

**Amendment-3 to "RFP 17/2020-21 dated 16/09/2020 for Supply, Installation, Configuration, Implementation and Maintenance of Servers and Other Items in Canara Bank"**

**It is decided to amend the following in respect of the above RFP:**

Sl. No.	Page No.	Section/ Annexure/ Appendix of the RFP	Clause No.	Existing	Amended
a.	36 to 45	Annexure-7	Functional and Technical Specifications /Requirements for Supply, Installation, Configuration, Implementation and Maintenance of Servers and Other items in Canara Bank	Annexure-7 (Functional and Technical Specifications /Requirements for Supply, Installation, Configuration, Implementation and Maintenance of Servers and Other items in Canara Bank)	<b><u>Amended Annexure-7 (Functional and Technical Specifications /Requirements for Supply, Installation, Configuration, Implementation and Maintenance of Servers and Other items in Canara Bank.) is attached as Annexure.</u></b>
b.	49 to 51	Annexure-14	Bill of Material	Bill of Material	<b><u>Amended Annexure-14 (Bill of Material) is attached as Annexure.</u></b>

**c. Amended Clause no. 6.1 of Section B on Page no. 10 (Requirement details)**

6.1. Bank invites sealed offers ('Conformity to Eligibility Criteria', 'Technical Proposal' and 'Commercial Bid (Indicative)') for Supply, Installation, Configuration, Implementation and Maintenance of Servers and Other related items in Canara Bank for Data Center (DC) & Disaster Recovery Center (DRC) as per the Terms & Conditions, Technical Specifications and Scope of Work described elsewhere in this document. The brief description of Solution is furnished in following table:

Sl. No.	Item Details	Quantity
a.	<b><u>Servers as per Annexure-7(A), 7(B), 7(C) &amp; 7 (D).</u></b>	<b><u>49 (26 in Bengaluru, 22 in Mumbai and 1 in Delhi)</u></b>
b.	<b><u>Microsoft Windows Server 2019 Standard Open License for 2 Core Pack</u></b>	<b><u>552</u></b>
c.	Windows Server Remote Desktop Services User CAL	300
d.	Red hat Enterprise Linux with three year Standard Subscription	02

All the other Instructions and Terms & Conditions of the above RFP remain unchanged.  
Please take note of the above Amendments while submitting your response to the subject RFP.

Date: 20/10/2020  
Place: Bengaluru

  
Deputy General Manager

**Amended Annexure-7**

**Functional and Technical Specifications /Requirements for Supply, Installation, Configuration, Implementation and Maintenance of Servers and Other items in Canara Bank**

**SUB: RFP for Supply, Installation, Configuration, Implementation and Maintenance of Servers and Other items in Canara Bank.**

**Ref: Your RFP 17/2020-21 dated 16/09/2020**

**Note:**

1. The Bidder shall specifically mention the make and model of the items offered for all the requirements in terms of RFP without fail, failing which the Bid is liable for rejection.
2. If the Bidder feels that certain features offered are superior to what has been specified by the Bank, it shall be highlighted separately. Information regarding any modification required in the proposed configuration to meet the intent of the specifications and state-of-the-art technology shall be provided. However, the Bank reserves the right to accept the modifications / superior features suggested/offered.
3. The Bidder shall provide all other required equipment and services, whether or not explicitly mentioned in this RFP, to ensure the intent of specification, completeness, operability, maintainability and upgradability.
4. The selected bidder shall own the responsibility to demonstrate that the products offered are as per the specification/performance stipulated in this RFP and as committed by the bidder either at site or in bidder's work site without any extra cost to the Bank.

**A. Technical specifications for Servers (5 Nos. at DC and 5 Nos. at DR):**

Sl. No.	Particulars	Detailed Configuration	Bidder's Compliance (Yes/No)
1.	Make	Bidder to specify	
2.	Model	Bidder to specify	
3.	Form Factor	2U Rack Mountable Server with Rail Kits & Screws. Bezel	
4.	Processor	<ul style="list-style-type: none"> <li>Socket: Minimum 2</li> <li>Type: 2nd Generation Intel Xeon Scalable Processor</li> <li>Model: Intel® Xeon® Gold 6242 Processor</li> <li>Quantity: Minimum 2</li> <li>Core: 16 Per Processor Unit</li> <li>Base Frequency: 2.80 GHz</li> <li>Turbo Frequency: 3.90 GHz</li> <li>Cache: Minimum 22 MB</li> </ul>	
5.	Platform Controller Hub	Intel C621 Chipset or latest/equivalent	
6.	Main Board	Suitable Intel Main Board or equivalent	
7.	Security	<ul style="list-style-type: none"> <li>TPM 2.0 (optional)</li> <li>Cryptographically signed firmware</li> <li>Hardware root of trust</li> <li>Secure Boot</li> </ul>	



		<ul style="list-style-type: none"> <li>• System Lockdown</li> <li>• System Erase</li> <li>• BitLocker Drive Encryption</li> <li>• AES New Instructions</li> <li>• Trusted Execution Technology</li> </ul>	
8.	Memory	<ul style="list-style-type: none"> <li>• Module Type: DDR4 DIMM</li> <li>• Capacity: Minimum 32 GB</li> <li>• Quantity: Minimum 16</li> <li>• Speed: Minimum 2933 Mhz</li> <li>• Advanced ECC (Error Correcting Code) type or similar technology</li> <li>• Registered ECC DIMMs</li> </ul>	
9.	Raid Controller	<ul style="list-style-type: none"> <li>• Interface: PCIe 3.0</li> <li>• Data Transfer Rate: 12Gbps per lane</li> <li>• Cache: 2GB or higher</li> <li>• RAID 0, 1, 5, 10 or higher</li> <li>• Cooling: Heat sink with intelligent Fan</li> <li>• Management: Browser based Tool, CLI (Command Line Interface- scriptable configuration tool) and API Package</li> <li>• SMTP Email Alert Notification</li> <li>• Alarm Buzzer</li> <li>• Storage Health Inspector</li> <li>• Automatic and configurable RAID Rebuilding Priority</li> <li>• Auto resume incomplete rebuilding after</li> <li>• Single-RAID or Multi-RAID Arrays per Controller</li> </ul>	
10.	Disks	<ul style="list-style-type: none"> <li>• Data Center SSD for Enterprise</li> <li>• Interface: 12 Gb/s SAS Dual-port</li> <li>• Capacity: 1.6TB SSD or higher capacity</li> <li>• No of Disks: 5</li> <li>• Form Factor: 2.5"</li> <li>• Service: Hot swappable</li> <li>• Throughput Sequential Read/Write: 900MBps/900MBps or more</li> <li>• IOPS 4K Read/Write: 100K/60K or more for each disk</li> <li>• Power Loss Protection</li> <li>• Static &amp; Dynamic Wear Levelling</li> <li>• Reliability tracking, usage statistics, Wear Leveling, temperature, Life</li> <li>• Endurance - TBW: 6000 or more</li> <li>• Endurance - DWPD 5 Year: 3 or less (Replacement warranty if endurance level is less than 95%) during entire contract period.</li> </ul>	
11.	Ethernet	<ul style="list-style-type: none"> <li>• Two Port of 1Gbase-T On-Board LOM with supported minimum 10 meter Cat6 UTP Cable</li> <li>• Two Port of 10GbE Base T LOM with Supported minimum 30 Meter Cat6 UTP Cable</li> </ul>	

		<ul style="list-style-type: none"> <li>Dedicate One Port of 1Gbase-T management port chassis card with minimum 10 meter Cat6 UTP Cable</li> </ul>	
12.	FC HBA	1 Nos of Dual Port 32GB FC HBA PCIe with Supported SFP+ transceivers and 2 Nos of minimum 30 Meter OM3 FC cable or higher for SAN Connectivity to existing SAN Switches & Storage (FC HBA & transceivers should Support 16GBps Switch)	
13.	PCI Slots	4 No of 8x Gen3 PCIe slots per 2U compute module	
14.	Ports	<ul style="list-style-type: none"> <li>1 USB 3.0</li> <li>1 VGA</li> </ul>	
15.	Out of Band Management	<ul style="list-style-type: none"> <li>Integrated BMC with IPMI 2.0 &amp; Redfish</li> <li>Management of hardware and software components, Power on/off, boot process, Management log, dedicated Management ports. Should able to integrate with industry wide KVM solution.</li> <li>Management software should provide Role Based Security through LDAP or Local and able to provide pre-failure alarms for CPU, Memory &amp; HDD by SMTP.</li> </ul>	
16.	OS & Hypervisor Certification	Windows Server 2019 Standard and its roles/features <ul style="list-style-type: none"> <li>2019 Hyper V</li> <li>Secure Boot</li> <li>TPM 2.0</li> <li>BitLocker Drive</li> </ul> Red hat Enterprise Linux 8	
17.	Power Supply	Server should be provided with Redundant hot swappable Power supplies. The Power supplies should be FCC class A certified and power cables to be IEC C13-14.	
18.	FAN	Server should have redundant fully populated Hot swap fans	
19.	Serviceability	Hot-swap/redundant fans, and PSUs; light path diagnostic LEDs	
20.	UEFI Firmware	UEFI 2.3.1c-based system and firmware that supports secure boot	
21.	Drivers & Accessories	Required drivers and accessories to be provided	
22.	Warranty and Support	03 Years, Comprehensive, On-Site Support Warranty including part replacement/repairs within 4 hours of reporting, and Software support for updates, upgrades, patches, and bug fixes for supplied s/w from OEM 24 x 7 x 365 days. SSD drives should be covered for irrespective of read/writes on them. In case of Disk failure, the faulty disk will be maintained /destroyed by Canara Bank. Proactive storage monitoring & support from OEM should be enabled. The proposed bidder will need to ensure support of product & change of components @ zero cost in case of any part becoming obsolete/EOL & EOS	

**B. Technical Specifications of Server (14 Nos. at DC and 10 Nos. at DRC):**

Sl. No.	Particulars	Detailed Configuration	Bidder's Compliance (Yes/No)
1.	Make	Bidder to specify	
2.	Model	Bidder to specify	
3.	Form Factor	2U Rack Mountable Server with Rail Kits & Screws. Bezel	
4.	Processor	<ul style="list-style-type: none"> <li>• Socket: Minimum 2</li> <li>• Type: 2nd Generation Intel Xeon Scalable Processor</li> <li>• Model: Intel® Xeon® Gold 6242 Processor</li> <li>• Quantity: Minimum 1 with Upgrade option</li> <li>• Core: 16 Per Processor Unit</li> <li>• Base Frequency: 2.80 GHz</li> <li>• Turbo Frequency: 3.90 GHz</li> <li>• Cache: Minimum 22 MB</li> </ul>	
5.	Platform Controller Hub	Intel C621 Chipset or latest/equivalent	
6.	Main Board	Suitable Intel Main Board or equivalent	
7.	Security	<ul style="list-style-type: none"> <li>• TPM 2.0 (optional)</li> <li>• Cryptographically signed firmware</li> <li>• Hardware root of trust</li> <li>• Secure Boot</li> <li>• System Lockdown</li> <li>• System Erase</li> <li>• BitLocker Drive Encryption</li> <li>• AES New Instructions</li> <li>• Trusted Execution Technology</li> </ul>	
8.	Memory	<ul style="list-style-type: none"> <li>• Module Type: DDR4 DIMM</li> <li>• Capacity: Minimum 32 GB</li> <li>• Quantity: Minimum 4</li> <li>• Speed: Minimum 2933 Mhz</li> <li>• Advanced ECC (Error Correcting Code) type or similar technology</li> <li>• Registered ECC DIMMs</li> </ul>	
9.	Raid Controller	<ul style="list-style-type: none"> <li>• Interface: PCIe 3.0</li> <li>• Data Transfer Rate: 12Gbps per lane</li> <li>• Cache: 2GB or higher</li> <li>• RAID 0, 1, 5, 10 or higher</li> <li>• Cooling: Heat sink with intelligent Fan</li> <li>• Management: Browser based Tool, CLI (Command Line Interface- scriptable configuration tool) and API Package</li> <li>• SMTP Email Alert Notification</li> <li>• Alarm Buzzer</li> <li>• Storage Health Inspector</li> <li>• Automatic and configurable RAID Rebuilding Priority</li> </ul>	



		<ul style="list-style-type: none"> <li>• Auto resume incomplete rebuilding after</li> <li>• Single-RAID or Multi-RAID Arrays per Controller</li> </ul>	
10.	Disks	<ul style="list-style-type: none"> <li>• Data Center SSD for Enterprise</li> <li>• Interface: 12 Gb/s SAS Dual-port</li> <li>• Capacity: 960TB SSD or higher capacity</li> <li>• No of Disks: 2</li> <li>• Form Factor: low profile</li> <li>• Service: Hot swappable</li> <li>• Throughput Sequential Read/Write: 900MBps/900MBps or more</li> <li>• IOPS 4K Read/Write: 100K/60K or more for each disk</li> <li>• Power Loss Protection</li> <li>• Static &amp; Dynamic Wear Levelling</li> <li>• Reliability tracking, usage statistics, Wear Leveling, temperature, Life</li> <li>• Endurance - TBW: 6000 or more</li> <li>• Endurance - DWPD 5 Year: 3 or less (Replacement warranty if endurance level is less than 95%) during entire contract period.</li> </ul>	
11.	Ethernet	<ul style="list-style-type: none"> <li>• Two Port of 1Gbase-T On-Board LOM with supported minimum 10 meter Cat6 UTP Cable</li> <li>• Two Port of 10GbE Base T LOM with Supported minimum 30 Meter Cat6 UTP Cable</li> <li>• Dedicate One Port of 1Gbase-T management port chassis card with minimum 10 meter Cat6 UTP Cable</li> </ul>	
12.	FC HBA	1 Nos of Dual Port 32GB FC HBA PCIe with Supported SFP+ transceivers and 2 Nos of minimum 30 Meter OM3 FC cable or higher for SAN Connectivity to existing SAN Switches & Storage (FC HBA & transceivers should Support 16GBps Switch)	
13.	PCI Slots	4 No of 8x Gen3 PCIe slots per 2U compute module	
14.	Ports	<ul style="list-style-type: none"> <li>• 1 USB 3.0</li> <li>• 1 VGA</li> </ul>	
15.	Out of Band Management	<ul style="list-style-type: none"> <li>• Integrated BMC with IPMI 2.0 &amp; Redfish</li> <li>• Management of hardware and software components, Power on/off, boot process, Management log, dedicated Management ports. Should able to integrate with industry wide KVM solution.</li> <li>• Management software should provide Role Based Security through LDAP or Local and able to provide pre-failure alarms for CPU, Memory &amp; HDD by SMTP.</li> </ul>	
16.	OS & Hypervisor Certification	<p>Windows Server 2019 Standard and its roles/features</p> <ul style="list-style-type: none"> <li>• 2019 Hyper V</li> <li>• Secure Boot</li> </ul>	

		<ul style="list-style-type: none"> <li>TPM 2.0</li> <li>BitLocker Drive</li> </ul> Red hat Enterprise Linux 8	
17.	Power Supply	Server should be provided with Redundant hot swappable Power supplies. The Power supplies should be FCC class A certified and power cables to be IEC C13-14.	
18.	FAN	Server should have redundant fully populated Hot swap fans	
19.	Serviceability	Hot-swap/redundant fans, and PSUs; light path diagnostic LEDs	
20.	UEFI Firmware	UEFI 2.3.1c-based system and firmware that supports secure boot	
21.	Drivers & Accessories	Required drivers and accessories to be provided	
22.	Warranty and Support	03 Years, Comprehensive, On-Site Support Warranty including part replacement/repairs within 4 hours of reporting, and Software support for updates, upgrades, patches, and bug fixes for supplied s/w from OEM 24 x 7 x 365 days. SSD drives should be covered for irrespective of read/writes on them. In case of Disk failure, the faulty disk will be maintained /destroyed by Canara Bank. Proactive storage monitoring & support from OEM should be enabled. The proposed bidder will need to ensure support of product & change of components @ zero cost in case of any part becoming obsolete/EOL & EOS	

**C. Technical Specifications of Server (5 Nos. at DC and 5 Nos. at DRC):**

Sl. No.	Particulars	Detailed Configuration	Bidder's Compliance (Yes/No)
1.	Make	Bidder to specify	
2.	Model	Bidder to specify	
3.	Form Factor	2U Rack Mountable Server with Rail Kits & Screws. Bezel	
4.	Processor	<ul style="list-style-type: none"> <li>Socket: Minimum 2</li> <li>Type: 2nd Generation Intel Xeon Scalable Processor</li> <li>Model: Intel® Xeon® Gold 6242 Processor</li> <li>Quantity: Minimum 2</li> <li>Core: 16 Per Processor Unit</li> <li>Base Frequency: 2.80 GHz</li> <li>Turbo Frequency: 3.90 GHz</li> <li>Cache: Minimum 22 MB</li> </ul>	
5.	Platform Controller Hub	Intel C621 Chipset or latest/equivalent	
6.	Main Board	Suitable Intel Main Board or equivalent	
7.	Security	<ul style="list-style-type: none"> <li>TPM 2.0 (optional)</li> <li>Cryptographically signed firmware</li> <li>Hardware root of trust</li> </ul>	



		<ul style="list-style-type: none"> <li>Secure Boot</li> <li>System Lockdown</li> <li>System Erase</li> <li>BitLocker Drive Encryption</li> <li>AES New Instructions</li> <li>Trusted Execution Technology</li> </ul>	
8.	Memory	<ul style="list-style-type: none"> <li>First Module Type: DDR4 DIMM</li> <li>Capacity: 32 GB</li> <li>Quantity: 12</li> <li>Speed: 2666 MHz</li> <li>Second Module Type: DCPMM/PMEMs</li> <li>Capacity: 128 GB</li> <li>Quantity: 12</li> <li>Speed: 2666 MHz</li> <li>DCPMM Modes: Memory/App Direct/Mixed Memory</li> <li>Advanced ECC (Error Correcting Code) type or similar technology</li> <li>Registered ECC DIMMs</li> </ul>	
9.	Raid Controller	<ul style="list-style-type: none"> <li>Interface: PCIe 3.0</li> <li>Data Transfer Rate: 12Gbps per lane</li> <li>Cache: 2GB or higher</li> <li>RAID 0, 1, 5, 10 or higher</li> <li>Cooling: Heat sink with intelligent Fan</li> <li>Management: Browser based Tool, CLI ((Command Line Interface- scriptable configuration tool)and API Package</li> <li>SMTP Email Alert Notification</li> <li>Alarm Buzzer</li> <li>Storage Health Inspector</li> <li>NVMe SMART status</li> <li>Automatic and configurable RAID Rebuilding Priority</li> <li>Auto resume incomplete rebuilding after</li> <li>Single-RAID or Multi-RAID Arrays per Controller</li> </ul>	
10.	Disks	<ul style="list-style-type: none"> <li>Data Center SSD 3D TLC for Enterprise</li> <li>Interface: 12 Gb/s SAS Dual-port</li> <li>Capacity: 3TB SSD or higher capacity</li> <li>No of Disks: 8</li> <li>Form Factor: 2.5"</li> <li>Service: Hot swappable</li> <li>Throughput Sequential Read/Write: 3GBs/2.5GBs or more</li> <li>IOPS 4K Read/Write: 100K/60K or more for each disk</li> <li>Power Loss Protection</li> <li>Static &amp; Dynamic Wear Levelling</li> <li>Reliability tracking, usage statistics, Wear Leveling, temperature, Life</li> <li>Endurance - TBW: 3PB or more</li> <li>Endurance - DWPD 5 Year: 1</li> </ul>	



		(Replacement warranty if endurance level is less than 95%) during entire contract period.	
11.	Ethernet	<ul style="list-style-type: none"> <li>Two Port of 1Gbase-T On-Board LOM with supported minimum 10 meter Cat6 UTP Cable</li> <li>Two Port of 10GbE Base T LOM with Supported minimum 30 Meter Cat6 UTP Cable</li> <li>Dedicate One Port of 1Gbase-T management port chassis card with minimum 10 meter Cat6 UTP Cable</li> </ul>	
12.	FC HBA	1 Nos of Dual Port 32GB FC HBA PCIe with Supported SFP+ transceivers and 2 Nos of minimum 30 Meter OM3 FC cable or higher for SAN Connectivity to existing SAN Switches & Storage (FC HBA & transceivers should Support 16GBps Switch)	
13.	PCI Slots	4 No of 8x Gen3 PCIe slots per 2U compute module	
14.	Ports	<ul style="list-style-type: none"> <li>1 USB 3.0</li> <li>1 VGA</li> </ul>	
15.	Out of Band Management	<ul style="list-style-type: none"> <li>Integrated BMC with IPMI 2.0 &amp; Redfish</li> <li>Management of hardware and software components, Power on/off, boot process, Management log, dedicated Management ports. Should able to integrate with industry wide KVM solution.</li> <li>Management software should provide Role Based Security through LDAP or Local and able to provide pre-failure alarms for CPU, Memory &amp; HDD by SMTP.</li> </ul>	
16.	OS & Hypervisor Certification	Windows Server 2019 Standard and its roles/features <ul style="list-style-type: none"> <li>2019 Hyper V</li> <li>Secure Boot</li> <li>TPM 2.0</li> <li>BitLocker Drive</li> <li>Remote Server Administration Tools (RSAT)</li> <li>Remote Desktop Services</li> </ul> Red hat Enterprise Linux 8	
17.	Power Supply	Server should be provided with Redundant hot swappable Power supply. The Power supplies should be FCC class A certified and power cables to be IEC C13-14.	
18.	FAN	Server should have redundant fully populated Hot swap fans	
19.	Serviceability	Hot-swap/redundant fans, and PSUs; light path diagnostic LEDs	
20.	UEFI Firmware	UEFI 2.3.1c-based system and firmware that supports secure boot	
21.	Drivers & Accessories	Required drivers and accessories to be provided	
22.	Warranty and Support	03 Years, Comprehensive, On-Site Support Warranty including part replacement/repairs within 4 hours of reporting, and Software support for updates, upgrades, patches, and bug fixes for supplied s/w from OEM 24 x 7	



		x 365 days. SSD drives should be covered for irrespective of read/writes on them. In case of Disk failure, the faulty disk will be maintained /destroyed by Canara Bank. Proactive storage monitoring & support from OEM should be enabled. The proposed bidder will need to ensure support of product & change of components @ zero cost in case of any part becoming obsolete/EOL & EOS	
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**D. Technical Specifications of Server (2 Nos. at Bengaluru, 2 Nos. at Mumbai and 1 at Delhi):**

Sl. No.	Particulars	Detailed Configuration	Bidder's Compliance (Yes/No)
1.	Make	Bidder to specify	
2.	Model	Bidder to specify	
3.	Form Factor	2U Rack Mountable Server with Rail Kits & Screws. Bezel	
4.	Processor	<ul style="list-style-type: none"> <li>• Socket: Minimum 2</li> <li>• Type: 2nd Generation Intel Xeon Scalable Processor</li> <li>• Model: Intel® Xeon® Gold 6242 Processor</li> <li>• Quantity: Minimum 1 with Upgrade option</li> <li>• Core: 16 Per Processor Unit</li> <li>• Base Frequency: 2.80 GHz</li> <li>• Turbo Frequency: 3.90 GHz</li> <li>• Cache: Minimum 22 MB</li> </ul>	
5.	Platform Controller Hub	Intel C621 Chipset or latest/equivalent	
6.	Main Board	Suitable Intel Main Board or equivalent	
7.	Security	<ul style="list-style-type: none"> <li>• TPM 2.0 (optional)</li> <li>• Cryptographically signed firmware</li> <li>• Hardware root of trust</li> <li>• Secure Boot</li> <li>• System Lockdown</li> <li>• System Erase</li> <li>• BitLocker Drive Encryption</li> <li>• AES New Instructions</li> <li>• Trusted Execution Technology</li> </ul>	
8.	Memory	<ul style="list-style-type: none"> <li>• Module Type: DDR4 DIMM</li> <li>• Capacity: Minimum 32 GB</li> <li>• Quantity: Minimum 8</li> <li>• Speed: Minimum 2933 Mhz</li> <li>• Advanced ECC (Error Correcting Code) type or similar technology</li> <li>• Registered ECC DIMMs</li> </ul>	
9.	Raid Controller	<ul style="list-style-type: none"> <li>• Interface: PCIe 3.0</li> <li>• Data Transfer Rate: 12Gbps per lane</li> <li>• Cache: 2GB or higher</li> <li>• RAID 0, 1, 5, 10 or higher</li> <li>• Cooling: Heat sink with intelligent Fan</li> <li>• Management: Browser based Tool, CLI (Command</li> </ul>	



		<p>Line Interface- scriptable configuration tool) and API Package</p> <ul style="list-style-type: none"> <li>• SMTP Email Alert Notification</li> <li>• Alarm Buzzer</li> <li>• Storage Health Inspector</li> <li>• Automatic and configurable RAID Rebuilding Priority</li> <li>• Auto resume incomplete rebuilding after</li> <li>• Single-RAID or Multi-RAID Arrays per Controller</li> </ul>	
10.	Disks	<ul style="list-style-type: none"> <li>• Data Center SSD for Enterprise</li> <li>• Interface: 12 Gb/s SAS Dual-port</li> <li>• Capacity: 1.6TB SSD or higher capacity</li> <li>• No of Disks: 6</li> <li>• Form Factor: low profile</li> <li>• Service: Hot swappable</li> <li>• Throughput Sequential Read/Write: 900MBps/900MBps or more</li> <li>• IOPS 4K Read/Write: 100K/60K or more for each disk</li> <li>• Power Loss Protection</li> <li>• Static &amp; Dynamic Wear Levelling</li> <li>• Reliability tracking, usage statistics, Wear Leveling, temperature, Life</li> <li>• Endurance - TBW: 6000 or more</li> <li>• Endurance - DDPD 5 Year: 3 or less (Replacement warranty if endurance level is less than 95%) during entire contract period.</li> </ul>	
11.	Ethernet	<ul style="list-style-type: none"> <li>• Two Port of 1Gbase-T On-Board LOM with supported minimum 10 meter Cat6 UTP Cable</li> <li>• Two Port of 10GbE Base T LOM with Supported minimum 30 Meter Cat6 UTP Cable</li> <li>• Dedicate One Port of 1Gbase-T management port chassis card with minimum 10 meter Cat6 UTP Cable</li> </ul>	
12.	FC HBA	1 Nos of Dual Port 32GB FC HBA PCIe with Supported SFP+ transceivers and 2 Nos of minimum 30 Meter OM3 FC cable or higher for SAN Connectivity to existing SAN Switches & Storage (FC HBA & transceivers should Support 16GBps Switch)	
13.	PCI Slots	4 No of 8x Gen3 PCIe slots per 2U compute module	
14.	Ports	<ul style="list-style-type: none"> <li>• 1 USB 3.0</li> <li>• 1 VGA</li> </ul>	
15.	Out of Band Management	<ul style="list-style-type: none"> <li>• Integrated BMC with IPMI 2.0 &amp; Redfish</li> <li>• Management of hardware and software components, Power on/off, boot process, Management log, dedicated Management ports. Should able to integrate with industry wide KVM solution.</li> </ul>	



		<ul style="list-style-type: none"> <li>Management software should provide Role Based Security through LDAP or Local and able to provide pre-failure alarms for CPU, Memory &amp; HDD by SMTP.</li> </ul>	
16.	OS Hypervisor & Certification	Windows Server 2019 Standard and its roles/features <ul style="list-style-type: none"> <li>2019 Hyper V</li> <li>Secure Boot</li> <li>TPM 2.0</li> <li>BitLocker Drive</li> </ul> Red hat Enterprise Linux 8	
17.	Power Supply	Server should be provided with Redundant hot swappable Power supplies. The Power supplies should be FCC class A certified and power cables to be IEC C13-14.	
18.	FAN	Server should have redundant fully populated Hot swap fans	
19.	Serviceability	Hot-swap/redundant fans, and PSUs; light path diagnostic LEDs	
20.	UEFI Firmware	UEFI 2.3.1c-based system and firmware that supports secure boot	
21.	Drivers & Accessories	Required drivers and accessories to be provided	
22.	Warranty and Support	03 Years, Comprehensive, On-Site Support Warranty including part replacement/repairs within 4 hours of reporting, and Software support for updates, upgrades, patches, and bug fixes for supplied s/w from OEM 24 x 7 x 365 days. SSD drives should be covered for irrespective of read/writes on them. In case of Disk failure, the faulty disk will be maintained /destroyed by Canara Bank. Proactive storage monitoring & support from OEM should be enabled. The proposed bidder will need to ensure support of product & change of components @ zero cost in case of any part becoming obsolete/EOL & EOS	

**E. Technical Specifications of Software:**

Sl. No.	Software/Operating System	Quantity	Bidder's Compliance (Yes/No)
1.	Microsoft Windows Server 2019 Standard Open License for 2 Core Pack	552	
2.	Windows Server Remote Desktop Services User CAL	300	
3.	Red hat Enterprise Linux with three year Standard Subscription	2	

**Note: Bidders must fully comply with all requirements. Non-Compliance to any one of the requirements leads to disqualification of the Bidder in Part B - Technical Proposal.**

Date:

Signature with seal

Name :

Designation :



**Amended Annexure- 14**

**Bill of Material**

**SUB: RFP for Supply, Installation, Configuration, Implementation and Maintenance of Servers and Other items in Canara Bank.**

**Ref: Your RFP 17/2020-21 dated 16/09/2020**

**Notes**

1. These details should be on the letter head of Bidder and each & every page should be signed by an Authorized Signatory with Name and Seal of the Company.
2. Please be guided by RFP terms, subsequent amendments and replies to pre-bid queries (if any) while quoting.
3. Do not change the structure of the format nor add any extra items.
4. No counter condition/assumption in response to commercial bid will be accepted. Bank has a right to reject such bid.

**Table -A**

**Price details of Servers and Other items in Canara Bank**

**[Amount in Indian Rupees]**

Sl. No.	Requirement Details	Unit Price with Three years Comprehensive onsite warranty and support (Excl. of Tax)	AMC/ATS Charge after completion of warranty period of 3 years (Excl. of tax)			Unit Price with Three Years Comprehensive Onsite Warranty and Three Years AMC/ATS after Warranty period (Excl. of tax)	Qty	Total Price with Three Years Comprehensive Onsite Warranty and Three Years AMC/ATS after Warranty period (Excl. of tax)	Tax for Column G		Total Price with Three Years Comprehensive Onsite Warranty and Three Years AMC/ATS after Warranty period (Incl. of tax)
			4 <sup>th</sup> year	5 <sup>th</sup> year	6 <sup>th</sup> year				Tax %	Tax Amt.	
		A	B	C	D	E=A+B+C+D	F	G=ExF	H	I	J=G+I
1.	Servers as per Annexure-7(A)						10				
2.	Servers as per Annexure-7(B)						24				
3.	Servers as per Annexure-7(C)						10				
4.	Servers as per Annexure-7(D)						5				
5.	Total Cost (total of column J of row 1, 2, 3 & 4)										



**Table-B**  
**Price details of Operating Systems Software**

[Amount in Indian Rupees]

Sl. No.	Item Details	Unit Price (Excl. of Tax)	Qty	Total Cost Excl. of tax)	Tax for Column C		Total Cost (Incl. of tax)
		A			D % of tax	E Tax Amt.	
1.	Microsoft Windows Server 2019 Standard Open License for 2 Core Pack		552				
2.	Windows Server Remote Desktop Services User CAL		300				
3.	Red hat Enterprise Linux with three year Standard Subscription		2				
4.	Total Cost (total of column F of row 1, 2 & 3)						

**Table - C**  
**Price details of Server Upgrade Components and Other items**

[Amount in Indian Rupees]

[Amount in Indian Rupees]											
Sl. No.	Requirement Details	Unit Price with Three years Comprehensive onsite warranty and support (Excl. of Tax)	AMC/ATS Charge after completion of warranty period of 3 years (Excl. of tax)			Unit Price with Three Years Comprehensive Onsite Warranty and Three Years AMC/ATS after Warranty period (Excl. of tax)	Qty	Total Price with Three Years Comprehensive Onsite Warranty and Three Years AMC/ATS after Warranty period (Excl. of tax)	Tax for Column G		Total Price with Three Years Comprehensive Onsite Warranty and Three Years AMC/ATS after Warranty period (Incl. of tax)
			4 <sup>th</sup> year	5 <sup>th</sup> year	6 <sup>th</sup> year				Tax %	Tax Amt.	
		A	B	C	D	E=A+B+C+D	F	G=ExF	H	I	J=G+I
1.	Upgrade of 16 Core Processor in Servers as per Annexure-7(B)						24				
2.	Upgrade of 16 Core Processor in Servers as per Annexure-7(D)						5				
3.	Upgrade of 128 GB Memory with Same Rank & DIMM Size in Servers as per Annexure-7(A)						10				
4.	Upgrade of 128 GB Memory with Same Rank & DIMM Size in Servers as per						24				

	Annexure-7(B)										
5.	Upgrade of 128 GB Memory with Same Rank & DIMM Size in Servers as per Annexure-7(D)						5				
6.	Upgrade of 1.6 TB SSD with similar or higher endurance & performance in Servers as per Annexure-7(A)						10				
7.	Upgrade of 960 GB SSD with similar or higher endurance & performance in Servers as per Annexure-7(B)						48				
8.	Upgrade of 1.6 TB SSD with similar or higher endurance & performance in Servers as per Annexure-7(D)						10				
9.	Total Cost (total of column J of row 1, 2, 3, 4, 5, 6, 7 & 8)										

**Charges mentioned in above Table-C should be valid till 6 years from the date of Reverse Auction.**

**Table-C**  
**Total Cost for 6 Years Contract Period**

		[Amount in Indian Rupees]
Sl. No.	Details	Total Cost of Ownership [inclusive of tax]
A	Total Price details of Servers & Other Items as per Table-A [Total of Column J]	
B	Total Price details of Operating Systems Software per Table-B [Total of Column F]	
C	Total Price details of Server Upgrade Components and Other items [Total of Column J]	
D	Total Cost of Ownership [Sum of A, B & C]	

**Undertaking**

- i. Bill of material is submitted on the letter head and is signed by an Authorized Signatory with Name and Seal of the Company.
- ii. We confirm that we have gone through RFP clauses, subsequent amendments and replies to pre-bid queries (if any) and abide by the same.
- iii. We have not changed the structure of the format nor added any extra items. We note that any such alternation will lead to rejection of Bid.



- iv. We agree that no counter condition/assumption in response to commercial bid will be accepted by the Bank. Bank has a right to reject such bid.
- v. We are agreeable to the payment schedule as per "Payment Terms" of the RFP.

**Date:**

**Signature with seal**

**Name :**

**Designation :**

