

EXPRESSION OF INTEREST (EOI) DOCUMENT

FOR THE WORK OF

Design, Supply and installation of Network, Security, Server, gap non-IT Infrastructure at Data Centre (DC) at new IT Bhavan and Migration of Application, Server, Storage of Tripura State Data Centre (TSDC) from old location to new location and Operation and Maintenance (O&M) of TSDC at new IT Bhaban, Agartala.

**EOI No.7(1)/TSCA/SDC/2017/
dated 30 Nov 2017**

**Issued by
Tripura State Computerisation Agency (TSCA)
A Society of Directorate of Information Technology (DIT)
Government of Tripura
IT BHABAN, Indranagar, Agartala, Tripura
Pin: 799006, www.dit.tripura.gov.in**

EOI Advertisement:

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| Tripura State Computerisation Agency (TSCA) (A Society of Directorate of Information Technology (DIT), Govt. of Tripura) IT BHABAN, Indranagar, Agartala-799006, Tripura | |
| Request for Expression of Interest (EOI) for | |
| Design, Supply and installation of Network, Security, Server, gap non-IT Infrastructure, Data Center (DC) Migration and Operation and Maintenance (O&M) of DC for a period of 5 years. | |
| Date of issue | 30 Nov 2017. |
| Last date of submission of EOI | Upto 3 PM of 20 Dec 2017 |
| How to get copy of EOI document | Details of EOI can be downloaded from https://tripuratenders.gov.in or www.tripura.gov.in or www.dit.tripura.gov.in . “Corrigendum, Addendum if any, would appear only on the said web sites and not to be published in any News Paper”. |
| Contact information | Member Secretary, Tripura State Computerisation Agency, Phone/Fax: 0381-235-5751; Email: itdept-tr@nic.in |
| Contact person | Shri Uttam Podder, Jt Director, IT, Email: uttam.podder@nic.in |

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1. Notice Inviting Expression of Interest (EOI)

TSCA invites Expression of Interest from experienced and eligible firms for the work of Design, Supply and installation of Network, Security, Server, gap non-IT Infrastructure at Data Centre (DC) at new IT Bhavan and Migration of Application, Server, Storage of Tripura State Data Centre (TSDC) from old location to new location and Operation and Maintenance (O&M) service of TSDC at new IT Bhaban, Agartala.

2. Important information and dates:

| | |
|---|---|
| EoI No | 7(1)/TSCA/SDC/2017/ dated 30 Nov 2017 |
| Name of the Work | Design, Supply and installation of Network, Security, Server, gap non-IT Infrastructure at Data Centre (DC) at new IT Bhavan and Migration of Application, Server, Storage of Tripura State Data Centre (TSDC) from old location to new location and 5 years Operation and Maintenance (O&M) service of TSDC at new IT Bhavan, Agartala |
| Brief Scope of Work | Study TSDC at old IT building and new DC at new IT Bhavan building, assessment for gap infrastructure for DC migration and submission of EOI proposal for the work of Design, Supply and installation of Network, Security, Server, gap non-IT Infrastructure at Data Centre (DC) at new IT Bhavan and Migration of Application, Server, Storage of Tripura State Data Centre (TSDC) from old location to new location and 5 years Operation and Maintenance (O&M) service of TSDC at new IT Bhaban, Agartala |
| Date of Issue of EOI | 30 Nov 2017 |
| Last date for submission of clarification queries | 8 Dec 2017 at 4 PM |
| Period of Completion of EOI | 3 weeks starting from 30 Nov 2017. |
| Last date & time of submission of EOI | 20 Dec 2017 at 3 PM |
| Date & Time of Opening of EOI applications | 20 Dec 2017 at 3:30 PM |
| Address for commination/ submission of EOI | Member Secretary, Tripura State Computerisation Agency, ITI Road, Indranagar, Agartala-799006. Phone/Fax: 0381-235-5751; Email: itdept-tr@nic.in |
| Contact person | Shri Uttam Podder, Jt. Director, IT; Email: uttam.podder@nic.in |

3. Introduction to the project:

i. Background and objective:

a. Tripura State Data Centre (TSDC):

TSDC is one of the key elements of the IT infrastructure created, which is providing data centre service to different Departments / Organizations in the State Government, for hosting, running and storing their applications, information, data, etc for delivering services to the citizens with greater reliability, availability and serviceability. TSDC provides better operations & management (O&M) control and minimizes overall cost of Data Management, IT Management, Deployment and other costs. TSDC is operational 24x7 basis, since 24th December 2010. TSDC currently have around 80 servers and SAN storage systems having more than 130 TB RAW capacities for catering services to different Govt. department/ organization. Currently, around 150 applications and websites of different State Govt. Departments are hosted and running in TSDC. Disaster Recovery (DR) site of TSDC is established at National Data Center (NDC), New Delhi through storage base replication solution. TSDC was ISO 27001 (ISMS- Information Security Management System) certified for its security practices and ISO 20000-1 (SMS - Service Management System) certified for its operation management. A brief asset detail of TSDC is given at **Annexure - I**.

b. TSDC Cloud:

Under SDC enhancement activities, Cloud enablement of TSDC has been implemented in 2016. As part of the Cloud Enablement work, Cloud SI has supplied and installed one Blade Enclosure, four Blade Servers, two Management Server, two Windows Data Center Edition Operating System (OS), two Linux Enterprise Edition OS, Cloud Management Solution, four Citrix CloudPlatform Socket License (Citrix XenServer Enterprise Edition) in TSDC. Through Cloud enablement, following cloud features are made available in TSDC: Virtualisation; Resource pooling; Accessibility; Scalability; On-demand self-services; Measured services; High availability. After implementation of Cloud technology/ solution, TSDC is providing Infrastructure-as-a-Service(IaaS) cloud service to different user Departments/Organisations. Most of the applications and websites hosted in TSDC have been migrated to TSDC Cloud. TSDC achieved following benefits after implementing Cloud: Very less service provisioning time; On demand compute resource upgradation; High availability.

ii. TSDC Location: TSDC project was implemented by TSCA, setup in the premises of Directorate of IT, ITI Road, Indranagar, Agartala, 799006. TSDC was set up in an area of about 2,800 Sq. ft. earmarked for this purpose on first floor of old building of IT Directorate.

In the 1st floor of adjacent new IT Bhavan building one Data Center (DC) floor space with DC non-IT infrastructure has been created in around 5000 sq ft area for migrating TSDC over there. Brief information on non-IT infrastructure supplied and installed at new DC is given at **Annexure - II**.

4. Current scope of work:

i. New procurements:

Almost all non-IT infrastructures for new Data Center have been supplied and installed. Now, one has to study TSDC at old IT building and new DC at new IT Bhavan building and make assessment for gap infrastructure for DC migration, which may be factored in BOM of the RFP. All network and security equipments at TSDC are end of life or near to end of life, so in the new DC, network and security part will be implemented a fresh, considering today's security implementation requirements. Around 20 servers would also be procured for new DC and 10 servers for DR. Server rack, network rack, etc need to be procured for new DC.

ii. Existing infrastructure migration:

All servers would be migrated to new DC. TSDC has got Hitachi Data System (HDS) Virtual Storage Platform (VSP) SAN storage, EMC VNX 5200 SAN storage, HP EVA4400 and another 2 more SAN storage system, all these SAN storage systems would be migrated to new DC. TSDC has got back up solution - HP data protector software and MSL Tape library, but due to old version of backup software, Cloud VMs could not be covered under backup service, solution of this problem is required. **Some plan inputs for TSDC migration is given at Annexure - III. However, interested bidders are required to assess existing infrastructure available in existing DC and proposed DC. On assessment, interested bidders are to submit solution (including Bill of Materials). All information required for planning TSDC migration and as built drawing would be shared by TSCA with interested bidder during their visit to new DC site, which would be useful for making EOI proposal.**

Cloud based migration may be considered for application migration to have minimum downtime.

iii. O&M service:

TSDC is also looking for 5 years DC O&M service for its new DC location.

iv. EOI proposal:

Submit a Technical proposal including Bill of Materials (BOM) to migrate TSDC from Old IT Building to new DC at IT Bhavan at Indranagar, Agartala. Existing IT & Non-IT equipment should be optimally utilized at new location by considering that these items are not END-OF-LIFE/Support and OEM are ready to provide support/AMC. Kindly note that new DC need to be Tier III compliant as per Uptime Institute/ TIA942 (latest) to the extent possible.

5. Eligibility Criteria:

The interested bidders should meet the following minimum qualifying criteria:

A. Work Experience:

Experience of having successfully completed similar works during the last 10 (ten) years ending previous day of last date of submission of EoI:

- a. Three similar works each costing not less than Rs. 10.00 Crores OR
- b. Two similar works each costing not less than Rs. 12.50 Crores OR
- c. One similar work costing not less than Rs. 20.00 Crores

Similar work means:

- a. Setting up of DC and
- b. Supply and installation of equipments in DC.

Other conditions related to work experience are:

- i. The cost of building construction for DC won't be considered for calculating cost in the above purpose.
- ii. Joint venture / consortia of firms / companies shall not be allowed and the bidders should meet the above criteria themselves. However, the bidder may have tie up with OEMs.
- iii. Certificates of Subsidiary/Group Companies: The companies/firms, who intend to get qualified on the basis of experience of the subsidiary/ parental company/group company, shall not be considered and vice versa. In case of a Company/firm, formed after merger and / or acquisition of other companies/firms, past experience and other antecedents of the merged/ acquired companies/firms will be considered for qualification of such Company/firm provided such Company/firm continues to own the requisite assets and resources of the merged/ acquired companies/firms relevant to the claimed experience.

B. Financial Strength:

- i. The Average annual financial turnover for last 3 years ending FY 16-17 shall be at least Rs. 100.00 Crs. The requisite Turn Over shall be duly certified by a Chartered Accountant with his Seal/ signatures and registration number. The Bidder should not have incurred any loss in more than three years during the last five years ending *31st March 2017*. The bidders are required to submit summarised page of Balance Sheet of last Financial Year (Audited) as on 31.03. 2017 and also summarised page of Profit & Loss Account (Audited) for last three years ending on 31.03. 2017.
- ii. The Bidders are required to participate strictly as per terms and conditions given in the Notice Inviting EOI documents of TSCA i.e. Notice Inviting EOI etc carefully. He should only submit his EoI if he considers himself eligible and he is in possession of all the documents required.

6. Instruction to the Bidders:

i. Set of Notice Inviting EOI Documents: The following documents will complete a set of Notice Inviting EOI documents:

- Notice Inviting EOI
- Addendum/Corrigendum, if any- Duly signed by authorized person.

ii. The Bidders are required to bid strictly as per terms and conditions given in the Notice Inviting EOI documents and not to stipulate any deviations.

iii. The bidders are advised to submit complete details with their Proposals as Pre-qualification Bid Evaluation will be done on the basis of documents submitted by the bidders with the technical proposal.

iv. Proposals with Incomplete /Ambiguous information will be rejected.

v. The bidders are advised in their own interest to submit their proposal well in advance from last date/time of submission of Proposals so as to avoid problems which the bidders may face in submission at last moment /during rush hours.

vi. However, after submission of the EoI bid, the bidder can re-submit revised EoI bid any number of times but before last time and date of submission of EoI bid as notified.

vii. Bidder has to submit copies of all the documents including valid GST, PAN No. If the bidder is found ineligible after opening of bid, his bid shall become invalid.

viii. Notwithstanding anything stated above, TSCA reserves the right to assess the capabilities and capacity of the bidders, in the overall interest of TSCA. In case, bidders capabilities and capacities are not found satisfactory, TSCA reserves the right to reject the bid.

ix. Certificate of Financial Turn Over: At the time of submission of proposal, the tender shall submit Affidavit/Certificate from Chartered Accountant mentioning Audited Financial Turnover of last 3 (three) years and Profit & Loss Account (Audited) for last 03 (Three) years ending as on 31.03.2017 in the prescribed format provided in the EoI duly signed.

x. Submission of Queries: The bidders(s) if required, may submit queries, if any, through E-mail at itdept-tr@nic.in OR in writing to the Member Secretary, Tripura State Computerisation Agency (TSCA), Govt. Of Tripura, IT Bhaban, Indranagar, Agartala, 799006 to seek clarifications within the date specified in Table: important information and dates. TSCA will reply only those queries which are essentially required for submission of Proposals. TSCA will not reply the queries which are not considered fit like replies of which can be implied /found in the Notice Inviting EOI or which are not relevant or in contravention to Notice Inviting EOI. Queries received after date specified will neither be entertained nor replied.

xi. Validity of Proposal: The prequalification of pre-qualified firms shall be valid for a period of one year. However, TSCA reserves the right to curtail or extend this period at its sole discretion.

xii. **Rejection of Proposals:** TSCA reserves the right to reject any or all Proposals or cancel/withdraw the invitation of EOI without assigning any reasons whatsoever thereof. The applicants are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the applicant being rejected. Applications made by telegram or telex, E-mail, and those received late or without processing fees will not be entertained. Overwriting should be avoided. Correction, if any, should be made by neatly crossing out, initialling, dating and rewriting. Pages of the pre-qualification documents are numbered. Additional sheets, if any, added by the contractor, should also be numbered by him. They should be submitted as a package.

xiii. References, information and certificates from the respective clients certifying suitability, technical knowhow or capability of the applicant should be signed by an officer not below the rank of Executive Engineer/Project Manager or equivalent for Govt./Semi Govt./ PSUs/ autonomous bodies Works and Director/Sole Proprietor/Partner of the Company or Firm as the case may be for Pvt. clients.

xiv. The applicant may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the works. The applicants are however, advised not to furnish superfluous information. No information shall be entertained after submission of pre-qualification documents unless it is called for by TSCA.

xv. If any information furnished by the applicant found to be incorrect either immediately or at a later date, would render him liable to be debarred from pre-qualification / tendering / taking up of work in TSCA.

xvi. Canvassing in connection with the Notice Inviting EOI is strictly prohibited, and such canvassed Proposals submitted by the bidder will be liable to be rejected.

Important Information:

xvi. The interested firms shall be required to submit Technical and Financial Proposals (Tentative Projected Cost) under EOI proposal and again on the Terms & Conditions of Tender Documents to be issued by TSCA later on.

xvii. Companies who participated in EoI process will only be allowed to participate in RFP/Tender process for TSDC migration activities.

xviii. Final Decision Making Authority: TSCA, Govt. of Tripura reserve the right to modify the eligibility criteria, to decide on cutoff date of implementation, to accept or reject any application, to annul the Pre-Qualification process, to reject all applications or accept new applications at any time, without assigning any reason or incurring any liability to the applicants.

7. Format 1: Financial & Similar Work Experience Details:

EoI For:

MANDATORY INFORMATION DOCUMENTS:

A. Turn Over Details

| Financial Year 2016-17 | Financial Year 2015-16 | Financial Year 2014-15 |
|-------------------------------|-------------------------------|-------------------------------|
| | | |

B. Similar Work Experience Details:

| Sl No | Name of the work with location | Date & Ref. no of completion certificate (If available) | Date of start | Cost of work | Reference document (Work Order/ Work Completion Certificate) to be attached, mention page no |
|--------------|---------------------------------------|--|----------------------|---------------------|---|
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Seal & Signature of the Bidder

8. Format 2: GENERAL INFORMATION OF THE BIDDER

| | | |
|---|--|--|
| 1 | Name of Applicant/Company | |
| 2 | Address for correspondence | |
| 3 | Official e-mail for communication | |
| 4 | Contact Person: Telephone Nos. Fax Nos. Mobile | |
| 5 | Type of Organization: An individual A proprietary firm A firm in partnership (Attach copy of Partnership) A Limited Company (Attach copy of Article of Association) Any other (mention the type) | |
| 6 | Place and Year of Incorporation | |
| 7 | Name of Directors/Partners in the organization | |
| 8 | Name(s) and Designation of the persons, who is authorized to deal with TSCA (Attach copy of power of Attorney) | |

Signature of Bidder with Seal

Annexure - I

TSDC at old DC location has got following Non-IT and IT services provisioned apart from required **civil (false flooring in server room, false ceiling), electrical, electrical cabling, LAN cabling**:

A. Non-IT equipments:

1. **Electricity power supply:** two 500 KVA transformer (1W+1S) provisioned from two different sub-stations for supplying power to LT panel. 3x200 KVA DG sets (N+1 or 2W+1S, in actual 1W+2S) installed to supply power to LT panel as alternative power source.
2. **UPS:** two 120 KVA UPS (1W+1W) provisioned only to supply power to IT equipment's like servers, storage, network and security devices as dual power source. 3x2 KVA UPS for supplying power to Non-IT equipments, user PCs, etc.
3. **Precision Air Conditioning (PAC) system:** three 17 TR PAC (N+1 or 2W+1S) installed in server room to control the temperature 20+-2 and control humidity.
4. **Comfort AC (CAC):** 7x1.8 TR CAC for utility areas.
5. **Fire Detection System (FDS):** Fenwel make FDS. Intelligent addressable fire alarm panel, photo-electric smoke detectors and multi sensor (smoke + heat) detectors above false ceiling, bellow false ceiling, bellow false flooring.
6. **HSSD solution:** Very Early Smoke Detection and Analysis System (VESDA) of Xtralias make.
7. **Fire Suppression System (FSS):** Novec1230 gas based FSS system for server room installed. For other area 3 different types (Foam, CO₂, Powder) of Fire Extinguishers provisioned.
8. **CCTV:** IP based CCTV of make Honeywell HD3CHX.
9. **Access Control System (ACS):** Honeywell Tema. Multi door access controller, Proximity card readers, biometric readers, electromagnetic lock, emergency door monitoring,
10. **Rodent Repellant System:**
11. **Water Leak Detection (WLD):**
12. **Building Management System (BMS):** Integrated BMS of Honeywell EBI R400.
13. **Public Address (PA) System:**
14. **Fire Safe Vault: Rittal S-14**
15. **Fire Exit Door (Panic Door):**

B. IT equipments:

1. **Network:**
 - i. **Core Router: 2 nos Cisco 7206 VXR (N+1 or 1W+1S)**
 - ii. **Edge Switch: 7 nos Cisco Catalyst 2960 for networking and different demilitarized zones.**
 - iii. **Core Switch: 2 nos Cisco Catalyst 4500 for secure zone, 2 nos Cisco 3650 for web zone.**
2. **Security:**
 - i. **External Firewall: 2 nos of Fortigate 3016B**
 - ii. **Internal Firewall: 2 nos of Cisco ASA5580-20-8GE-K9**
 - iii. **NIPS: 2 nos of Cisco IPS4270-20-4GE-K9**
3. **Server:** around 75 rack server and blade server including blade chasis.
4. **Storage:** 5 nos SAN storage system including one enterprise class SAN Hitachi VSP and another SAN EMC VNX.
5. **Tape Library:** two Tape Library with backup software for backup creation in tape drives.
6. **Monitoring:** different EMS tools of CA make.
7. **Cloud:** one Cloud solution with 4 servers and 2 Cloud management servers.

C. IT applications:

1. **Shared mode:** around 150 web applications and websites of around 50 departments/ directorates/ organization are hosted and running.
2. **Collocation mode:** SSDG, CCTNS, PWD – application running in separate hardware i.e. servers, etc but using TSDC network. TSCB CBS running on separate hardware and separate network.
3. **Cloud mode:** few applications are running in newly configured Cloud system.

Annexure - II

Data Center at new IT Bhavan building: in the 1st floor of new IT Bhavan building one Data Center (DC) with following DC non-IT infrastructure has been constructed in around 5000 sq ft area:

1. Power supply connection: including necessary transformer (3x500 KVA (2W+1S)), HT panel, LT panel, power distribution along with all necessary sockets, etc, electrical cabling,
2. PAC: 8x25 TR PAC in server room, 4x8.5 TR PAC in staging room & telecom room.
3. Heating Ventilation & Air Conditioning (HVAC): in other areas of DC.
4. Civil: false flooring and false ceiling in server room, staging room, telecom room.
5. Fire Fighting System: Sprinkler protection system, Fire extinguisher.
6. Fire Alarm & Detection System: Intelligent addressable fire alarm panel, photo-electric smoke detectors and multi sensor (smoke + heat) detectors above false ceiling, bellow false ceiling, bellow false flooring.
7. VESDA: laser based smoke detector, aspirator and filter.
8. Fire Suppression System (FSS): Novec1230 gas based FSS for Server room, Staging room and Telecom room. Cross zoned smoke detectors will send signal from fire alarm panel to the gas release panel and gas will be released after a chosen time delay. Manual gas release possible.
9. Access Control System: Multi door access controller on IP, Proximity card readers, biometric readers, electromagnetic lock, emergency release box, emergency door monitoring,
10. CCTV surveillance system: IP based CCTV system with DVR, fixed doom cameras.
11. WLD:
12. Rodent Repellent System
13. Building Management System (BMS): Integrated BMS for HVAC, lighting, hydraulics, water, electrical equipments. BMS Integrated with HVAC, PAC, UPS, DG set, Electrical meters, Access Control, Fire Alarm System- zone wise alarm, etc
14. PA System:
15. LAN Cabling:
16. DG sets: 3x200 KVA DG sets.
17. UPS: 2x200 KVA UPS for DC. 1x60 KVA UPS for supplying power to all intelligent equipment's.

Annexure - III

TSDC migration plan inputs:

- 1. Power:** TSDC has 2x500 KVA transformers and 3x500 KVA new transformers have been installed in new IT Bhavan building. It was planned that new building requires 4x500 KVA working transformers and 1 standby transformer. 2x500 KVA transformer require by DC at new building, 1x500 KVA transformer require by DIT and common utilities and 1x500 KVA transformer require by STPI for top 3 floors and half of HVAC's power load. It was planned that in first phase, one 500 KVA transformer of TSDC would be shifted to new building to make transformer count of new building to 4 (2 for DC, 1 for DIT, 1 for STPI). During migration period, TSDC at its old location would run on one transformer and during power outage existing DG sets of TSDC would run. In the new DC, power would be supplied from 2x500 KVA working transformer. Alternative power would come from 2x200 KVA DG sets.
- 2. UPS:** 2x200 KVA UPS has been installed for new DC, which will be mainly used for server, network and security equipment's of DC server, staging and telecom room. Another 60 KVA UPS installed in new DC, which may be used for supplying power to all intelligent non-IT equipments. UPS distributions needs to be checked to ascertain, whether it is fulfilling the DC requirements. If required, 2x10 or 2x20 KVA UPS may be supplied and installed for supply power to DC non-IT equipment's, before DC migration.
- 3. Cooling:** 8x25 TR PAC in server room, 2x8.5 TR PAC in staging room, 2x8.5 TR PAC in telecom room. Initial power load in server room would be less, so initial heat generation in power room will be less, so something needs to work out to minimize the usage of PAC in server room initially and to increase the usage of PAC with the increase in heat generation in server room.
- 4. Internet:** all internet connections would be terminated at Telecom room of 1st floor of new building; from there it would be extend to DC server room, staging room or other area of new building. Two internet connectivity would be made available to new DC by TSCA and SI has to provision for necessary Gigabit ports at Router level.
- 5. Building Management System (BMS):** New DC location has got separate BMS room. Integration of DC power systems (i.e. Transformer, DG sets, LT Panel, etc), DC UPS, DC PAC with BMS system need to be checked. BMS integration with HVAC for other area of DC, Fire Alarm & Detection System, VESDA, Fire Suppression system installed at server-staging-telecom room, Access Control System of DC area, Water Leak Detection (WLD) system, Rodent Repellent system need to be tested. CCTV monitoring for DC area need to be checked. PA system working for DC area needs to be checked.

- 6. Network Operation Center (NOC) and Security Operation Center (SOC):** new DC has got separate NOC and SOC room. Necessary Desktop Computers, screens require to provision.
- 7. Application shifting to alternate location e.g. NIC DC:** following steps may be followed:
 - i. Before migration one assessment would be conducted at TSDC to list all the applications hosted and running from TSDC with their dependencies (if any). Need to categories, which applications can be easily migrated with very less downtime by making another copy at NIC DC.
 - ii. All applications, which would be possible to move to NIC DC would be moved. Effort will be given to move all application running at TSDC Cloud to NIC DC.
- 8. Server hardware shifting:**
 - i. Cloud hardware shifting: 6 Cloud servers will be sifted first from TSDC to new DC. Power off 6 Cloud servers at TSDC. Physical movement of 6 Cloud servers along with their Blade Enclosure to new DC server room. Mount them in a server rack at new DC server room. Power on all Cloud servers.
 - ii. Shift SAN Storage: Hitachi VSP SAN Storage will be shifted first. Although there is a dependency – Storage based replication for DR solution at NDC, New Delhi is happening using Hitachi VSP SAN. Storage based replication for DR would be suspended during migration of Hitachi VSP and its re-configuration at new DC. Alternative- Full backup of all application with respective databases will be taken before Hitachi VSP migration.
- 9. Applications shifting to new DC:**
 - i. Cloud restart at new DC: Cloud services will be re-configured (work will be planned to minimize re-configuration effort) and restarted.
 - ii. Storage based replication for DR solution at NDC, New Delhi need to be established.
 - iii. TSDC Cloud applications would be shifted from NIC DC to TSDC Cloud at new DC.
- 10. Separate specific plans require to be prepared for migrating other applications and TSDC existing hardware equipments.**