc in case of process crash without the need to reboot the entire switch. | Switch should support ASIC based Flow monitoring like SFLOW/Netflow/IPFIX | Should support scheduled archiving / uploading of configuration and system log to a central server | Should support Serial RS232 port ,00B ethernet management port and USB or External Compact Flash slot | Management Features | Must support the ability to authenticate multiple users on a single port via 802.1X, web, or MAC at the same time | Must support 802.1x, RADIUS , TACACS+, Role-Base policy, Mac security | describe the switch capabilities to protect against DoS attacks |
| 1  |                        | ₽  | ⊢   | 1   | 1  | ь   | Ъ   | УР   | H   |                     | 14  | Ь   | 1   |
|  |                        |  |   | L.  |  |   |   |  |   |                     |   |   |   |
|  | I                      |  |   |   |  |   |   |  |   | മ                   |   |   |   |
| No change  | No change              | No change  | Removed   | No change   | No change  | No change   | No change   | No change  | No change   | No change           | No change   | No change   | No change   |
| ь  |                        | 1  | ъ   | ь   | 1  | Ъ   | Ъ   | ь  | ъ   |                     | ь   | ₽   | 1   |



|  | Þ                                    |                            |  |                               |  | 00                   | N/S                 |  | _         |   |  |  |   |  |
|--|--------------------------------------|----------------------------|--|-------------------------------|--|----------------------|---------------------|--|-----------|---|--|--|---|--|
| Switch should have minimum 4 Tbps of higher Switching bandwidth & min 1000 Mpps of forwarding rate | Switch Architecture and Performance: | 5 Years 24G Support (24x7) | 5 Years Foundation Care Critical Service | 40G QSFP+ MPO SR4 Transceiver | $48 \times 1/10/25$ G SFP28 with $8\times40/100$ G QSFP28 fiber switch (With 24 No 1G UTP/Copper Transceivers and 24 Nos of 25G MM transceivers) | Network Fibre Switch | Item Description    | Switch should be compliant to following certifications and Safety Regulation which are currently active: IEC 62368-1, EN 60825-1, FCC CFR 47 Part 15 Class A, RoHS, WEEE, EN 55032, EN55035, IEC/EN 61000-4-2,3,4,5,6,11 | Standards | The switch should support VXLAN or similar overlay technology | It should support any topology regardless of the number of switches connected and regardless of how they are connected | Solution should be able to build virtualized Layer 2/3 encapsulated tunnels across multiple switches, Data centers to extend servers domains with high-availability and security. Bidder must clearly mention what technology is used to achieve this. | fabric automation should be supported over the WAN to reach remote sites and make them part of the network in future. Bidder to explain how this is achieved. | configuration of services end to end with minimal human intervention. configuration automation technologies provided by bidders should expand to be consistent across the access, campus core, the data center |
| ы  |                                      | ъ                          | 1  | 2                             | ь  |                      | Unit<br>Qty         | ы  |           | 1   | 1  | Ъ  | Ь   | Ъ  |
|  |                                      |                            | -  | ۰                             |  |                      | Total<br>Qty        |  |           |   |  | 4  |   |  |
|  | A                                    |                            |  |                               |  | 00                   | S/N                 |  | _         |   |  |  |   |  |
| No change  | No change                            | No change                  | No change                                | No change                     | No change  | No change            | No change           | No change  | No change | No change   | No change  | No change  | No change   | No change  |
| Н  |                                      | 1                          | ı  | 2                             | 1  |                      | Unit<br>Qty         | 1  |           | 1   | 1  | 1  | 1   | 12   |
|  |                                      |                            |  |                               |  |                      | nit Total<br>ry Qty |  |           | ,-  |  | -  |   |  |



| Ь | No change   | 1   | Support for STP , MSTP, PVST+ , RSTP  |
|---|-------------|-----|---|
| 1 | No change   | ь   | Support for minimum 290K or more MAC addresses  |
| Ь | No change   | H   | Must support IEEE standard such as 802.3ab, 802.3ae, 802.3az, 802.1s, 802.1w, 802.1d, 802.1ba, 802.1x, 802.1q, 802.3ad,802.1ab  |
| Н | No change   | H   | 802. 1Q VLAN on all ports with support for 4k active concurrent VLANs & 4000 VLAN IDs and 802.1 AK for dynamic VLAN propagation.  |
|   | C No change |     | C Layer 2 features  |
| ь | No change   | Н   | Should support high-speed stacking/cluster with the ability to stack up to eight units & should support minimum 400Gbps stacking bandwidth. Required 1 meter cables for stacking should be provided from day 1.   |
| ь | No change   | Н   | As per solution requirement switch support minimum 48 x 1/10/25G SFP28 and 8x40/100G QSFP28 fiber or higher ports. Vendor should quote the model to suffice the port requirement.   |
| 1 | No change   | 1   | Switch form factor should be 1U /2U or Chassis based to meet the port configuration requirement with full functionalities.  |
|   | B No change |     | B Required Port Densities   |
| Þ | No change   | ь , | The switch shall be supplied with the latest Modular OS version   |
| ь | No change   | H   | Should support 0°C to 45°C operating temperature and 10% to 95% relative humidity   |
| Þ | No change   | Ь   | Switch should support IPv4 and IPv6 switching and routing in hardware from day 1  |
| Н | No change   | 1   | Switch should be equipped with minimum 16GB RAM, 128 GB Flash/ssd & 32 MB of packet buffer or more. Must support dual redundant power supplies that are hot swappable (supplied from day1). Must support N+1 redundant fan units with front to back airflow. Switch should be supplied with 24 No 1G UTP/Copper Transceivers and 24 Nos of 25G MM transceivers. |



| G No change |   |         | Management Features   | മ  |
|-------------|---|---------|---|--|
| No change   |   | Н       | Must support the ability to authenticate multiple users on a single port via 802.1X, web, or MAC at the same time       |  |
| No change   |   | <u></u> | Must support 802.1x, RADIUS , TACACS+, Role-Base policy, Mac security   |  |
| No change   |   | H       | Must support Denial of Service (DoS) protection. Please describe the switch capabilities to protect against DoS attacks |  |
| No change   |   | Ь       | Must support SSH-2, SCP-2 and SFTP with encryption/authentication   |  |
| No change   |   | Ь       | Switch Must support minimum 300 ACLs  |  |
| F No change |   |         | Security Features   | п  |
| No change   |   | H       | Switch should support eight hardware queues per port.   |  |
| No change   |   | Ъ       | Should support standard based protocols to dynamically reserve QOS and ensure lossless delivery of realtime Traffic     |  |
| No change   |   | 1       | Must support Diffserv Marking   |  |
| E No change |   |         | Quality of Service (QoS) Features   | m  |
| No change   |   | ы       | The switch should support unicast reverse path forwarding (uRPF) check feature  |  |
| No change   |   | 1       | Switch should support network virtualization. Must support VXLAN, DCBX, ETS, PFC.                                       |  |
| No change   |   | 1       | Should support policy based traffic redirection   |  |
| No change   |   | 1       | Switch should support 4K multicast groups or more and   |  |
| No change   | 1 | H       | Switch Should support 100K or more multicast entries.   |  |
| No change   |   | ы       | Switch Should support min 150K IPv6 routes  |  |
| No change   |   | 1       | Switch Should support min 200K IPv4 routes  |  |
| No change   |   | 1       | Support MVR and PIM-SM, PIM-SSM   |  |
| No change   |   | ר       | Support for IP Unicast routing protocols (static, RIPv2, OSPFv2 & v3, VRRP ,BGP ,PIM-DM/SSM) from day 1                 |  |
| D No change |   |         | Layer 3 features  | o  |
| No change   |   | 1       | Should support snmp and syslog Notification for MAC addition, deletion and movement across ports                        |  |
| No change   |   | Ь       | Should support Private VLAN , Vian Aggregation ,<br>Translation , 802.1v  |  |
|             |   |         |   | rivate VLAN , Vlan Aggregation , 1  Imp and syslog Notification for MAC 1  I and movement across ports 1  IPIM-SM, PIM-DM/SSM) from day 1  IPIM-SM, PIM-SSM 1  I pport min 200K IPv4 routes 1  Ipport Min 150K IPv6 routes 1  Ipport MK multicast groups or more and 1  Ipport network virtualization. Must support 1  I support unicast reverse path forwarding 1  I support unicast reverse path forwarding 1  I support abased protocols to dynamically 2  I g(OoS) Features 1  I ort minimum 300 ACLs 1  I ort minimum 300 ACLs 1  I ort minimum 300 ACLs 1  I capabilities to protect against DoS 1  I support eight hardware queues per port. 1  I and of Service (DoS) protection. Please 1  In capability to authenticate multiple users on a 1  ability to authenticate multiple users on a 1  I and I an |



| No change   |
|-------------|
| No change   |
|             |
| H No change |
| No change   |
| Removed     |
| No change   |



| Switch should be compliant to following certifications and Safety Regulation which are currently active: IEC 62368-1, EN 60825-1, FCC CFR 47 Part 15 Class A, RoHS, WEEE, EN 55032, EN55035, IEC/EN 61000-4-2,3,4,5,6,11 | Standards   | The switch should support VXLAN or similar overlay technology | It should support any topology regardless of the number of switches connected and regardless of how they are connected | encapsulated tunnels across multiple switches, Data centers to extend servers domains with high-availability and security. Bidder must clearly mention what technology is used to achieve this. |
|--|-------------|---|--|---|
| certifications and<br>tive: IEC 62368-1,<br>RoHS, WEEE, EN<br>5,6,11   |             | ilar overlay  | s of the number of<br>w they are   | itches, Data centers<br>illability and<br>nat technology is   |
| - Д  |             | Ь   | H  | ₽   |
|  |             |   |  |   |
| No change  | I No change | No change   | No change  | No change   |
| 1  |             | Ъ   | 14   | 1   |

|   | Previous Specifications IITB DR Hardware BOM                                     |                  |              |     | Changed Specifications  IITB DR Hardware BOM        |
|---|--|------------------|--------------|-----|---|
| S/N Item Description                                      |  | Q <sub>t</sub> y | Total<br>Qty | S/N | Item Description                                    |
| 1 DR Server:  |  |                  |              | ь   | DR Server:  |
| 8 Small form fa   | 8 Small form factor (SFF) NC Configure-to-order Server                           | 1                |              |     | Merged with HDD and removed                         |
| ICX CTO Mod-X 8SFF  | . 8SFF   | 1                |              |     | Merged with HDD and removed                         |
| Minimum 2.8G  | Minimum 2.8GHz 24-core 230W Processor (multi threading                           | J                |              |     | Minimum 2.8GHz 24-core Processor, multi threading,  |
| supported)  |  | ٨                |              |     | with heat sink                                      |
| 32GB (1x32GB) Dual Rank x4<br>Registered Smart Memory Kit | 32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22<br>Registered Smart Memory Kit | 16               | ω            |     | 32GB DDR4-3200 Registered DIMM                      |
| 600GB SAS 12G   | 600GB SAS 12G Mission Critical 10K SFF BC 5-years                                | J                |              |     | 600GB SAS 12G 10K SFF HDD with minmium 8 Small form |
| Warranty Multi Vendor HDD                                 | i Vendor HDD   | 7                |              |     | factor slots with required cables                   |
| x8/x16/x8 Prim  | x8/x16/x8 Primary FIO Riser Kit  | 1                |              |     | PCIe Riser Card with Flexible Slot Configuration    |
| x16 Lanes 4GB   | x16 Lanes 4GB Cache NVMe/SAS 12G RAID Controller                                 | 1                |              |     | 4GB Cache NVMe/SAS 12G RAID Controller              |
| 32GB 2-port Fib   | 32GB 2-port Fibre Channel Host Bus Adapter                                       | 1                |              |     | No change   |
| Ethernet 10GB   | Ethernet 10GB 2-port BASE-T Adapter  | 1                |              |     | No change   |



| 2            | ₽           | 32GB 24-port fiber channel switch with 8 port 32GB SFP28 populated  | 2            | Ľ             | 32Gb 24/8 8-port 32GB Short Wave SFP28 Fibre Channel Switch  |     |
|--------------|-------------|---|--------------|---------------|--|-----|
|              |             | 3 DR SANSwitches:   |              |               | 3 DR SAN Switches:   | ω   |
| Total<br>Qty | Unit<br>Qty | S/N Item Description  | Total<br>Qty | Unit T        | 5/N Item Description   | N/S |
|              | ь           | 5 Years warranty (24x7) for functioning of all the components of the Switch with 4-hours response time                                  |              | ь             | 5 Years 24G Support (24x7)   |     |
| -            | ÿ)          | Merged with warranty and removed  |              | 1             | 5 Years Foundation Care Critical Service   |     |
|              | 2           | No change   |              | 2             | 450W Front-to-Back AC Power Supply India English   |     |
| 2            | 2           | No change   | 2            | 2             | 450W Front-to-Back AC Power Supply   |     |
|              | 4           | No change   |              | 4             | Front-to-Back Fan Tray   |     |
|              | 2           | No change   |              | 2             | 40G QSFP+ MPO SR4 Transceiver  |     |
|              | 1           | No change   |              | 1             | 24 Port 1/10G 6QSFP+ or 2QSFP28 Switch   |     |
|              |             | 2 DR Switches:  |              |               | 2 DR Switches:   | 2   |
| Total<br>Qty | Unit<br>Qty | S/N Item Description  | Total<br>Qty | Unit 7<br>Qty | S/N Item Description   | N/S |
|              | ij          | Merged with warranty and removed  |              | ₽             | 5 Years Technical Support for Server Hardware with replacement (24x7)  |     |
|              | H           | 5 Years warranty (24x7) for functioning of all the components of the server (includes hardware and software) with 4-hours response time |              | H             | 5 Years Technical Care Critical with Defective Media<br>Retention Service  |     |
|              | (0)         | Merged with processor and removed   |              | 2             | High Performance Heat Sink Kit   |     |
|              | 1           | 2U SFF Rail Kit   |              | 1             | 2U SFF Easy Install Rail Kit   |     |
|              |             | Removed   | Ş.           | 1             | Black Rivets Kit   |     |
|              | 0           | Merged with HDD and removed   |              | 1             | 8SFF SAS/SATA Tri-Mode Cable Kit   |     |
|              | <b>1</b>    | Lights-out management for remote server monitoring and control  |              | 1             | ILO (or equivalent Platform Management Architecture) Advanced 1-server License with 5 Years Support on Licensed Features |     |
|              | 2           | Hot-Swappable Power Supply Unit   |              | 2             | Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit   |     |
|              | 1           | Cooling fans inside cabinet   |              | 1             | Maximum Performance Fan Kit  |     |
|              | בו          | Ethernet 1GB 4-port BASE-T Adapter  |              | Ľ             | Ethernet 1Gb 4-port BASE-T OCP3 Adapter  |     |
|              | Ц           | Battery for backing cache and RAM in the event of power failure   |              | 1             | 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit   |     |



| 1 No change   | 2-   | Power supply with redundancy with necessary C power cords   | Minimum 57 TB usable storage on RAID6, expandable atleast up to 100 TB (NVMe SFF Encrypted SSD, minimum 100K IOPS with 16k block size)  1 block size 70:30 R:W) | wer Cord 1 Merged with power supply and removed  | ord 2 Merged with power supply and removed   | wer Cord 1 Merged with power supply and removed        | tem Description  DR Storage:  Block Storage Base Configuration 2U Chassis  256GB 8-core Block Controller Node  Minimum of Raider 32/64GB 4-port Fibre Channel Host Bus Adapter  32GB SFP28 Short Wave 1-pack Pull Tab Optical Transceiver 1600W AC Power Supply  7.68TB NVMe SFF Encrypted SSD [Minimum 57TiB Usable Capacity on RAID6, minimum 100K 10PS 70:30 R:W, minimmum 16K block size) 250V 10Amp Black 1.4m WW Power Cord 1810er CDM Bluetooth Connectivity Kit 1810ck Storage OS 8-core Tier-4, 5-Years Software and Support SaaS FIPS Data Encryption E-LTU (Electronic License to use) 1810ck Storage OS Startup Service 1810ck Storage OS Startup Service 1810ck Storage Service 1810ck Storage Service | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Total Qty | 4 × × | S Years warranty (24x7) for functioning of all the components of the Switch with 4-hours response time litem Description  DR Storage:  Block Storage Base Configuration and Service No change  Controller with Minimum 192GB memory, min. 8-core CPU (min. 2 active-active controllers) 32/64 GbE Fibre Channel Port with redundancy with SPF28 shortwave transreceiver (minimum 4)  Merged with Fibre Channel Port and removed Power supply with redundancy with necessary C13 power cords  Minimum 57 TB usable storage on RAID6, expandable at least up to 100 TB  (NVMe SFF Encrypted SSD, minimum 100K IOPS with 1 block size 70:30 R:W)  Merged with power supply and removed Merged with power supply and removed Removed  Merged with power supply and removed support for FIPS Data Encryption with appropriate lice included in 1stallation Charges and removed Merged to base configuration and removed |
|---|--|---|---|--|--|--|---|---------------------------------------|-----------|-------|---|
| Qty  S/N Item Description  4 DR Storage:  Block Storage Bas | Qty  4 DR Storage: Block Storage Bas                               | Qty Qty S/N  1 1 2 2  | Qty Qty S/N  1 1 2 2 2 2 2  | Otty Otty Otty Otty Otty Otty Otty Otty  | Otty Otty Otty Otty Otty Otty Otty Otty  | Otty Otty  | (X7)  | <u>-</u> ⊢                            |           |       | Merged with warranty and removed 5 Years warranty (24x7) for functioning of all th components of the Switch with 4-hours respon   |
| 4 DR Storage: Block Storage Bas                             | 4 DR Storage: Block Storage Bas                                    | 1 1 1 4   | 2 4 2 2 1 1   | 1<br>1<br>1<br>2<br>2<br>2<br>2<br>1   | 1 1 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                |   | Oty                                   | Total     | N/S   | Item Description  |
| Block Storage Bas   | Block Storage Bas  | 4 2 2 1 1   | 2 4 2 2 1 1   | 1 1 2 2 2 1 1 2 1  | 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | 1<br>1<br>2<br>2<br>2<br>2<br>1<br>1<br>1              |   |                                       |           | 4     | DR Storage:   |
|   |  | 2 2 1   | 2 4 2 2 1   | 2 2 2 1 1 2 2 1  | 1 2 2 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1  | 1 2 2 1 1 2 2 1 1 1 2 2 1 1 1 2 1 1 1 1                |   | Ь                                     |           |       | Block Storage Base Configuration and Service  |
| 2   |  | 4   | 2 4   | 2 4  | 1 1  | 1 1 1 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2                | ort Fibre Channel Host Bus  | 2                                     |           |       | 32/64 GbE Fibre Channel Port with redundancy with SPF28 shortwave transreceiver (minimum 4)   |
| 2 2   | 2  |   |   | 12 1   | 2 2 6, minimum 100K 12 1   | 2 RAID6, minimum 100K 12 ck size) 1                    | ull Tab Optical Transceiver   | 4                                     |           |       | Merged with Fibre Channel Port and removed  |
| 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                     | 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                            | von RAID6, minimum 100K 12 block size) 1 wer Cord 1 prd 2 ver Cord 1  | r Cord 1 2 Cord 1   | 2 Cord 1   | 1  |  | vity Kit  | Ь                                     |           |       | Removed   |
| 2                     | 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                            | von RAID6, minimum 100K 12 block size) 1 wer Cord 1 ver Cord 2 ver Cord 1 ity Kit 1   | ord 1 2 rd 1 1  | rd 2 1 1 1   | 1 1  | 1  | -Years Software and   | 92                                    |           |       | Included in 5 year technical care service   |
| 2                     | 2 4 4 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1                            | v on RAID6, minimum 100K 12 block size) 1 wer Cord 1 ord 2 ver Cord 1 ity Kit 1 Years Software and 92   | ord 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | 2 1 1 Software and 92  | rd 1 1 Software and 92   | Software and 92 Included in 5 year                     | tronic License to use)  | 1                                     |           |       | Support for FIPS Data Encryption with appropria   |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                       | 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                            | von RAID6, minimum 100K 12 block size) 1 wer Cord 1 ord 2 ver Cord 1 | ord     1       2       rd     1       1     1       Software and     92       License to use)     1  | rd 2  Indicate to use) 2  Indicate to use) 2   | rd 1 Software and 92 License to use) 1   | Software and 92 License to use) 1                      |   | 1                                     |           |       | Included in 5 year technical care service   |
| 2                     | 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                            | von RAID6, minimum 100K 12 block size) 1 wer Cord 1 ver Cord 2 ver Cord 1 ity Kit 1 -Years Software and 92 rronic License to use) 1               | ord     1       2       rd     1       1     1       Software and     92       License to use)     1       1     1  | 2     1     1  | Software and 92 License to use) 1  | Software and 92 License to use) 1                      | vice  | ь                                     |           |       | Included in Installation Charges and removed  |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                       | 2 2 1 1 2 9 2 9 2 9 2 9 2  | v on RAID6, minimum 100K 12 block size) 1 wer Cord 1 prd 2 ver Cord 1 ity Kit 1 -Years Software and 92 rronic License to use) 1 vice 1            | wer Cord 1  ord 2  wer Cord 1  wity Kit 1  5-Years Software and 92  tronic License to use) 1  rvice 1   | 2   1   1  | Software and 92 License to use) 1 1  | Software and 92 License to use) 1 1                    |   | 1                                     |           |       | Merged to base configuration and removed  |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                       | 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                            | v on RAID6, minimum 100K 12 block size) 1 wer Cord 1 ord 2 ver Cord 1 ity Kit 1 Years Software and 92 rronic License to use) 1 vice 1             | wer Cord 1 ord 2 wer Cord 1 vity Kit 1 -Years Software and 92 tronic License to use) 1 vice 1   | ord 2 wer Cord 1 vity Kit 1 -Years Software and 92 tronic License to use) 1 vice 1     | Ind 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | -Years Software and 92 tronic License to use) 1 vice 1 | Ф   | ы                                     |           |       | Merged to base configuration and removed  |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                       | 2<br>2<br>2<br>2<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 | von RAID6, minimum 100K 12 block size) 1 wer Cord 1 ord 2 ver Cord 1 rity Kit 1 -Years Software and 92 tronic License to use) 1 vice 1            | wer Cord 1 ord 2 ver Cord 1 vity Kit 1 -Years Software and 92 tronic License to use) 1 vice 1 1   | ord 2 ver Cord 1 rity Kit 1 -Years Software and 92 tronic License to use) 1 vice 1 1 1 | ver Cord 1  vity Kit 1  -Years Software and 92  tronic License to use) 1  vice 1  1  1 | -Years Software and 92 tronic License to use) 1 vice 1 |   | 1                                     |           |       | Merged to base configuration and removed  |



| Ţ  | Included in 5 year technical care service   | ۲  | Configurator Defined Build Instruction Option   |
|----|---|----|---|
| ì  | Included in 5 year technical care service   | ы  | Virtual Rack Service                            |
| ij | Included in 5 year technical care service   | 12 | 7.68TB NVMe FIPS SSD Support                    |
| ñ  | Included in 5 year technical care service   | 2  | 32/64 4pt FC HBA Support                        |
| ă  | Included in 5 year technical care service   | 2  | 8C Switchless Node Support                      |
| ř. | Included in 5 year technical care service   | 1  | 2U Chassis Support                              |
| ,  | Included in 5 year technical care service   | Ь  | Base Configuration Support                      |
| ъ  | components of the storage (includes hardware and software) with 4-hours response time | ъ  | 5 Years Technical Care Essential Service (24x7) |

Assistant Registrar (MM)
IIT Bombay