Osmania University
University with Potential for Excellence [UPE]

TENDER DOCUMENT FOR SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE

TENDER DOCUMENT NO:147 /DIS/PR/2017

TENDER FOR DESIGN, ENGINEER, SUPPLY/MANUFACTURE, TEST, ERECT, INSTALL, CONNECT, COMMISSION AND SITE TEST THE EQUIPMENT/SUBSYSTEMS/SYSTEMS FOR SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE

at

CENTRAL FACILITIES FOR RESEARCH & DEVELOPMENT

OSMANIA UNIVERSITY CAMPUS
HYDERABAD – 500 007
TELANGANA STATE

TENDER DOCUMENT FOR SETTING UP SMART DATA CENTRE & IT INFRASTRUCTURE

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OSMANIA UNIVERSITY,Administrative Building, Osmania University Campus,
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TENDER DOCUMENT FOR SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE

(TO BE SUBMITTED ALONG WITH TECHNICAL BID)

TENDER DOCUMENT NO: 147/DIS/PR/2017 Dated: 15-02-2017

U N D E R T A K I N G

To
The Registrar,
Osmania University,
Hyderabad- 500 007.

We the undersigned (herein after called as Tenderer/Vendors/Suppliers) hereby offer for SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE as per specifications, site & existing Infrastructure against which we have quoted our rates and for which this tender may be accepted at the rates stated therein and subject to the terms &conditions set forth for such items as may be ordered by the Registrar, Osmania University or Officer acting on his behalf.

Date this _____ Day of_____

Signature of Tenderer _____

Address_____

_____

_____

Seal of the Tenderer_____

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TENDER DOCUMENT FOR SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE

TENDER NOTICE

TENDER DOCUMENT NO: 147/DIS/PR/2017 Dated:15-02-2017

Sealed tenders are invited under two bid system(Technical bid and Financial bid) from Vendors/manufacturers/ suppliers/ dealers for "Design, Engineer, Supply/Manufacture, Test, Erect, Install, Connect, Commission and Site Test the Equipment/Subsystems/Systems for Setting Up DATA CENTRE & IT INFRASTRUCTURE at CENTRAL FACILITIES FOR RESEARCH & DEVELOPMENT(CFRD), Osmania University, Hyderabad."

Sl. No.	Particulars	Details
1	Tender Document No	147/DIS/PR/2017 Dated:15-02-2017
2	Name of the work	TENDER FOR DESIGN, ENGINEER, SUPPLY/MANUFACTURE, TEST, ERECT, INSTALL, CONNECT, COMMISSION AND SITE TEST THE ELECTRICAL DISTRIBUTION SYSTEM FOR SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE at OSMANIA UNIVERSITY, HYDERABAD, TELANGANA.
3	Date of issue of tender document	From 15-02-2017 to 06-03-2017 need to be downloaded from www.osmania.ac.in (document will not be supplied by the O.U)
4	Last Date, Time & Venue of Submission	On 06-03-2017 latest by 04.00 P.M at O/o the Director (Infrastructure) Room No.108, Administrative Building, Osmania University, Hyderabad. Email:director_is@osmania.ac.in
5	Cost of Tender Document	Rs.20,000/-(Rupees Twenty Thousand only) in the form of non-refundable Demand Draft drawn in favour of The Registrar, Osmania University obtained from any Nationalized Bank payable at Hyderabad.

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6	Earnest Money Deposit	Rs. 10,00,000 (Rupees Ten Lakhs only)in the form of Demand Draft drawn in favour of The Registrar, Osmania University obtained from any Nationalized Bank payable at Hyderabad. The E.M.D shall be refunded on furnishing the Bank Guarantee towards Security Deposit (as per Security Deposit) after Commissioning of work satisfactorily.
7	Period of Completion	3 months (90 days) from the date of award.
8	Technical & Commercial Bid Opening Date and Time	On 06-03-2017 at 04.30 P.M at Committee Room, Administrative Building, Osmania University, Hyderabad. *In case of unavoidable circumstances, if the tenders are not opened on the last day of submission, the subsequent date will be intimated to the bidding firms.
9	Security Deposit	10 % of the total contract value in the form of Bank Guarantee in favour of The Registrar, Osmania University, payable at HYDERABAD from any Nationalized Bank, after award of the contract.

Note:
1. The bidder shall furnish two sealed covers separately, one for Technical Bid and another for Commercial Bid in one Big Sealed Envelope super scribed "TENDER DOCUMENT FOR SETTING UP SMART DATA CENTRE & IT INFRASTRUCTURE". All relevant required documents along with evidences and Demand Drafts for cost Tender Document and E.M.D are to be inserted in Technical bid (Cover No.1).

2. Commercial bid (Cover no.2) will be opened of those bidders who would duly qualify in the Technical bid.

   The Registrar, O.U, Hyderabad reserves the right to accept / reject any or all the tenders without assigning any reason thereafter.

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<div align="center">

SITE VISIT REPORT LETTER
(To be submitted on letter head of tenderer)

</div>

Date: --------------

To,
The Registrar,
Osmania University,
Hyderabad – 500 007.

Sub: Tender Document for setting up Data Centre & IT Infrastructure – Reg.

Ref.: TENDER DOCUMENT NO: 147/DIS/PR/2017 Dated:15-02-2017

Sir,

This has reference to above referred tender for SETTING UP SMART DATA CENTRE & IT INFRASTRUCTURE, I / We hereby declare that we have visited O.U. site. I / We made ourselves acquainted with site conditions & existing Infrastructure. I/ We verified all details required to execute the projects. I/ We have no problems in undertaking the project and complete them in the given time period.

Thanking you
Yours faithfully,

(Signature of Tenderer)

Name of Tenderer ----------------------

Designation -------------------------------
Seal:

Signature of O.U. Authorized officer
Seal: ....
Date: ....

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DECLARATION
FOR SETTING UP SMART DATA CENTRE & IT INFRASTRUCTURE AT O.U.
(To be submitted on Rs.100/- stamp paper)

I / We, hereby declare that I / We have made thoroughly conversant with the site, existing infrastructure & building structural conditions, local conditions regarding all materials and Labour of which I / we have based my / our rates of this work. The specifications, conditions and lead of materials on this work have been carefully studied and understood by me / us before submitting this Tender. I / We undertake to use only the best materials with all standards and codes.

The systems will be provided as per the specifications of O.U. We also hereby committed that if any changes in the specifications of the systems while execution of the work, the same will be incorporated in the present Tender project. We hereby agree that the work will be executed within the cost of Tender mentioned in the commercial bid and there will be no escalation in cost for any reason thereof. We also agree that if we fail to complete the work and drop the work in middle, Osmania University, Hyderabad shall have right to recover the full amount from us. I / We shall accept any amendments made by O.U. from time to time during total project completion period including Comprehensive Warranty and O & M period of 5 years.

I / We am/are also committed that we shall complete the work within stipulated time period specified in the work order for any work assigned by Order Issuing Organization. We will not ask for any further time extension.

I / We am / are bound to work as per Tender and work Order issued by O.U. for this work with 3 years O & M. In case of failure of the same, we shall be responsible for any loss and for the action taken by competent Authority of O.U. resulting to ban to work and black-listing.

I / We shall comply with the provision of Contract Labour. (Regulation and Abolition) Act 1970, Minimum Wages Act.1948, Payment of Wages Act.1963, Workmen's Compensation Act. 1961, the Contract Labour (Regulation and Abolition) Act, 1979 and all other related Acts and any modification thereof or any law relating thereto and rules made there under from time to time. O.U. shall not be responsible in this regard.

I / We shall be wholly responsible for any accident or any unusual/ unexpected circumstances held during the execution of work & also during the Comprehensive Warranty and O & M period of 5 years.

(Signature of Tenderer)

Date: Name & Designation:
Place :   Seal :

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TENDER DOCUMENT FOR SETTING UP SMART DATA CENTRE & IT INFRASTRUCTURE
SPECIAL CONDITIONS & ELIGIBILITY CRITERIA
(Supporting documents need to be submitted along with Tender document)

1) Name of the Work: Design, Engineer, Supply/Manufacture, Test, Erect, Install, Connect, Commission and Site Test the Equipment/Subsystems/Systems for Setting Up SMART DATA CENTRE & IT INFRASTRUCTURE at Central Facilities for Research & Development, Osmania University, Hyderabad.

a) The firm should have registered & they should have local service center in Hyderabad to carry out the O&M and Comprehensive Warranty.

b) The firm must have valid STCC/ VAT clearance certificate. (Pl. attaches copy of Valid STCC/ VAT clearance certificate).

c) The bidder must have ISO certification.

d) The firm must have a minimum of Rs. 10.00 Crores annual Turnover during the last (3) financial years ending 2015-16 (ie., 2013-2014, 2014-15 & 2015-16) shall only be eligible to participate in the tenders.

e) The firm should furnish copies of I.T. returns for the years 2013-14, 2014-15 and 2015-16.

f) Copies of PAN/ TAN shall be submitted.

g) The firm must provide (05) Five Years Onsite Comprehensive warranty for the Complete hardware and Data center equipment.

h) The firm has to provide two onsite engineers for (05) five years 24/7 as a part of onsite support for smart datacenter and IT hardware.

i) All the equipment must be compatible with Indian electrical standards and Codes.

j) The firm must have experience in building at least ONE data center with IT Infrastructure in the last three years, value of each Data Centre should be Minimum Rs.1,00,00,000/- (Rupees One Crore Only) or above with Documentary evidence (Order copies & work completion Certificate), Preferable Government / Public Sector Units(PSU).

k) The firm should have executed/installed/supplied Computers (Computers device and Storage) worth not less than Rs.1,00,00,000/- (Rupees One Crore Only) in every year for the last three (3) years.

l) The firm must provide letters from respective OEM that the offered solution is certified and compatible and support will be available with spare parts and accessories for minimum of 5 years from the date of installation.

m) The firm has to quote both data centre and IT Infrastructure (Storage) as per mentioned specifications for entire solution, partial offers are not acceptable.

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n) The firm must have adequate capacity to Design, Engineer, Supply/ Manufacture, Test, Erect, Install, Connect, Commission and Site Test the Equipment/Subsystems/Systems within the given time schedule. (Please furnish a brief write-up, backed with adequate data, explaining the available capacity and experience (both technical and commercial) for the Manufacture and supply of the required systems and equipment within the specified time of completion after meeting all their current commitments. The firm who is having experience in building Data Center and supplying of servers and storage is eligible to participate in the tender.

o) The firm should provide the list of clients along with P.O.

p) The firm should be an authorized partner and service provider for the offered servers, storage and switch with documentary evidence.

q) Only Eligible Tenderers should quote PART-A and PART-B

r) All above criteria shall be followed strictly

SUBMISSION OF TENDER:
 SEALING AND MARKING OF TENDER

The tender must be complete in all technical and commercial aspect and should contain requisite certificates, drawings, informative literature etc. as required for the project.

First sealed envelope (Part-I) should contain Technical Bid only - It should be superscribed "**Setting up SMART DATA CENTER & IT Infrastructure at Central Facilities for Research & Development, O.U**. All the relevant documents mentioned in the tender document need to be enclosed along with D.Ds for EMD and Tender Cost.

The complete tender document in original (excluding commercial bid) downloaded from the website should be submitted by the tenderer in the first envelope (Part- I) after furnishing all the required information on relevant pages. Each page of the tender document should be signed & stamped. Tenders with any type of change or modification in any of the terms/ conditions of this document shall be rejected. If necessary, additional papers may be attached by the tenderer to furnish/ submit the required information.

Second sealed envelope (Part-II) should contain Commercial Bid only. It should be superscribed "**Setting up SMART DATA CENTER & IT Infrastructure at Central Facilities for Research & Development, O.U.**" The tenderer should submit his duly signed and stamped & total priced on the commercial bid format attached as per BOQ (Bills of Quantities), after writing the price against the items shown elsewhere in the tender document.

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PROCEDURE FOR OPENING THE BIDS:
The procedure of opening of the bid shall be as under:

1.   TECHNICAL BID shall be opened at the time & date mentioned in the bid notice by O.U. representatives in the presence of bidders, who choose to be present.

2.   COMMERCIAL BID of only those bidders shall be opened who qualify in the Technical evaluation.

3.   Any clarification on the technical specification and commercial terms and Conditions may be clarified in writing from O.U.

4.   Deviation of any commercial terms and conditions and technical specification shall   not be entertained under any circumstances.

EVALUATION OF OFFER:

1.   The bid of any bidder who has not complied with one or more of the conditions will be summarily rejected.
2.   Conditional bids will also be summarily rejected.
3 .   Subsequently, the technical bids will be evaluated by the Expert Technical Committee of the University on the basis of technical bid and technical specifications. The authority for the acceptance of the tender rests with the O.U. The tenders received will be evaluated by O.U. Committee to ascertain the best acceptable tender in the interest of O.U.
4.   Commercial bids of only the technically qualified bidders will be opened for evaluation in the presence of qualified bidders. However, O.U. shall not be bound to accept the lowest or any other tender or to assign any reason for non-acceptance or rejection of a tender.   O.U. reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender document.

I/we have carefully read & understood the above terms & conditions of the bid & agree to abide by them.

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GENERAL TERMS & CONDITIONS:

1   Rate: The offer should indicate the total cost for SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE O&M Charges and taxes & duties separately. The total cost must be inclusive of packing, forwarding, loading & unloading charges, cost of insurance and transportation for destination where the system will be installed as per the work order issued by O.U.

2   Sales Tax & Duties etc.: All Taxes and duties as prescribed both under Central and State Government sales tax rules would be applicable.

3   Security Deposit (SD) on Performance Guarantee:

3.1   The successful bidder shall furnish Security deposit at 10% of the total contract value in the form of Bank Guarantee in favour of The Registrar, Osmania University, payable at HYDERABAD from any Nationalized Bank, over a period of 5 years.

3.2   Failure to comply with the terms of security deposit shall result into cancellation of work order without any further reference to the tenderer and the EMD shall be forfeited.

3.3   The security deposit shall be liable to be forfeited wholly or partly at the sole discretion of the O.U. If the tenderer either fails to execute the work of above projects or fails to fulfill the contractual obligations or fails to settle in full his dues to the O.U.

3.4   In case of premature termination of the contract, the SD will be forfeited and the O.U. will is at liberty to recover the loss suffered by it & if additional cost is to be paid, the same shall be recovered from the tenderer.

3.5   The O.U. is empowered to recover from the SD for any sum due and for any other sum that may be fixed by the O.U. as being the amount or loss or losses or damages suffered by it due to delay in performance and / or non-performance and / or partial performance of any of the conditions of the contract and / or non-performance of guarantee obligations. The Security Deposit will be released on the successful completion of warranty period of five (5) years.

4   Program Execution Schedule:

4.1   Delivery of materials at site: A maximum period of 30 days from the date of handing over the site to the vendor for the purpose of the project.

4.2   Completion of the project: 120 days (which includes 30 days from the date of handing over the site) Work to start within 30 days including supply of all material as per BOQ. The Data Centre should be operational in all aspect, which should be certified by the Committee for SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE. The dates are extendable by another 10 days under exceptional circumstances.

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INSTRUCTIONS TO BIDDERS:

5.1   Payment of EMD (Earnest Money Deposit): The EMD shall be in the form of Demand Draft drawn at nationalized bank issued in favour of Registrar, Osmania University payable at Hyderabad.

5.2   The Demand Drafts towards EMD and Cost of Tender Schedule shall be enclosed along with the Tender documents in Technical Bid.

5.2   Tender without requisite amount of EMD and Cost of Tender Schedule (TC) shall be out rightly rejected. No tenderer is exempted from EMD/ TC. Correspondence on request from any tenderer on exemption of EMD / TC will not be entertained.

5.3   Validity period: The Tender shall remain valid for the period of six months from the date of submission of Tender document.

5.4   All the information furnished and document produced with the Tender shall be in English language only. The Tender notice and Tender document shall form a part of contract agreement.

5.5   The conditional tenders will be rejected out rightly.

5.6   Registrar, O.U. reserves the right to reject/ accept any or all Tender without assigning any reason thereof.

5.7   Period of completion of work 3 months (90 days) from the date of issue of work order.

5.8   Bidders must submit their bids for all items shown in the tender document.

5.9   Prices quoted must be firm and fixed. No price variation / escalation shall be allowed. Taxes applicable shall be quoted separately.

5.10   Valid TIN / VAT/ Sales tax clearance certificate duly attested must be submitted along with the bid.

5.11   Deviations in terms and conditions, Specification of material, Inspection clause etc. will not be accepted under normal conditions.

5.12   Since timely execution of works is of paramount importance, requests for extension of time shall not be ordinarily entertained.

5.13   Canvassing in any manner shall not be entertained and will be viewed seriously leading to rejection of the bid.

5.14   All pages of the tender documents must be signed & sealed by the authorized person on behalf of the bidders.

5.15 Penalty and termination of contract:
        The systems shall be supplied, installed and commissioned within the scheduled time. If the supplier fails to adhere to the schedule, O.U shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damages a sum equivalent to0.2 % (of the total contract

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value for every Calendar day of delay)of the delivery price of the delayed goods
or unperformed services for each day of delay until actual delivery or installation/commissioning up to a maximum deduction of 10%of the contract price for delayed goods or installation and commissioning. Once the maximum
penalty is reached (50 days of delay) O.U may consider termination of the contract and forfeit the security deposit without prejudice to the other remedies of the contract.

However, Competent Authority, O.U, Hyderabad may at its own discretion allow reasonable time extension upon written application of the supplying firm. If the delay is considered intentional or due to negligence of the vendor extension can be allowed with imposition of penalty. If the delay is considered to be genuine time extension can be allowed without imposition of penalty.

5.16 Force Majeure:
The Vendor shall not be charged with liquidated damages nor shall his security for performance is forfeited when failure of the supplier in making delivery is due to any event beyond the control of the supplier and could not have been foreseen, prevented or avoided by a prudent person. These include, but are not restricted to acts of God, acts of public enemy, acts of Government, fires, floods, epidemics, strikes, freights, embargoes and unusually severe weather.

5.17 Payment Schedule:
Payments will be released only on satisfactory acceptance of the deliverables for each Task as per the following schedule:

S.No.	Payment Schedule	Fee Payable	Remarks
1	Payment on complete Delivery of Equipment	30% of the cost of equipment payable upon the complete delivery of the equipment and related accessories supplied at the site	Payable upon completed Delivery of equipments at the site-on Certification of the Competent Authority, O.U.
2	Payment on completed installation of the delivered Equipment	30% of the cost of equipment payable upon the completed installation of the delivered equipment and related accessories supplied at the site	Payable upon completed installation of equipments at the site-on Certification of the Competent Authority, O.U.
3	Payment on commissioning & Acceptance	Remaining cost of the work order	Payable upon site acceptance including total equipment commissioning of the basic infrastructure of the data centre site by O.U and on Certification of the Competent Authority, O.U.

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5.18   Limitation of Liability: O.U., will in no case be responsible for any accident fatal or non-fatal, caused to any worker or outsider in course of transport or execution of work. All the expenditure including treatment or compensation will be entirely borne by the Executants. The Executants shall also be responsible for any claims of the workers including PF, Gratuity, ESI & other legal obligations.

5.19   Dispute: All disputes or differences whatsoever arising between the parties relating to the contract shall be settled by the arbitration in accordance with the rules of Indian Council of Arbitration and the contract made in pursuance thereof shall be binding on the parties. The venue of arbitration shall be at Hyderabad, and the appointment of the arbitrator on behalf of the University will be made by the Vice-Chancellor, Osmania University, Hyderabad- 500007.

I/we have carefully read & understood the above terms & conditions of the bid & agree to abide by them.

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PART-A: SMART DATA CENTER

Technical specification for Integrated Smart Data centre

Osmania University Hyderabad would like to establish Integrated Smart Data Centre which compiles with the below scope:

6. SCOPE:

6.1 This specification covers intelligent integrated/inbuilt infrastructure, standalone system design, engineering, manufacture, assembly, testing at manufacturer's works, supply, delivery at site, unloading, handling, proper storage at site, erection, testing and commissioning at site of complete infrastructure for the proposed Data Centre to be installed by Osmania University at Hyderabad as detailed in the specification, complete with all accessories required for efficient and trouble free operations and the Detailed Specification of the Intelligent Integrated Data Center shall adherence of TIA-942

6.2 The detail specifications of the intelligent integrated/inbuilt infrastructure, standalone system shall be in adherence to data center guide lines thus shall be composed of multiple active power and cooling distribution paths, but only one path active. Shall have redundant components.

6.3 The Intelligent Integrated Infrastructure essentially includes internal redundant or backup power supplies, environmental controls (e.g., precision air conditioning, fire suppression, smoke detection, Water leak detection, humidity sensor etc), security devices etc. Critical systems like UPS (N+N) and Precision Air-conditioning system will have N+1 topology respectively

6.4 The Intelligent integrated infrastructure shall be having foot print approximately 24Sq.Mtr which shall have min 227 U usable space (6 racks), to accommodate IT and network equipment & devices. This footprint should include separate panel housing fire suppression and power distribution preferably.

6.5 The Intelligent integrated infrastructure would provide many functionality and some of the key functionalities are Cold Contained Front Aisle & Rear Contained Hot Aisle, insulation, remote management and single point of service.

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7   The Intelligent integrated Infrastructure shall have following components:-

7.1   Precision Air conditioner with variable capacity cooling, heater and humidifier to cater IT load approximately 70 KW and in N+1 topology for total 6 racks.

7.2   2 x 40 KVA – 2 sets Rack mountable UPS with P.F. up to 0.9 & efficiency more than 92% ~94% - 4 numbers. 60 min battery back-up on full load.

8.0   Novec 1230 Gas based fire suppression system as per NFPA guidelines. Fire suppressions should be limited only to the contained volume of modular Data center. Fire suppression gas should have to be housed in separate cabinet inside the Integrated Data Centre

8.1   Smoke detectors, water leaks detection system, temperature& humidity sensor, door sensor, and alarm beacon.

8.2   42 U racks of dimension 600 mm x 1000 mm 6 numbers.

8.3   Monitoring system – capable for Email alerts, SMS Alerts and Alarm should be Placed outside the Data Centre

8.4   Biometric access control system which should be control by access control panel.

8.5   32A Vertical Rack mount PDU of type IEC C13 & IEC C19 combination, Each rack shall have two such PDU's.

8.6   Electrical system with essential MCB/MCCB.

8.7   Intelligent integrated infrastructure would have provision to add an extra rack in future. It should be flexible, adaptable, controllable infrastructure.

8.8   All Critical components Like UPS, PAC environment control system should be from a single OEM make and should have manufacturing units in India

8.9   OEM should have their Head/ Branch office and service centers in Hyderabad.

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9.0   DETAILED SPECS OF COMPONENTS

9.1 Uninterrupted Power Supply (UPS) System

Configuration: 2 x 40KVA – 2 Sets.

General Description:
Supply, install, test and commissioning of two numbers of true online, double conversion, high efficiency, high power factor Uninterruptible Power Systems (UPS) rated at 2 x 40 KVA – 2 Sets with battery backup support for 60 minutes on full load. The backup batteries should be supplied with the necessary arrangements to mount outside the cabinet.

Scope:

- The scope shall include design, supply, installation, testing and commissioning of the complete UPS system and related accessories including:
- All Server racks will get power feed from two independent 2 x 40 KVA UPS systems to ensure redundancy.
- All systems should be tested in factory as per the manufactures recommended procedure for all operating parameters and the test results should be provided during the installation.
- Delivery at site, unloading, handling, installation of complete system including interconnection from the UPS system to batteries and to input / output panels switches. All interconnections shall be done using multi-strand Flexible Copper conductor cables of appropriate sizes.
- Scope includes battery bank connections and providing safety barriers for all bus bars and cable connection leads on battery racks.
- Energizing of UPS and Battery bank commissioning.
- UPS control parameters setting and complete testing of system on load.-
- Service backup by engineer till system is fully operational and subsequently training is to be provided to the concerned persons of the Institute. –
- Any upgrade of the system hardware and associated other software during the warranty period should be supplied at free of charge. -
- Acceptance tests will be carried out after installation and the systems will be taken over only after successful completion of the acceptance tests. –
- Operation and service manuals of the systems containing technical / Electronic drawings / circuit diagrams complete in all respects should be supplied.–

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9.2   40 KVA UPS other Technical Specification:

OUTPUT PARAMETERS	
Capacity	40kVA/36kW (0-30deg C)
Power Factor	0.9 at 30Deg C
Configuration	3- ph, 3-wire,N +PE / 1 phase, L-N + PE
Voltage Regulation	(+/- 1%)
Voltage THD	<=2% - Linear load <=5% - Non linear load
Frequency	50/ 60Hz
Frequency Regulation (synchronized with bypass)	(+/- 2 Hz)
Slew Rate	0.2Hz/s
Crest Factor	3:1 max.
Recovery time	60 millisecond
Over load capacity	< 105% - continuous; 105-125% - < 5 min; 125-150% -< 1 min >150% - < 200ms (after overload shifted to bypass)
AC-AC Efficiency	>93% up to 94%
Transfer time - Mains to battery	0 millisecond
Transfer time - Inverter to bypass - Synchronization mode	1 millisecond
Parallel Redundancy	N+N

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INPUT PARAMETERS	
Configuration	3- ph, 3-wire,N +PE
Nominal Voltage	380/400/415V
Input Voltage range	3 Phase 228Vac-478Vac
Frequency	50/60 Hz
Frequency range- Hz	40 to 70 Hz at full load
Power Factor	>0.99 at full load
BYPASS	
Voltage Range	+15% -20%
Frequency	50/ 60Hz
Frequency Range	+/-20%
BATTERY PARAMETERS	
Type	SMF
No. of battery blocks	32-40
Battery Voltage	384-480Vdc
ENVIRONMENTAL PARAMETERS	
Operating temperature	0 to 40 deg. Centigrade
Storage temperature	-40 to 70 deg. Centigrade
Relative Humidity	95% RH non condensing
Altitude	2000 meters
Temperature de-rating	30-40deg de-rating

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Altitude de-rating	< 2000m; derating according to GB/T3859.2 when higher than 2000m
Noise level	<58db
MECHANICAL PARAMETERS	
Height X width X Depth (MM)	130(3U) X 435 X 750
Weight	35 Kg
Ventilation	Forced - Air cooled
Cable Entry	terminal block
Color / Panel finish	EG7021
Protection	IP20
Parallel	3+1, Built in Provision
LBS	Built in
MONITORING SOFTWARE	SNMP, Dry contact card, site monitoring / shutdown for multiple servers

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Installation:

   (i)   The entire system shall be installed as per manufacturer's recommendations & instructions including all interconnections for supply & control circuits.

   (ii)   All components shall be clearly identified using labels including battery cells individually.

   (iii) Services of authorized representative or manufacturer for supervision of installation, connections, testing, & adjustments shall be provided.

Testing & Commissioning:

   (i)   Under supervision of manufacturer's representative all system functions, operations, protective features shall be checked & preset to ensure compliance or specifications.

   (ii)   Test the system as per recommendations & test listed bellow using pre-calibrated instruments.

       1. Load simulation.

       2. Simulation of malfunctions to verify protective device operations.

       3. Duration of supply on emergency. Low battery voltage alarm & shutdown, transfer & restoration of normal supply.

       4. Remote status & alarm tests.

In case of test any shortfalls / faults, the same shall be rectified & test procedure shall be again repeated to establish satisfactory performance.

Cleaning:

On completion of installation, testing of the system all components, cabinets etc. shall be cleaned & unwanted material, debris shall be removed from site. Scratches dents if any shall be cleaned & touched up to match the original finish.

Drawings & Manuals for UPS

Following drawings & manuals / information shall be submitted in at least THREE copies at appropriate stages & for handing over the system.

   i   Manufacturer's data for product, features, components & performance along with the offer.

   ii   Operation & maintenance manual with;

       1. List of recommended spares & replacement components.

       2. Detail operating instructions covering operations in normal & abnormal conditions.

       3. Shop drawings showing detail fabrication, assembly of components, internal & interconnecting wiring, dimensions, plans & views, installation details access & clearance etc for approval.

       4. Product certificates for Brought out items.

       5. Factory test certificates & Inspection report.

       6. Field test reports.

9.3 Precision Air Conditioning System

Configuration:

Supply, installation, testing and commissioning of DX Type Air-conditioning Units designed specifically for high sensible heat ratio with variable or digital scroll cooling technique to match the low latent loads of systems to be installed in the integrated cabinet for effective and uniform distribution of cooling.

Cold air will be supplied to the cold aisle containment of the integrated cabinet and the hot air will be taken from the hot aisle containment of the cabinet.

9.3.1 GENERAL

Cooling Circuits

Design Requirements:
The environmental control system shall be a factory assembled unit. It shall be floor mounted, optimized for maximum cooling capacity in a minimum footprint.
It shall be specifically designed for service from the front and rear of the unit. The system shall be designed for draw-through air arrangement to insure even air distribution to the entire face area of the coil. It shall have adjustable air supply diffusers, the unit shall be capable to be mounted between the racks or at the end of row. The unit shall modulate cooling capacity and airflow based on requirements.

- Each system shall be capable of handling up to 5500 CMH with a horizontal airflow pattern. It shall have a net sensible cooling capacity rated no less then34 kW, based on the entering air condition of 37°C dry bulb, and 24% Relative Humidity. These units are to be supplied with 400 Volt, 3 phase, 50 Hz power supply. The humidifier shall have a capacity of 2 kg/h. Reheat shall have a capacity of 6kW.

Direct expansion

- One refrigeration circuit, incorporating a high efficiency, fully hermetic variable capacity compressor with crankcase heater, safety valve, filter drier, moisture indicating sight glass, liquid line solenoid valve and an externally equalized expansion valve.
- Each compressor is equipped with pre-set high and low pressure switches for protection against high condensing and low evaporating temperatures. The low pressure switch features an automatic reset (with an adjustable delay for winter start-up).

- The unit shall be provided with additional protection against high ambient temperature. When the temperature goes over the design conditions, the unit remains in operation with partial load (20% decrease against required). If such protection is not sufficient High Pressure switch shall generate an high pressure alarm and the unit shuts down - manual reset shall be required.

- The inclined evaporator coil is manufactured from copper tubes, mechanically bonded to hydrophilic painted aluminum fins, with a stainless steel condensate drain pan. The large face area/low velocity coil allows precise control of temperature and humidity* during cooling and dehumidification*, and is designed to optimize fluid velocity and minimize pressure drop.

- The moisture indicating sight glass, liquid line solenoid valve and expansion valve for each circuit are mounted in a service compartment, isolated from the air stream, to allow checking and adjustment while the unit is in operation.

Fan section

- Units is offered with two plug EC Direct Drive Fan, High efficiency, external rotor electronically commutated (EC) motor with integrated electronics, True soft start characteristics (inrush current lower than operating current), Backward curve, corrosion resistant aluminum fan wheel, Maintenance free design and construction. The fan section shall be designed for higher air flow. The fan shall be protected over temperature of motor, electronics, locked rotor protection, short circuit of motor output. Fans are IP54, Protection class F.

Cabinet and Frame

- The unit shall be powder painted panels with ½″ (or 10mm) insulation. A hinged control access panel opens to a second front panel which is a protection enclosure for high voltage components. The frame is painted with a powder coat finish to protect against corrosion. The unit is totally front and rear accessible including any component removal.

Air Filtration

- The filter cells are made of two deep pleated 4″ filters rated MERV8 following ASHRAE 52.2 (45% by ASHRAE 52.1) or G4 following EN779, located within the cabinet, and accessible from the rear of the unit. Frame of the filter shall be made of galvanized steel.

- Optional filters are available: MERV11 following ASHRAE 52.2-1999 (45% by ASHRAE 52.1-1992) or F5 following EN779.

- Clogged filter alarm is available for standard and for optional filter. It sends a visual alarm to display.

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Refrigerant

- All units equipped with direct expansion circuit are suitable for R410A refrigerant.

Microprocessor Controller

- Air conditioning models should be controlled by microprocessor based controller. It can be programmed to control the function of every device within the unit via I/O.
- The controller allows setting and monitoring of the room parameters. Unit utilizes multiple temperature sensors placed at the rack inlet, to ensure management and control of temperature by rack. Each unit should be connected up to 10 Sensors.
- The controller should allow setting and monitoring of the following space parameters:
    - Air inlet Temperature
    - Air supply Temperature (remote sensors at rack inlet)
    - Return Temperature set-point
    - Supply Temperature set-point
    - Return Temperature band
    - Supply Temperature band
    - Humidity (inlet)
    - Humidity set-point
    - Humidity band
    - Rack Min, Max and Average temperature
- The example of available warnings / alarms:
    - High supply temperature
    - Low supply temperature
    - High return humidity
    - Low return humidity
    - Loss of airflow
    - Compressor Low Pressure
    - Compressor High Pressure
    - Electrical heater high temperature (When applicable)
    - Clogged filter
    - Customer input (No 4 inputs)
    - LP transducer fail
    - Call service (customer input)
    - High temperature (customer input)
    - Unit hours exceeded
    - Compressor hours exceed

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- o Humidifier hours exceed
- o Supply sensor failure
- o Network failure
- o Humidifier problem
- o Digital scroll high temperature
- o Smoke detected
- o Fire alarm
- o Rack sensor failure
- o etc
- Following features should be incorporated in the controller:
  - o Status Report of the latest 400 event-messages of the unit.
  - o Input for remote on-off and volt-free contacts for simple remote monitoring of low and high priority alarms: high/low temperature, high/low refrigerant pressure, fan/control failure, compressor/control failure and others are available
  - o LAN management: functions provided as standard include stand-by (in case of failure of the unit in operation, the second one starts automatically), and
  - o automatic rotation. At least one unit in the LAN has to be equipped with Cold Fire large display
  - o Automatic restart is provided after a power failure.

Monitoring

- There should be SNMP and HTTP/Web-management capability for enhanced communications and control of HPM systems. The cards make use of an Ethernet network (10/100Mbit) to monitor and control a wide range of operating parameters, alarms and notifications thanks to a standard web browser (Internet Explorer). The card utilizes standard Ethernet cables (different cable lengths are available for your convenience on the Connectivity price list).
- The unit shall also include input volt-free contacts for simple remote monitoring of low and high priority alarms: high/low temperature, high/low refrigerant pressure, fan/control failure, compressor/control failure and others are available.

Condenser

- The condenser should be with fan speed controller designed & set for usages of R410A refrigerant. Condenser should be worked -20 deg C to 46 deg C ambient temperature. The condenser frame shall be made up of a sturdy aluminum structure. The main disconnector shall be IP65.

The entire unit shall be IP54 type of protection. The motorized fan shall be IP54, protection class F.

Additional Features - Humidifier

- The unit is fitted with an canister type steam humidifier suitable for use with water of varying degrees of hardness, provided that the water is not treated or demineralised (Conductivity range 125-500µS/cm). The humidifier is complete with a water inlet valve, water outlet valve and a maximum water level sensor, disposable cylinder, steam distributor and electronic controls. Humidifier control is of the ON-OFF type, can be also disabled by remote contact (Optional - humidifier and reheat lockout). Humidifier is removable from the rear of the cabinet.

9.3.2   CONDENSATE PUMP

It shall have a capacity of 22.7 l/min (6 GPM) at 9 m (30ft) head. Pump is complete with integral dual float switch, pump - motor assembly and reservoir. The secondary float shall send a signal to the local alarm and shut down the unit upon high water condition

9.3.4   CRANKCASE HEATER

The compressor shall include crankcase heaters, powered from the indoor unit electric panel

10.0   SAFETY AND SECURITY SYSTEMS

10.1   Biometric based Access Control

The IP based Access Control System shall be used to serve the objective of allowing access to authorized personnel only. The system deployed will be based on Biometric Technology. The front rack doors will be provided with magnetic locks, and will operate on fail-safe principle through one common Biometric access control system. Rear doors will be operated through mechanical lock & key mechanism.
The system would be designed and implemented to provide following functionality:
- Configurable system for user defined access
- Built-in Real Time Clock (RTC), calendar; complete Database stored locally and shall be capable of operating offline on standalone mode
- Record, report and archive each and every activity (permission granted and / or rejected) with log formats
- Fail safe operation in case of no-power condition and abnormal condition such as fire, theft, intrusion, loss of access control, etc.

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- At the biometric reader, user presents the finger to the biometric reader which is unique to each employee. The pattern is read and compared with stored data to grant / deny access.

10.2   FIRE ALARM SYSTEM

The Smart Row is designed as a complete stand-alone unit with security, fire detection and fire suppression systems. Each of the systems is inter-operable and inter connected.
Environmentally friendly Novec 1230 agent is used to ensure that no harm to human beings and environment is caused.

Following systems are installed:
- Novec 1230 Clean Agent for fire suppression system
- Fire detection and alarm systems, with detectors and panel.
- Access control system.
- Protected area: The entire enclosed volume of the rack cabin is protected with fire detection and fire suppression system. The front doors are secured by Access Control system.
- The Novec 1230 system is designed and installed as per NFPA 2001-2012 Edition. SMPV, Petroleum and Safety Explosives Organization (PESO) approved cylinder filled with Novec 1230 is installed in specially designed Modular rack.

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BILL OF QUANTITY

Sr No	Description
1	Integrated Smart Data Centre Solution suitable for 2x40 KVA IT load (@ 0.8 PF) distributed in 6 Racks which provide active approx 227 U space for IT devices, with 60 minutes Power Backup, Integrated with Suitable redundant Precision Air Conditioning, Fire detection & Suppression and Monitoring.
	Brief Scope; Integrated SITC of
	a) Redundant (N+N redundancy) 2 X 40 KVA (2 Sets)
	b) Redundant Precision Cooling Systems Suitable for 70 kW IT load with variable Digital Scroll Technology (N+1 redundancy)
	c) Integrated and contained Cabinet including 6 - 42U x 600 mm x1000mm IT Racks
	d) Thermal Containment (Front Cold and Rear Hot Aisle Contained)
	e) Fire Detection system
	f) Novec Gas 1230 gas suppression system
	g) Monitoring capability over IP with required system
	h) Biometric Access Control
2	12 Volt SMF batteries with backup of 60 minutes backup on full load

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PART-B: IT INFRASTRUCTURE

Technical specification for Integrated Smart Data centre and IT Infrastructure

ITEM	Description	Qty
DATABASE SERVERS	TWO CPU SERVER WITH 4 CORE CPU TWO CPU'S POPULATED	2
Application Server	FOUR CPU SERVER WITH 16 CORE CPU 2 CPU'S POPULATED	2
SAN STORAGE	SAN STORAGE WITH 10 TB STORAGE WITH SSD,40 TB WITH SAS 10K RPM AND 200 TB WITH SAS 7200 RPM	1
SAN SWITCH	24-PORT 16 Gbps SAN Switches	2
TAPE LIBRARY	LTO TAPE DRIVE	1
BACUP SOFTWARE	BACK UP SOFTWARE	1

DATA BASE SERVER			
Server:	Two CPU serer with 4 core CPU		
Item	Description of Requirement	Compliance	Remarks
CPU	Two No's of Intel® Xeon® E5-2637v4 (3.5GHz/4-core/15MB/135W) Processor Kit		
CPU L3 CACHE Memory	15MB L3 cache		
Motherboard	Intel® C610 Series Chipset		
Memory	128 GB DDR4 2400 MHz scalable to at least up to 768GB, using DDR4 Reduced DIMM (RDIMM) memory modules with 24 DIMM slots or equivalent		
Memory Protection	Advanced ECC with multi-bit error protection and memory online spare mode		
HDD Bays	Up to 8 SFF, HDD/SSD expandable up to 16 drives with optional drive cage, The drive carrier should have intuitive icon based display along with "DO NOT REMOVE" caution indicator that gets activated automatically in order to avoid data loss/downtime due to wrong drive removal or equivalent		
Optical drive Bay	DVD-RW		
Hard disk drive	3 x 600 GB 12 G SAS 10K rpm SFF (2.5-inch) Hot pluggable Hard Drive		
Controller	PCIe 3.0 based 12Gb/s SAS Raid Controller with RAID 0/1/1+0/5/50/6/60/1 Advanced Data Mirroring/10 Advanced Data Mirroring with 2GB battery backed write cache (onboard or in a PCI Express slot) or equivalent		
Networking features	1Gb 4-port network adaptor supporting advanced features such as Large Send offload capability, TCP checksum and segmentation, VLAN tagging, MSI-X, Jumbo frames, IEEE 1588, and virtualization features such as VMware NetQueue and Microsoft VMQ.		
Interfaces	Serial - 1 Micro SD slot - 1 USB 3.0 support With Up to 5 total: 1 front, 2 rear, 2 internal (secure)		
Bus Slots	Six PCI-Express 3.0 slots, at least two x16 and four x8 slots		

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Power Supply	Minimum 94%effecient 750W or more Hot pluggable Redundant Power Supplies		
Fans	Redundant hot-plug system fans		
Graphics	Integrated video with 16MB of Video RAM		
Industry Standard Compliance	ACPI 2.0b Compliant PCIe 3.0 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 3.0 Support USB 2.0 Support Energy Star ASHRAE A3/A4 or equivalent UEFI (Unified Extensible Firmware Interface Forum)		
Embedded system management	Should support monitoring ongoing management, service alerting, reporting and remote management with embedded Gigabit out of band management port Server should support configuring and booting securely with industry standard Unified Extensible Firmware System should support RESTful API integration System management should support provisioning servers by discovering and deploying 1 to few servers with Intelligent Provisioning System should support embedded remote support to transmit hardware events directly to OEM or an authorized partner for automated phone home support		
Security	Power-on password Serial interface control Administrator's password UEFI Should support up to 12 customizable user accounts on out of band management port and SSL encryption Should also supports directory services integration TPM 1.2		

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Operating Systems and Virtualization Software Support	Microsoft Windows Server Canonical Ubuntu Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix Xen Server		
Provisioning	Essential tools, drivers, agents to setup, deploy and maintain the server should be embedded inside the server. There should be a built -in Update manager that can update firmware of system by connecting online.		
Remote Management	1. System remote management should support browser based graphical remote console along with Virtual Power button, remote boot using USB/CD/DVD Drive. It should be capable of offering upgrade of software and patches from a remote client using Media/image/folder; It should support server power capping and historical reporting and should have support for multifactor authentication. 2. Server should have dedicated 1Gbps remote management port. Remote management port should have 4GB NAND flash with 1GB available for user access. NAND flash should be used for keeping system logs and downloading firmware from website or internal repository 3. Server should support agent less management using the out-of-band remote management port. 4. The server should support monitoring and recording changes in the server hardware and system configuration. It assists in diagnosing problems and delivering rapid resolution when system failures occur. 5. Remote console sharing up to 6 users simultaneously during pre-OS and OS runtime operation, Console replay - Console Replay captures and stores for replay the console video during a server's last major fault or boot sequence. Microsoft Terminal Services Integration, 128 bit SSL encryption and Secure Shell Version 2 support. Should provide		

	support for AES and 3DES on browser. Should provide remote firmware update functionality. Should provide support for Java free graphical remote console.		
Server Management	The Systems Management software should provide Role-based security		
	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 provide an online portal that can be accessible from anywhere. The portal should provide one stop, online access to the product, support information and provide information to track warranties, support contrasts and status. The Portal should also provide a Personalised dashboard to monitor device heath, hardware events, contract and warranty status. Should provide a visual status of individual devices and device groups. The Portal should be accessible on premise (at customer location - console based) or off premise (using internet).		
	Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes		
	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 help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.		

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	The Server Management Software should be of the same brand as of the server supplier.		
	Infra Platform /Infra Software to support a variety of different hypervisors, such as VMware, Microsoft Hyper-V, Red Hat KVM		
	Solution available to Deploy a fast and easy installation via software appliance delivery mode. With its own OS and Database to provide infra and lifecycle management		
Chassis	2 U Rack Mountable		
Warranty	Server Warranty includes 5-Year Parts, 5-Year Labor, 5-Year Onsite support with next business day response.		

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APPLICATION SERVER			
Item	Description of Requirement for 4 CPU Servers with 16 core CPU	Compliance	Remarks
Processor	The server should be supplied with two numbers of Intel® Xeon® E7-4850v4 (2.1GHz/16-core/40MB/115W) Processor Kit		
Cache	40MB L3 cache memory		
Upgradeability	Up to Four (4) processors		
Chipset	Intel® C602J Chipset		
Memory	256 GB with DDR4 DIMMs and server should support up to 6TB memory supporting across 96 DIMM slots		
Memory Features	Should support advanced memory features 1) Memory quarantine 2) Double data device correction 3) Single data device correction 4) Online Memory sparing 5) Memory mirroring		
Integrated network controller	1. 1Gb 4-port network adaptor supporting advanced features such as Large Send offload capability, TCP checksum and segmentation, VLAN tagging, MSI-X, Jumbo frames, IEEE 1588, and virtualization features such as VMware Net Queue and Microsoft VMQ.		
Expansion Slots	Server should support minimum 9 PCI express 3.0 slots and it should be supplied with minimum two active Full length Full height PCEx 16 slots and two active full length full height PCIex8 slots		
Storage Controllers	Should support 12Gbps SAS Controller with 2GB Flash Backed Write Cache. Controller should support data encryption to protect sensitive and mission critical data. Controller should support RAID levels 6, 60, 5, 50, 1, 10 and Advanced Data Mirroring with 3 drives or equivalent		
Storage Bays	Should be supplied with minimum Should support at least ten SFF HDDs		
Hard Disk Drive	3 x 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive System should support minimum of, Serial port: 1		

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Interfaces	Video: 1 front; 1 rear micro-SD Slot: 1 USB 2.0 Ports: 8 total: 2 front; 4 rear; 2 internal		
Industry standard compliance	ACPI 2.0. Compliant PCIE 2.0 Compliant PXE Support WOL Support Physical Address Extension (PAE) Support Microsoft® Logo certifications USB 2.0 Support ASHRAE A3/A4 or equivalent		
Power supply	Should support platinum efficiency hot plug redundant power supplies		
System fans	Should support hot plug redundant system fans		
Form Factor	4 U Rack Mountable		
Remote Management	1. System remote management should support browser based Graphical Remote Console; Virtual Power button, 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. 2. Remote management port should be able to download the firmware from the website directly or from internal system. Server should support automated firmware update. 3. Server should support agent less management using the out-of-band remote management port instead of OS and SNMP port on the OS. This will enable zero downtime updates 4. The server should support features which monitors and records changes in the server hardware and system configuration. It assists in diagnosing problems and delivering rapid resolution when system failures occur. 5. Applications to access the server remotely using popular handheld devices based on Android or Apple IOS should be available.		

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	6. Remote console sharing with multiple users simultaneously during pre-OS and OS runtime operation, Console replay - Console Replay captures and stores for replay the console video during a server's last major fault or boot sequence. Microsoft Terminal Services Integration, 128 bit SSL encryption and Secure Shell Version 2 support. Should provide support for AES and 3DES on browser. Should provide remote firmware update functionality. Should provide support for Java free graphical remote console.		
Server Management	System should support both UEFI and legacy system BIOS		
	The Systems Management software should provide Role-based security		
	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.		
	Server should support cloud based management by accessing the servers' configuration information, warranty & sla information, support case details anywhere from the internet		
	Should support scheduled execution of OS commands, batch files, scripts, and command line apps on remote nodes		
	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 help to proactively identify out-of-date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.		
Warranty	Server Warranty includes 5-Year Parts, 5-Year Labor, 5-Year Onsite support with next business day response.		

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SAN STORAGE

S.No	Parameter	Functionality	Compliance	Remarks
1.0.1	Converge / Unified Storage	1. Offered Storage array shall be a true converge / unified storage. Controllers for File, block and object services respectively, or equivalent 2. Offered Storage array shall be end-to end 12Gbps enabled which means that both Front-end Fiber channel ports and Back-end engines shall be operated at minimum 12Gbps speed.		
1.0.2	Operating System & Clustering Support	The storage array should support industry-leading Operating System platforms including: Windows Server 2008, Windows 2012, VMware, Solaris, HP-UX, IBM-AIX and Linux.		
1.0.3	Capacity & Scalability	The Storage Array shall be offered with 10TB RAW Capacity using SSD DRIVES ,40 TB RAW CAPACITY USING SAS 10 K RPM HDD AND 200 TB RAW CAPACITY USING SAS 7200 RPM drives.		
1.0.4	Cache	1. Offered Storage Array shall be given with Minimum of 64GB cache in a single unit and shall be scalable to 128GB without any controller change. 2. Cache shall be used only for Data and Control information. OS overhead shall not be done inside cache. 3. Offered Storage array shall also have additional support for Flash Cache using SSD / Flash drives. Both File services as well as Block operations shall be able to utilize flash cache. Minimum of 1TB Flash cache shall be supported.		

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1.0.6	Architecture & Processing Power	Controllers shall be true active-active so that a single logical unit can be shared across all offered controllers in symmetrical fashion, while supporting all the major functionalities like Thin Provisioning, Data Tiering etc.		
1.0.7	No Single point of Failure	Offered Storage Array shall be configured in a No Single Point of configuration including Array Controller card, Cache memory, FAN, Power supply etc.		
1.0.8	Disk Drive Support	Offered Storage Array shall support dual-ported 300 / 600 / 1200 /1800GB hot-pluggable Enterprise SAS hard drives, Minimum of 400GB SSD Drives along with near line SAS 2TB / 4TB / 6TB drives. Scalability of the storage system should be up to 550 Drives		
1.0.9	Raid Support & Virtualization	1. Offered Storage Subsystem shall support Raid 0, 1 , 1+0, 5 and Raid 6. 2. Offered storage array shall have native virtualization support so that Raid 1. Raid 5, Raid 1+0, Raid 6 can be carved out from a logical space instead of dedicating separate physical disks for each application. 3. Every supplied disk shall be able to participate into multiple and different raid sets simultaneously.		
1.1.0	Data Protection	In case of Power failure, Storage array shall have de-stage feature to avoid any data loss.		
1.1.1	Protocols	Offered Storage array shall support all well-known protocols like FC, ISCSI, FCOE, SMB 3.0, NFS V4, NDMP etc.		

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1.1.2	Host Ports and Back-end Ports	1. Offered Storage shall have minimum of 4 host ports for connectivity to servers running at 16Gbps speed and shall be scalable to 8 host ports. Offered Storage shall also support: a. Additional Quad number of 10Gbps ISCSI / FCOE ports. b. Along with ISCSI / FCOE ports, additional Quad number of 10Gbps IP ports or eight numbers of 1Gbps IP ports for File services operations. 3. Offered storage shall have two additional IP ports for the storage based replication. 4. Offered storage shall have minimum of 16 SAS lanes running at 12Gbps speed and shall be scalable to 32 SAS lanes without any controller change.		
1.1.3	Global Hot Spare	1. Offered Storage Array shall support distributed Global hot Spare for offered Disk drives. 2. Global hot spare shall be configure as per industry practice.		
1.1.4	Performance and Quality of Service	1. Shall have capability to use more than 30 drives per array group or raid group for better performance. 2. Storage shall be provided with Performance Management Software. 3. Offered storage array shall support quality of service for critical applications so that appropriate and required response time can be defined for application logical units at storage. It shall be possible to define different service / response time for different application logical units.		

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		4. Quality of service engine shall allow to define minimum and maximum cap for required IOPS / bandwidth for a given logical units of application running at storage array.		
1.1.5	Thin Provisioning and Space Reclaim	1. Offered storage array shall be supplied with Thin provisioning and Thin Re-claim to make the volume thin for an extended period of time for complete array supported raw capacity. 2. Thin Re-claim (Zero Page reclaim) inside storage subsystem shall be automatic in nature and there shall be no need to run any utility inside storage for same. 3. Thin Re-claim inside storage shall not cause any overloading of Storage CPU and shall be able to claim the Zero pages even during peak load without any performance impact 4. For effective capacity utilization, thin reclaim maximum unit shall be 16KB. Vendor shall provide the documentary proof for same. 5. Offered storage array shall be tightly integrated with VMware so that Eager zero disks layout can be used with thin provisioning and thin re-claim.		
1.1.6	Maintenance	Offered storage shall support online non-disruptive firmware upgrade for both Controller and disk drives.		

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1.1.7	Snapshot / Point in time copy / Clone	1. Offered Storage shall have support to make the snapshot and full copy (Clone) on the thin volumes if original volume is created on thick or vice-versa. 2. The storage array should have support for both controller-based as well as file system based snapshots functionality (At-least 1024 copies for a given volume or a file store).		
1.1.8	Quota Management and Antivirus Scanning	1. For file services operations, offered storage shall have both user level as well as file level hard and soft quota. 2. For file services operations, offered storage shall support integration with industry leading antivirus vendors like Symantec and MacAfee.		
1.1.9	Storage Array Configuration & Management Software	1. Vendor shall provide Storage Array configuration and Management software. 2. Software shall be able to manage more than one array of same family.		
1.2.0	Storage Tiering	1. Offered storage shall have dynamic migration of Volume from one Raid set to another set while keeping the application online. 2. For effective data tiering, Storage subsystem shall support automatically Policy based Sub-Lun Data Migration from one Set of drive Tier to another set of drive tier.		
1.2.1	Remote Replication	1. The storage array should support hardware based data replication at the array controller level across all models of the offered family. 2. Replication shall support incremental replication after resumption from Link Failure or fail back situations.		

1.2.2		The proposed storage should be listed in SPC-1 Benchmark results with 4,00,000 IOPS. SPC-1 results Benchmark Results should be submitted at time of bidding		
	Performance Benchmark			
1.2.3	Warranty	Warranty includes 5-Year Parts, 5-Year Labor, 5-Year Onsite support with next business day response		

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Sr. No.	Specifications for SAN Switch	Compliance	Remarks
	Architecture/Scalability/Performance/Management/Availability:		
1	SAN switch shall be configured where each SAN switch shall be configured with minimum of 12Ports expandable to 24 ports		
2	Required scalability shall not be achieved by cascading the number of switches and shall be offered within the common chassis only		
3	Should deliver 8 Gbit/Sec Non-blocking architecture with 1:1 performance for up to 24 ports in a energy-efficient fashion		
4	Should protect existing device investments with auto-sensing 4, 8, and 16 Gbit/sec capabilities.		
5	The switch shall support different port types such as FL_Port, F_Port, E_Port, EX_Port.		
6	The switch should be rack mountable		
7	Should provide enterprise-class availability features such as redundant and hot pluggable components like power supply and FAN		
8	Non disruptive Microcode/ firmware Upgrades and hot code activation.		
9	The switch shall provide Aggregate bandwidth of 768 Gbit/sec end to end.		
10	Switch shall have support for web based management and should also support CLI.		
11	The switch should have USB port for firmware download, support save, and configuration upload/download.		
12	Offered SAN switches shall be highly efficient in power consumption. Bidder shall ensure that each offered SAN switch shall consume less than 100 Watt of power.		
13	Switch shall support POST and online/offline diagnostics, including RAS trace logging, environmental monitoring, non-disruptive daemon restart, FC ping and Path info (FC trace route), port mirroring (SPAN port).		
	Intelligent Networking:		
14	Offered SAN switch shall support services such as Quality of Service (QoS) to help optimize application performance in consolidated, virtual environments. It should be possible to define high, medium and low priority QOS zones to expedite high-priority traffic		
15	The switch shall be able to support ISL trunk up to 128 Gbit/sec between a pair of switches for optimal bandwidth utilization and load balancing.		

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16	SAN switch shall support to restrict data flow from less critical hosts at preset bandwidths.		
17	It should be possible to isolate the high bandwidth data flows traffic to specific ISLs by using simple zoning		
18	The Switch should be configured with the Zoning and shall support ISL Trunking features when cascading more than 2 numbers of SAN switches into a single fabric.		
19	Offered SAN switches shall support to measure the top bandwidth-consuming traffic in real time for a specific port or a fabric which should detail the physical or virtual device.		
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TAPE LIBRARY

S.No.	Parameter	Functionality	Compliance	Remarks
1.0.1	Capacity	1. Shall support Native data capacity of 120TB (uncompressed) expandable to 300TB (2.5:1 compressed). 2. Shall be offered with Minimum of two LTO6 FC tape drive. Drive shall support encryption 3. Shall be offered with 48 Cartridge slots.		
1.0.2	Tape Drive Architecture	Offered LTO6 drive in the Library shall conform to the Continuous and Data rate matching technique for higher reliability.		
1.0.3	Speed	Offered LTO6 drive shall support 160MB/sec in Native mode and 400MB/sec in 2.5:1 Compressed mode.		
1.0.4	Scalability	Tape Library shall be scalable to four number of LTO-5 drives within the same frame.		
1.0.5	Connectivity	Offered Tape Library shall provide 8Gbps native FC connectivity to SAN switches.		
1.0.6	Partitioning	Offered Tape Library shall have at-least two partition support so that drives can be configured in a partition with dedicated slots.		
1.0.7	Encryption device	Offered Library shall be provided with a hardware device like USB key, separate appliance etc. to keep all the encrypted keys in a redundant fashion.		
1.0.8	Management	Tape Library shall provide web based remote management.		
1.0.9	Barcode Reader and Mail slots	Tape library shall support Barcode reader and mail slot.		

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1.1.0	Other Features	1. Tape Library shall have GUI Panel 2. Shall be rack mountable. 3. Shall have option for redundant power supply 4. Tape Library shall be supplied with software which can predict and prevent failures through early warning and shall also suggest the required service action. 5. Offered Software shall also have the capability to determine when to retire the tape cartridges and what compression ratio is being achieved		
	Warranty	Warranty includes 5-Year Parts, 5-Year Labor, 5-Year Onsite support with next business day response		

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BACKUP SOFTWARE	Compliance	Remarks
The proposed backup solution should be available on various OS platforms such as Windows, Linux and UNIX platforms		
The proposed backup solution shall support industry leading cluster solution such as MSCS, MC Service Guard, Veritas Cluster.		
The proposed backup solution shall have same GUI across heterogeneous platform to ensure easy administration.		
The proposed backup solution should support tape mirroring of the same job running concurrently with primary backup.		
The proposed backup solution should allow creating tape clone facility after the backup process.		
The proposed backup solution shall be configured in such a fashion that no extra license for client and media servers is required while moving from LAN to SAN based backup.		
The proposed backup solution shall be configured with unlimited client and media licenses for both SAN based backup and LAN based backup.		
The proposed backup solution must not require separate licensing when upgrading from a lower end server (1-2 CPU-based server) to higher end server (4-and CPU-based server)		
The backup software should support either the Capacity based model or Application based model of licensing		
The proposed backup solution supports the capability to write up to 32 data streams.		
The proposed backup solution support de-multiplexing of data cartridge to another set of cartridge for selective set of data for faster restores operation to client/servers.		
The proposed backup solution has in-built media management and supports cross platform device and media sharing in SAN environment. It provides a centralized scratched pool thus ensuring backups never fail for media.		
The proposed backup solution has in-built frequency and calendar based scheduling system.		
The proposed backup solution has certified "hot-online" backup solution for different type of Enterprise databases and applications		

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The proposed backup solution shall also support granular recovery for Vmware , Exchange server, Share point Portal		
The backup software should support Non Staged Granular recovery in VMWare		
The proposed backup software should use the same API for software and hardware deduplication		
The backup software should support backup to disk /VTL /Deduplication Device via Fiber channel		
The backup software should support IP sec encryption for the VTL / Disk device		
The proposed backup software should give the option to allow de duplication to be done either on the Application Server or on the Backup Server or at the Target Device.		
The proposed backup software should support contextual search based on meaning.		
The proposed backup software should support both on-premise and secure hosted backup solution		
The proposed backup solution shall support synthetic full backup / Virtual full backups.		
The proposed backup solution shall be able to copy data across firewall.		
The proposed backup solution shall support automatic skipping of backup during holidays.		
The proposed backup solution must support at least AES 256-bit encryption capabilities.		
The backup software should support the Recurrence type Every Minute which will support more frequent backup jobs		
The backup software should support Different Time Zone within enterprise environments, where backups can be scheduled across different time zones from the same single schedule		
The backup software should support priority based backup schedule		
The backup software should support missed job execution		
The Backup software should support Advanced Scheduling options		
The Backup software should be able to recover only critical volumes and later restore other volumes that were backed up in separate sessions.		

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The backup software should be capable to supporting 99,999 backup sessions in day		
The backup software should be capable of supporting 1000 concurrent sessions		
The backup software should be able to support maximum of 40 Million files per directory		
Warranty includes 5-Year Parts, 5-Year Labor, 5-Year Onsite support with next business day response		

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TECHNICAL BID
(To be submitted in a separate sealed envelope)

1.	Name of Tendering Company/Dealer with Registration No. & Date issued by appropriate authorities (Please enclose copy of certificate of registration)	
2.	Do you possess trade license issued by Competent authorities? If so, please enclose a copy.	
3.	Name of Proprietor / Director	
4	Furnish following particulars of the Registered Office:	
	a. Complete Postal Address	
	b. Telephone No.	
	c. Fax. No.	
	d. E-Mail Address	
5.	Furnish following particulars of the Office address, if the registered office is different from the above	
	a. Complete Postal Address	
	b. Telephone No.	
	c. Fax. No.	
	d. E-Mail Address	
6.	Are you a dealer? If yes, please attach a copy of the Dealership certificate issued by the manufacturing company	
7.	PAN No. (Attach Attested Copy)	
8.	TIN No. (Attach Attested Copy)	
9.	Service Tax Regn. No. (Attach Attested Copy)	

10.	Financial turnover for the three financial Years.(Please attach copies of audited balance sheet and IT returns)		
	Financial Year	Amount (` In Lakhs)	Remarks, if any
	2013-14		
	2014-15		
	2015-16		
	(Attach separate sheet if space provided is insufficient)		

11.	Give details of the major clients – Government Departments, PSUs, Research Organizations, Multinational Companies the installation of Data Centre has been done by the bidder during the last three years in the following format. Copies of the Purchase Orders / Indents should be attached for proof.				
	Sl. No	Name & address of the client with details - Name of the contact person, telephone no., Fax no., e-mail id	Name & quantity of the equipment items sold	Purchase Order/Indent No., Date& Work completion reports	Amount
	1				
	2				
	3				
	(If the space provided is insufficient, a separate sheet may be attached)				

12.	Are you a regular manufacturer or authorized dealer for the type of equipment in this tender?	
13.	Have you supplied and completed at least one order worth at least Rs.2.00 crores in the last three financial years (2013-14, 2014-15 and 2015-16) in Scientific/Research Institutions or in Universities and other corporate offices/ Sectors? Please attach copies of supporting documents.	
14.	Are you an ISO certified manufacturer? If so, please attach a copy of the certificate.	

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COMMERCIAL BID

FOR

TENDER FOR DESIGN, ENGINEER, SUPPLY/MANUFACTURE, TEST, ERECT, INSTALL, CONNECT, COMMISSION AND SITE TEST THE EQUIPMENT/SUBSYSTEMS/SYSTEMS FOR SETTING UP SMART DATACENTRE & IT INFRASTRUCTURE AT OSMANIA UNIVERSITY

S.No	NAME OF THE WORK	PRICE
1	DATA CENTRE	
2	I.T INFRASTRUCTURE	
	TOTAL RS.	

Rupees (in words) ....
Total Cost is inclusive of all taxes, insurance, octroi, transportation, loading, uploading, unloading, installation, commissioning and testing, O & M including manpower for 5 years.

(SIGNATURE AND STAMP OF THE TENDERER)

Date: Name: _____

                                               Designation: _____

Place :   Seal :

PERFORMANCE BANK GUARANTEE FORMAT ON SECURITY DEPOSIT

This deed of Guarantee made on.................... day of Month & Year by Name & Address of the bank (hereinafter called the "GUARANTOR") on the one part, on behalf of M/s Name & address of the Firm(hereinafter called the "FIRM") in favour of The Registrar, Osmania University, Hyderabad on the following terms and conditions.

Whereas the FIRM is entering into a agreement with OSMANIA UNIVERSITY "**Setting up DATA CENTER & IT Infrastructure at Central Facilities for Research & Development, O.U.**"and this guarantee is being made for the purpose of submission of Security money required to be deposited at the time of signing of the agreement between Osmania University and FIRM.

Know all people by these presents that the GUARANTOR, hereby undertake to indemnify and keep Osmania University indemnified up to the extent of Rs.............(Rupees in words)during the validity of this bank guarantee and authorize Osmania University to recover the same directly from the GUARANTOR. This bank guarantee herein contained shall remain in full force and effect till the expiry of its validity or till any extended period (if extended by the bank on receiving instructions from FIRM.). The liability under the guarantee shall be binding on the GUARANTOR or its successors.

Whereas the GUARANTOR further agrees that their liability under this guarantee shall not be affected by any reason of any change in the offer or its terms and conditions between the FIRM and Osmania University with or without the consent or knowledge of the GUARANTOR.

Whereas the GUARANTOR further agrees to pay guaranteed amount hereby under or part thereof, on receipt of first written demand whenever placed by Osmania University during the currency period of this guarantee. The GUARANTOR shall pay Osmania University immediately without any question, demure, reservation or correspondence.

Whereas the GUARANTOR hereby agrees not to revoke this guarantee bond during its currency period except with the previous consent of Osmania University in writing.

Notwithstanding anything contained herein

• Our liability under this bank guarantee shall not exceed Rs................(Rupees in words)
• This Bank guarantee shall be valid up to ....
• We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only against the written claim or demand on or before ....
Sealed with the common seal of the bank on this ....day of (Month) and (Year).

Witness
1.....................................

2.....................................   (Signature and seal of the bank)

SIGNATURE AND STAMP OF THE TENDERER