

| Required Minimum Specifications “Annexure 14 A – Rack Server Type A” | | Bidder's compliance (Yes / No) | Bidder's remarks |
|---|---|-----------------------------------|------------------|
| Hardware | Make & Model of Rack Server – _____ | | |
| Form Factor | 2U / 4U Rack Mountable | | |
| CPU | Intel Platinum 81xx Series Family Processors / Intel Gold 61xx Series Family Processors | | |
| CPU Frequency | Min. 2.0 GHz Clock Speed scalable to Max. 3.6 GHz Clock Speed or equivalent or higher. | | |
| Cores | Min. 4 Cores scalable to Max. 28 Cores per CPU (socket) | | |
| No. of CPU | Min. 2 (Two) scalable to Max. 4 (Four) | | |
| CPU Expandability | Capable to accommodate 4 processor | | |
| Chipset | Latest Server class compatible chipset | | |
| Cache | Min. 13.75 MB L3 Cache scalable to Max. 38.50 MB L3 Cache or equivalent or higher. | | |
| Memory | Min. 64 GB DDR4 or higher with 2400 / 2666 MT/sec | | |
| Memory Expandability | Expandable to Min. 768 GB per CPU (socket) scalable to Max. 1.5 TB | | |
| Memory Slot | Min. 12 DIMM Slots per CPU (socket) | | |
| Hard Disk Drive | Min. 300 GB scalable to Max. 1.8 TB - Hot Plug HDD SFF SAS / SSD / SATA drives. HDD with 10K or higher RPM (Make - OEM). | | |
| Hard Disk Drive Expandability | Expandable to Min. 14.4 TB | | |
| Hard Disk Drive Slot | Min. 8 Hot Plug HDD SFF SAS / SSD / SATA drive bays | | |
| Storage Controller | Integrated PCIe 3.0 based Hardware RAID Controller with Min 2 GB cache with capacitor based backup and should support RAID 0, 1, 1+0, 5 | | |
| Network Controller | Min. 2 Ethernet Card, each with Min. 4 nos. of 1 GBPS / Min. 2 nos. of 10 GBPS Network Interface Ports with required SFPs / Cables | | |
| PCI Slots | Min. 6 PCIe 3.0 Slot | | |
| HBA Card | Min. 2 FC HBA Card (8GB / 16GB / 32GB), each with Single / Dual Port FC HBA | | |
| CD / DVD Drive | Internal / External 16X DVD+/-RW with Dual Layer Write Capability | | |
| I/O Interface | Min. 2 USB 3.0 Port, Min. 1 VGA Port, Min. 1 Serial Port | | |
| Graphics | Integrated Video Standard, Video modes up to 1920 x 1200 @ 60Hz, Min. 16MB Video Memory | | |
| Power Supply & Fans | n + 1 or higher redundant hot swappable Power Supply units and n + 1 or higher redundant hot swappable Fan Modules (where n > 1) | | |
| Remote Management | System remote management should support browser based Graphical Remote Console & Virtual Power Button. | | |
| | Should be possible to manage the servers and get access to critical information about the health of the server from any remote location with just the help of a standard Web browser | | |
| | Remote boot using USB / CD / DVD Drive and should be capable to offer upgrade of software and patches from a remote client using Media / Image / Folder server power capping and historical reporting should have support for | | |

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| | multifactor authentication. | | |
| | Should be possible to remotely manage each rack server individually. | | |
| | Should support access rights for administrators for each rack server individually. | | |
| | Server should support agentless management using the out-of-band remote management port instead of OS and SNMP port on the OS. This will enable zero downtime updates. | | |
| | The server should support features which monitors and records changes in the server hardware and system configuration. | | |
| Server Management | The Systems Management software should provide Role based security. | | |
| | The Server Management Software should be of the OEM make as of the server supplier. | | |
| | Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes. | | |
| | Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components. | | |
| | Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD. | | |
| | Should support automatic event handling that allows configuring policies to notify failures via e-mail, pager, or SMS gateway or automatic execution of scripts. | | |
| | Should be able to perform comprehensive system data collection and enable users to quickly produce detailed inventory reports for managed devices. | | |
| | Should support the reports to be saved in HTML, CSV or XML format. | | |
| | Should be compatible with Banks HP Open View Tool. | | |
| Security | Boot Password, Power-on password, Serial interface control, Administrator's password, TPM 2.0, UEFI. | | |
| Compliance | Microsoft® Logo certifications, USB 3.0 Support, IEEE (specific IEEE standards depending on Ethernet adapter card(s) installed), PCIe 3.0 Compliant, TPM 2.0 Support, SSL 2.0, Active Directory v1.0, ACPI 6.1 Compliant, IPMI 2.0, Secure Digital 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP, ASHRAE A3, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) | | |
| Operating System Certification | Microsoft Window Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES) | | |
| Virtualization Software Support | VMware, Microsoft Hyper-V, Red Hat KVM | | |

| Required Minimum Specifications “Annexure 14 B – Rack Server Type B” | | Bidder's compliance (Yes / No) | Bidder's remarks |
|---|--|-----------------------------------|------------------|
| Hardware | Make & Model of Rack Server – _____ | | |
| Form Factor | 2U / 4U Rack Mountable | | |
| CPU | Intel Platinum 81xx Series Family Processors / Intel Gold 61xx Series Family Processors / Intel Silver 41xx Series Family Processors | | |
| CPU Frequency | Min. 1.8 GHz Clock Speed scalable to Max. 3.6 GHz Clock Speed or equivalent or higher. | | |
| Cores | Min. 4 Cores scalable to Max. 28 Cores per CPU (socket) | | |
| No. of CPU | Min. 1 (One) scalable to Max. 2 (Two) | | |
| CPU Expandability | Capable to accommodate 2 processor | | |
| Chipset | Latest Server class compatible chipset | | |
| Cache | Min. 8.25 MB L3 Cache scalable to Max. 38.50 MB L3 Cache or equivalent or higher. | | |
| Memory | Min. 32 GB DDR4 or higher with 2400 / 2666 MT/sec | | |
| Memory Expandability | Expandable to Min. 768 GB per CPU (socket) scalable to Max. 1.5 TB | | |
| Memory Slot | Min. 12 DIMM Slots per CPU (socket) | | |
| Hard Disk Drive | Min. 300 GB scalable to Max. 1.8 TB - Hot Plug HDD SFF SAS / SSD / SATA drives. HDD with 10K or higher RPM (Make - OEM). | | |
| Hard Disk Drive Expandability | Expandable to Min. 14.4 TB | | |
| Hard Disk Drive Slot | Min. 8 Hot Plug HDD SFF SAS / SSD / SATA drive bays | | |
| Storage Controller | Integrated PCIe 3.0 based Hardware RAID Controller with Min. 2 GB cache with capacitor based backup and should support RAID 0, 1, 1+0, 5 | | |
| Network Controller | Min. 2 Ethernet Card, each with Min. 4 nos. of 1 GBPS / Min. 2 nos. of 10 GBPS Network Interface Ports with required SFPs / Cables | | |
| PCI Slots | Min. 6 PCIe 3.0 Slot | | |
| HBA Card | Min. 2 FC HBA Card (8GB / 16GB / 32GB), each with Single / Dual Port FC HBA | | |
| CD / DVD Drive | Internal / External 16X DVD+/-RW with Dual Layer Write Capability | | |
| I/O Interface | Min. 2 USB 3.0 Port, Min. 1 VGA Port, Min. 1 Serial Port | | |
| Graphics | Integrated Video Standard, Video modes up to 1920 x 1200 @ 60Hz, Min. 16MB Video Memory | | |
| Power Supply & Fans | n + 1 or higher redundant hot swappable Power Supply units and n + 1 or higher redundant hot swappable Fan Modules (where n > 1) | | |
| Remote Management | System remote management should support browser based Graphical Remote Console & Virtual Power Button. | | |
| | Should be possible to manage the servers and get access to critical information about the health of the server from any remote location with just the help of a standard Web browser | | |
| | Remote boot using USB / CD / DVD Drive and should be capable to offer upgrade of software and patches from a remote client using Media / Image / Folder server power | | |

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| | capping and historical reporting should have support for multifactor authentication. | | |
| | Should be possible to remotely manage each rack server individually. | | |
| | Should support access rights for administrators for each rack server individually. | | |
| | Server should support agentless management using the out-of-band remote management port instead of OS and SNMP port on the OS. This will enable zero downtime updates. | | |
| | The server should support features which monitors and records changes in the server hardware and system configuration. | | |
| Server Management | The Systems Management software should provide Role based security. | | |
| | The Server Management Software should be of the OEM make as of the server supplier. | | |
| | Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes. | | |
| | Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components. | | |
| | Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD. | | |
| | Should support automatic event handling that allows configuring policies to notify failures via e-mail, pager, or SMS gateway or automatic execution of scripts. | | |
| | Should be able to perform comprehensive system data collection and enable users to quickly produce detailed inventory reports for managed devices. | | |
| | Should support the reports to be saved in HTML, CSV or XML format. | | |
| | Should be compatible with Banks HP Open View Tool. | | |
| Security | Boot Password, Power-on password, Serial interface control, Administrator's password, TPM 2.0, UEFI. | | |
| Compliance | Microsoft® Logo certifications, USB 3.0 Support, IEEE (specific IEEE standards depending on Ethernet adapter card(s) installed), PCIe 3.0 Compliant, TPM 2.0 Support, SSL 2.0, Active Directory v1.0, ACPI 6.1 Compliant, IPMI 2.0, Secure Digital 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP, ASHRAE A3, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) | | |
| Operating System Certification | Microsoft Window Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES) | | |
| Virtualization Software Support | VMware, Microsoft Hyper-V, Red Hat KVM | | |

| Required Minimum Specifications "Annexure 14 C – Blade Server Type A" | | Bidder's compliance (Yes / No) | Bidder's remarks |
|--|---|-----------------------------------|------------------|
| Hardware | Make & Model of Blade Server – _____ | | |
| Form Factor | Full / Half Height Blade | | |
| CPU | Intel Platinum 81xx Series Family Processors / Intel Gold 61xx Series Family Processors | | |
| CPU Frequency | Min. 2.0 GHz Clock Speed scalable to Max. 3.6 GHz Clock Speed or equivalent or higher. | | |
| Cores | Min. 4 Cores scalable to Max. 28 Cores per CPU (socket) | | |
| No. of CPU | Min. 2 (Two) scalable to Max. 4 (Four) | | |
| CPU Expandability | Capable to accommodate 4 processor | | |
| Chipset | Latest Server class compatible chipset | | |
| Cache | Min. 13.75 MB L3 Cache scalable to Max. 38.50 MB L3 Cache or equivalent or higher. | | |
| Memory | Min. 64 GB DDR4 or higher with 2400 / 2666 MT/sec | | |
| Memory Expandability | Expandable to Min. 768 GB per CPU (socket) scalable to Max. 1.5 TB | | |
| Memory Slot | Min. 12 DIMM Slots per CPU (socket) | | |
| Hard Disk Drive | Min. 300 GB scalable to Max. 1.8 TB - Hot Plug HDD SFF SAS / SSD / SATA drives. HDD with 10K or higher RPM (Make - OEM). | | |
| Hard Disk Drive Expandability | Expandable to Min. 3.6 TB | | |
| Hard Disk Drive Slot | Min. 2 Hot Plug HDD SFF SAS / SSD / SATA drive bays | | |
| Storage Controller | Integrated PCIe 3.0 based Hardware RAID Controller with Min 1 GB cache with capacitor based backup and should support RAID 0, 1, 1+0. | | |
| Network Controller & HBA Card | The Blade should offer 40G (4 x 10G or 2 x 20G) converged FCoE cards or higher with NIC partition of min 3 x Ethernet and 1 X FC Partition | | |
| PCI Slots | Min. 2 PCIe 3.0 Slot | | |
| I/O Interface | Min. 1 USB Port, Min. 1 I/O Port | | |
| Graphics | Integrated Video Controller, Video modes up to 1920 x 1200, Min. 16MB Video Memory | | |
| Remote Management | System remote management should support browser based Graphical Remote Console & Virtual Power Button. | | |
| | Should be possible to manage the servers and get access to critical information about the health of the server from any remote location with just the help of a standard Web browser | | |
| | Remote boot using USB / CD / DVD Drive and should be capable to offer upgrade of software and patches from a remote client using Media / Image / Folder server power capping and historical reporting should have support for multifactor authentication. | | |
| | Should be possible to remotely manage each rack server individually. | | |
| | Should support access rights for administrators for each rack server individually. | | |
| | Server should support agentless management using the out-of-band remote management port instead of OS and | | |

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| | SNMP port on the OS. This will enable zero downtime updates. | | |
| | The server should support features which monitors and records changes in the server hardware and system configuration. | | |
| Server Management | The Systems Management software should provide Role based security. | | |
| | The Server Management Software should be of the OEM make as of the server supplier. | | |
| | Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes. | | |
| | Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components. | | |
| | Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD. | | |
| | Should support automatic event handling that allows configuring policies to notify failures via e-mail, pager, or SMS gateway or automatic execution of scripts. | | |
| | Should be able to perform comprehensive system data collection and enable users to quickly produce detailed inventory reports for managed devices. | | |
| | Should support the reports to be saved in HTML, CSV or XML format. | | |
| | Should be compatible with Banks HP Open View Tool. | | |
| Security | Boot Password, Power-on password, Serial interface control, Administrator's password, TPM 2.0, UEFI. | | |
| Compliance | Microsoft® Logo certifications, USB 3.0 Support, IEEE (specific IEEE standards depending on Ethernet adapter card(s) installed), PCIe 3.0 Compliant, TPM 2.0 Support, SSL 2.0, Active Directory v1.0, ACPI 6.1 Compliant, IPMI 2.0, Secure Digital 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP, ASHRAE A3, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) | | |
| Operating System Certification | Microsoft Window Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES) | | |
| Virtualization Software Support | VMware, Microsoft Hyper-V, Red Hat KVM | | |

Annexure 14 - Technical Specifications for RFP – Empanelment of vendors for Supply, Installation & Maintenance of Windows based Servers and its components for FY 2018-2021.
RFP No: BCC:IT:PROC:110:06
Dated: 25th January 2018

| Required Minimum Specifications "Annexure 14 D – Blade Server Type B" | | Bidder's compliance (Yes / No) | Bidder's remarks |
|--|---|-----------------------------------|------------------|
| Hardware | Make & Model of Blade Server – _____ | | |
| Form Factor | Full / Half Height Blade | | |
| CPU | Intel Platinum 81xx Series Family Processors / Intel Gold 61xx Series Family Processors / Intel Silver 41xx Series Family Processors | | |
| CPU Frequency | Min. 1.8 GHz Clock Speed scalable to Max. 3.6 GHz Clock Speed or equivalent or higher. | | |
| Cores | Min. 4 Cores scalable to Max. 26 Cores per CPU (socket) | | |
| No. of CPU | Min. 1 (One) scalable to Max. 2 (Two) | | |
| CPU Expandability | Capable to accommodate 2 processor | | |
| Chipset | Latest Server class compatible chipset | | |
| Cache | Min. 8.25 MB L3 Cache scalable to Max. 35.75 MB L3 Cache or equivalent or higher. | | |
| Memory | Min. 32 GB DDR4 or higher with 2400 / 2666 MT/sec | | |
| Memory Expandability | Expandable to Min. 768 GB per CPU (socket) scalable to Max. 1.5 TB | | |
| Memory Slot | Min. 12 DIMM Slots per CPU (socket) | | |
| Hard Disk Drive | Min. 300 GB scalable to Max. 1.8 TB - Hot Plug HDD SFF SAS / SSD / SATA drives. HDD with 10K or higher RPM (Make - OEM). | | |
| Hard Disk Drive Expandability | Expandable to Min. 3.6 TB | | |
| Hard Disk Drive Slot | Min. 2 Hot Plug HDD SFF SAS / SSD / SATA drive bays | | |
| Storage Controller | Integrated PCIe 3.0 based Hardware RAID Controller with Min 1 GB cache with capacitor based backup and should support RAID 0, 1, 1+0. | | |
| Network Controller & HBA Card | The Blade should offer 40G (4 x 10G or 2 x 20G) converged FCoE cards or higher with NIC partition of min 3 x Ethernet and 1 X FC Partition | | |
| PCI Slots | Min. 2 PCIe 3.0 Slot | | |
| I/O Interface | Min. 1 USB Port, Min. 1 I/O Port | | |
| Graphics | Integrated Video Controller, Video modes up to 1920 x 1200, Min. 16MB Video Memory | | |
| Remote Management | System remote management should support browser based Graphical Remote Console & Virtual Power Button. | | |
| | Should be possible to manage the servers and get access to critical information about the health of the server from any remote location with just the help of a standard Web browser | | |
| | Remote boot using USB / CD / DVD Drive and should be capable to offer upgrade of software and patches from a remote client using Media / Image / Folder server power capping and historical reporting should have support for multifactor authentication. | | |
| | Should be possible to remotely manage each rack server individually. | | |
| | Should support access rights for administrators for each rack server individually. | | |
| | Server should support agentless management using the | | |

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| | out-of-band remote management port instead of OS and SNMP port on the OS. This will enable zero downtime updates. | | |
| | The server should support features which monitors and records changes in the server hardware and system configuration. | | |
| Server Management | The Systems Management software should provide Role based security. | | |
| | The Server Management Software should be of the OEM make as of the server supplier. | | |
| | Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes. | | |
| | Should help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components. | | |
| | Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD. | | |
| | Should support automatic event handling that allows configuring policies to notify failures via e-mail, pager, or SMS gateway or automatic execution of scripts. | | |
| | Should be able to perform comprehensive system data collection and enable users to quickly produce detailed inventory reports for managed devices. | | |
| | Should support the reports to be saved in HTML, CSV or XML format. | | |
| | Should be compatible with Banks HP Open View Tool. | | |
| Security | Boot Password, Power-on password, Serial interface control, Administrator's password, TPM 2.0, UEFI. | | |
| Compliance | Microsoft® Logo certifications, USB 3.0 Support, IEEE (specific IEEE standards depending on Ethernet adapter card(s) installed), PCIe 3.0 Compliant, TPM 2.0 Support, SSL 2.0, Active Directory v1.0, ACPI 6.1 Compliant, IPMI 2.0, Secure Digital 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP, ASHRAE A3, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) | | |
| Operating System Certification | Microsoft Window Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES) | | |
| Virtualization Software Support | VMware, Microsoft Hyper-V, Red Hat KVM | | |

Annexure 14 - Technical Specifications for RFP – Empanelment of vendors for Supply, Installation & Maintenance of Windows based Servers and its components for FY 2018-2021.
RFP No: BCC:IT:PROC:110:06
Dated: 25th January 2018

| Required Minimum Specifications “Annexure 14 E – Blade Enclosure with Fabric Interconnect (if applicable)” | | Bidder's compliance (Yes / No) | Bidder's remarks |
|---|--|-----------------------------------|------------------|
| Hardware | Make & Model of Blade Enclosure – _____ | | |
| | Make & Model of Other Hardware (if any) – _____ | | |
| Form Factor | Min. 8 Blade Servers of Half Height Blade Server | | |
| Blade Chassis | Should support for full height and half height blades in the same enclosure, occupying a max of 10U rack height. | | |
| | Same enclosure should support Intel Platinum, Gold, Silver or equivalent blade servers. | | |
| | Should support Hot Pluggable & Redundant Management Modules with onboard KVM functionality. | | |
| | Should provide a highly reliable and high performance mid-plane / back-plane design in the blade enclosure. | | |
| | Should be able to accommodate the blade servers of specifications mentioned in the proposed Blade Encl. | | |
| | Support simultaneous remote access for different servers in the enclosure. | | |
| Interconnect | Should support simultaneous housing of FCoE (Converged Switch), Ethernet, FC interconnect fabrics offering Hot Pluggable & Redundancy as a feature. The chassis switch should provide the following uplinks: <ul style="list-style-type: none"> • 1 x 10G/20G SFP plus Ethernet (redundant) per Blade Server (2 Socket). • 2 x 10G/20G SFP plus Ethernet (redundant) per Blade Server (4 Socket). • 1 x 8G/16G FC Connect (redundant) per Blade Server (2 Socket). • 2 x 8G/16G FC Connect (redundant) per Blade Server (4 Socket). | | |
| Power Supply | The enclosure should be populated fully with power supplies and should support N + N redundancy configuration, where N is greater than 1. | | |
| Cooling | Each blade enclosure should have a cooling subsystem consisting of redundant hot pluggable fans or blowers enabled with technologies for improved power consumption and acoustics | | |
| System Software | Management / Controlling Soft have to be from the OEM. | | |
| Remote Management | Must provide a remote management functionality to operate the server in both in-band and out-of-band. Must be part of the server without the need to install any additional hardware or software. | | |
| | Must have a real time Virtual KVM functionality and be able to perform a remote Power sequence. | | |
| | Must have the ability to capture the video sequence of the last failure and the boot sequence and also playback the video capture or equivalent technology. | | |
| | Must have the ability for multiple administrators across remote locations to collaborate on the remote session in a server with multiple sessions even in server powered OFF mode. | | |
| Power Management | Must be able to show the actual power usage and actual thermal measurement data of the servers. | | |
| High Availability | 100% High Availability should be provided for LAN Switching and SAN Switching | | |