

**Scope of Work & Technical Specification**  
**for**  
**Information Technology - Digital File**  
**Storage solution**

Local file storage solution	GGL Proprietary Information	
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## 1 Company Overview

Gujarat Gas Limited (GGL) is India's largest City Gas Distribution (CGD) player, with 27 CGD licenses spread across 43 districts in 6 states and 1 Union territory in the states of Gujarat, Maharashtra, Rajasthan, Haryana, Punjab and Madhya Pradesh and Union Territory of Dadra & Nagar Haveli.

GGL continues to hold the leadership position in CGD industry in terms of size and scale of operation, with more than 16 lakhs households, over 13,300 commercial customers, 584 CNG stations, close to 4,200 industrial units and over 31,300 kilometre of natural gas pipeline network. The Company currently continues to flow total gas volume close to 12 mmscmd.

GGL is committed to reach out to every possible natural gas user in its expanded GAs. The size and scale of the combined entity gives it the ability to achieve efficiencies and effectively manage the transformational changes in the sector. This major gain in productivity would benefit all the key stakeholders i.e. Customers and Shareholders.

GGL is recently awarded with Business Today's Best CEO Award 2020 in the Oil & Gas category and Business Standard STAR PSU Award 2020.

GGL is strategically aligned to energize India's natural gas vision

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## 2 Current Digital File Storage Achitecture

GGL currently has 70+ business offices where users are connected to central datacentre system via MPLS cloud. There are 20 plus digital file storage file system deployed at GA locationsn and corporate offices used as file share system to store file. Symantec Netbackup with VNX 5400 Storage appliance & Disk based backup appliance used to backup the data & services at central datacenter .

Pictures are given for referance only & shouldn't consider as final acceptance point for proposal;

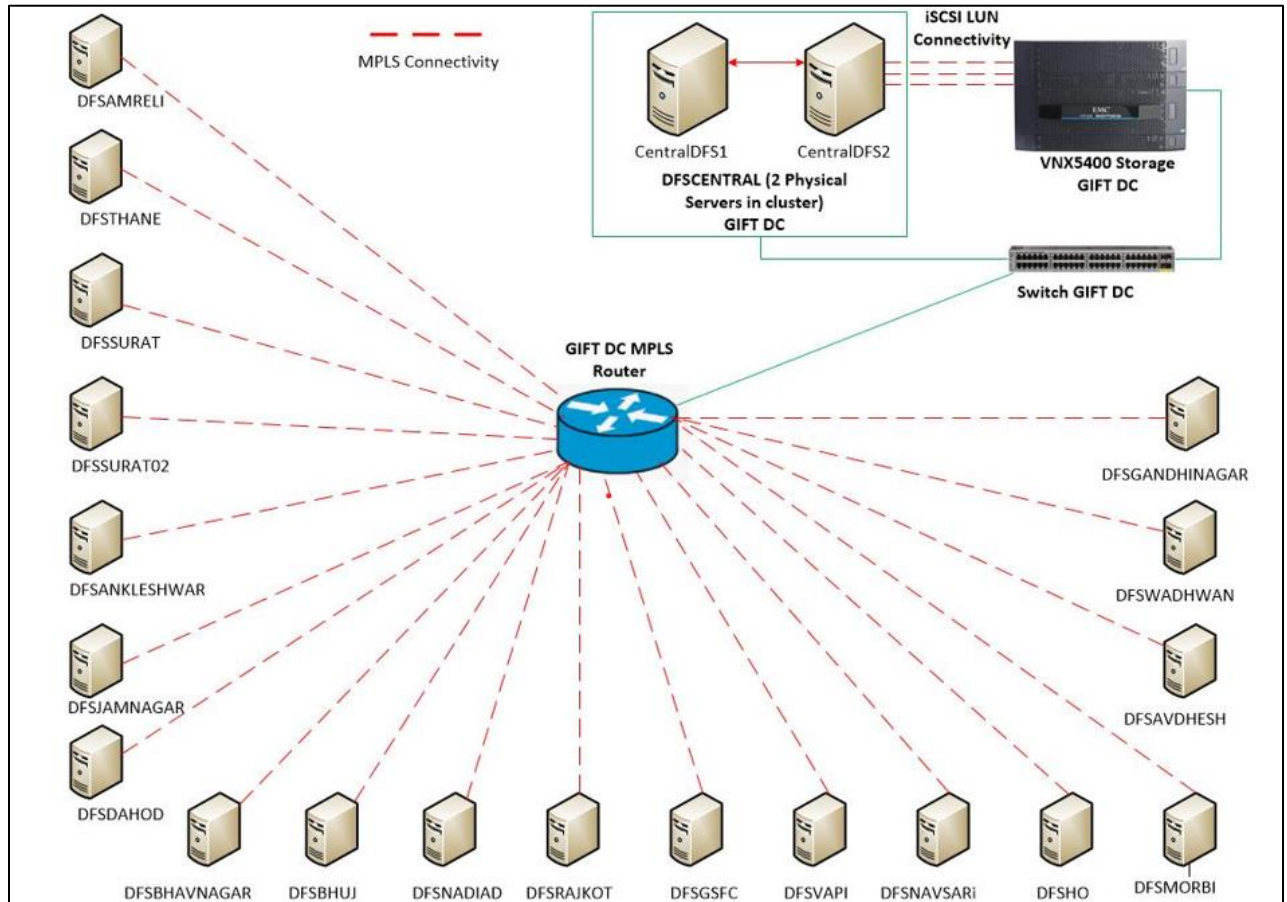


Figure 1 ; Current reference Architecture

## 3 Digital File storage solution specifications

### 3.1 Hardware Requirements

#### Specification-Minimum requirement

- Maximum 4U Rack mount appliance/storage/device/Server/hyperconverged server at GA/Branch offices and Maximum 10U rack mount appliance/device/server at central Datacentre at Gandhinagar
- Server class Intel Xeon Processor / any other compatible processor at all locations
- Min 32 GB and expandable upto 128 GB on RAM/Memory without needing replacement
- Redundancy at Power supply, Hard Disk, Network, SAN, controller level
- Min. 10 GB NW Ethernet card
- Min. 300 GB or higher \* 2 Disks with RAID 1+0 or equivalent for Basic/platform OS installation (OS should be installed in different partition / disk drives)
- Data partition at branch office storage shall be RAID 1+0 or RAID-DP or equivalent
- All Flash / SSD disks shall be provided for data storage at branch offices locations
- Storage response time shall be < 2 ms at Central Storage. Vendor shall provide storage solution accordingly and shall certify the solution for performance. All flash / SSD OR storage with desired performance (response time) shall be provided at Central location.
- Minimum usable HDD capacity requirement is mentioned in below table for user data storage

Category Type	Min HDD usable Capacity after RAID	HDD apacity Expandable upto or Higher	No of Locations
Category-I	Min 2TB	6 TB	12
Category-II	Min 4 TB	8 TB	8
Category-III	Min 6TB	10 TB	8
Central Storage	Min 160 TB	300 TB	1

- Dual/Redundant Power supply at Branch Offices and Central storage.
- Latest windows server class Operating System or any customized Operating system shall be part of solution alongwith license.
- Required power cables, LAN cables and FC cables shall be provided with solution post site survey and design discussion of solution with GGL.
- If solution requires virtualization, then VMWare shall be considered for virtualization and required licenses to be bundled with solution.
- All other accessories required to above hardware functional & management. (E.g. rack mount/slide kit, power cord, inter connect cable, screw, console cable, HW monitoring etc.) shall be included in solution.
- Installation & configuration of Remote offices/Branch Offices Solution shall be included in solution.
- Central storage to be compatible with existing DELL servers, HP HCI server and all other servers available in industry.
- Solution provided shall not be going out of mainstream support for next 5-years. Vendor need to provide appropriate certificate for the same in technical bid.
- All required software licenses – i.e. operating system, virtualization, high-availability management, failover software, replication, deduplication, compression, file / folder permission management, file/folder monitoring tool, monitoring / administration tool for solution and other required software shall be bundled with solution in required quantities

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- Data migration (old to new hardware ) and replication to central storage effort shall be included as a part of solution implementation

Central storage ( port to connect servers)

Host Ports and Back-end Ports	Network ports & Speed: iSCSI-10Gbps, Fiber-8Gbps & SAS-6Gbps, Copper
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## 3.2 Solution Features / Requirements

Following shall be included as a part of solution:

- Real-time Data replication between DC and GA / Branch offices
- Replication frequency shall be configurable at location and central location
- Data Compression, encryption and deduplication features
- Solution should get integrated with active directory for access management, quota management, file extension restrictions etc.
- Central Reporting / administration tool required with following features:
  1. Files monitoring and administration -i.e. File type wise, file date wise modification / access etc. reporting
  2. Access Management monitoring and administration – i.e. user wise access to folders at multiple devices and solution level, removal of access / file / folder permission centrally
  3. identification and modification (Add/delete) userwise and department wise permission across all offices
- Solution should also support Anti-virus / EDR / XDR solution integration
- Solution shall include a feature for data protection – i.e. virus / malware / ransomware protection at central storage level. This can be included by backing up data in storage / appliance / software / 3rd party solution that can protect data using WORM backup feature. This shall be sized according to solution.
- Backup data shall be quick and easy to restore -i.e. Time to Recover data (RTO) shall not exceed 24 hours at max.

### Digital File storage solution Installation at GA / Branch offices / Central Site.

- Physical positioning and installation of procured Hardware Devices
- Rack mounting.
- Power On & Test the appliance/devices.
- Installation and Configuration of all features mentioned above.
- Install/configure devices Management Software / operation system / virtualization software / RAID configuration / all other required software.
- Antivirus / EDR software shall be installed as provided by GGL.
- Connectivity with servers, switches and other required devices.
- Configure industry standard file sharing protocols.
- File share, Folder Level Quota management configuration.
- Configure Encryption, Compression, Archived, Content Indexed
- Integrate with AD Authentication, permissions
- Configure File Versioning with minimum 3 versions
- Integrate and replicate all data real-time with Central Storage
- Configure all storage related features – for example deduplication, replication, LUN provisioning, Cluster setup, Policy and Retention Settings etc.

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- Any other activity which is required to make device fully operational.
- Backup solution / WORM feature setup
- Testing of entire setup with GGL team
- Supporting closure of all internal-external audit and VAPT points etc.
- Installation, integration, and commissioning of all the supplied hardware and software shall be done by the OEM Engineer at GGL Location.

#### **Training to Gujarat Gas team.**

- GGL will nominate a team of 3-5 members for training of the solution
- Solution training for configuration, monitoring, troubleshooting, call logging, customization shall be provided by vendor for all hardware and software provisioned in the solution to nominated team.
- Required training material / documents / User manuals shall be provided at least 2 days ahead of training.
- Onsite Training at GGL office shall be for at least 3-5 days.

### **3.3 Other requirement**

- New solution should be able to keep track replication data (how much data is replicated to central master server and how much is left).
- Vendor / Bidder should ensure that there is zero data loss during data migration from existing DFS solution to new solution.
- Auditing features like when the file was deleted / who deleted it etc.
- If any location server goes down, user must be able to access the real time data from central server.
- OEM hardware support should be 24\*7.
- The Digital File storage solution shall not be end of life within 7 years from date of purchase
- All current/ future Technical event hosted by OEM should be consider in this inquiry.
- Suggest & use of best practice for implementation

### **3.4 Solution Design Document**

#### **Configuration Documents**

- Technical & solution specification document as per above mentioned architecture
- Best practices documents
- Any other available product specification and documents.

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## 4 Project/Implementation scope

Project scope would comprise of following:

1. Provide end to end installation management
  - a. Delivery of materials : within 12 weeks from the date of award of PO.
  - b. Installation, Configuration of devices for all locations, data migration and go-live – within 16 weeks from the date of delivery of materials
  - c. Training to GGL team

All delivery, installation and configuration would take place at GGL locations mentioned above.

The scope includes following points / activities to be carried out by a vendor.

### 4.1 Design and architect the solution

- Design and Validate the Bill of Material
- Clearly state any other hardware/software to be procured from other parties to complete the solution

#### 4.1.1 Project management

Following are some of the expectations

- Project Manager to act as single point of contact for all the installation activities
- Advance notification for dependencies with GGL and any other vendor required during installation / configuration
- All the Installation & configuration services have to be delivered by certified OEM engineers only
- Basic and advanced Level of trainings to GGL representatives for
  - Hardware setup and configuration
  - Software configuration
- Proper handover to GGL team and vendor operational team with complete documentation on configuration and setup
- Testing for all equipments (to check redundancy)
  - Test Plans with desired results

#### 4.1.2 Support Model for post go-live support during Warranty support and AMC period

- Comprehensive parts, Labour & configuration warranty/support for 5 years for entire solution and AMC period
- 24 x 7 with 4 hour Response and 24 hours resolution SLA support for complete solution including all supplied hardware /software/3<sup>rd</sup> party solution/devices etc.
- Warranty start date shall be considered from the date of go-live sign-off by GGL. Go-live will be considered only if solution is operational at all GGL locations.
- Vendor shall have back-to-back OEM support for all hardware and software in the name of Gujarat Gas

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- Gujarat Gas shall be able to access OEM website and shall be able to track support contract and log the ticket directly with OEM only if required
- All upgrades for firmware, operating system upgrades, software upgrade shall be provided by OEM / vendor at no additional cost.
- Support from certified engineers round the clock for any queries
- Faulty hardware replacement, Version upgrades, quick fixes and security patches to be made available to GGL at no extra cost.
- The product to be supported by any nominated implementation partner supported by OEM.

#### 4.1.3 Support Mechanism

- Centralized telephone number shall be provided to GGL as single point of contact for logging call.
- Vendor/Partner shall provide Escalation Matrix right up to the highest level of the organization
- Vendor must give ticket number for logged calls and mechanism to track and trace back all the history of earlier tickets.
- Vendor/Partner should have back to back support with OEM in case supplier/ service provider for the complete period of warranty
- Support for Troubleshooting and maintenance.
- Hardware related issues must be ensured on site till resolution of problem, all material delivery / pickup at GA / BRANCH Office will be vendor responsibility
- All Configuration supports and new requirements related to devices must be provided,
- All latest releases and updates should be available and updated without additional cost.

#### 4.1.4 Onsite engineer for post go-live support

- Vendor shall provide on-site support at GGL office during post go-live phase for at least one week
- L2 / L3 level support engineer shall be stationed at GGL office for following
  1. Solution monitoring and trouble shooting
  2. Performance tuning if required
  3. Call logging
  4. Vendor / OEM engagement for support calls
  5. Knowledge transfer

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## 5 Other Terms and Conditions

### 5.1 Payment Terms

Payment against the Invoice will be done within 30 days after the correct invoice is received and signed /agreed by contract owner as per General terms and conditions.

Invoicing frequency shall be as below:

- 80% of the total Solution Cost (Refer Sr. No. 1 of the SoR) – Upon delivery of material at all locations
- 20% of the total Solution Cost (Refer Sr. No. 1 of the SoR)- Upon go-live sign-off (i.e. Implementation of complete solution across GGL offices)
- AMC Support for 6<sup>th</sup> year - At the beginning of the 6<sup>th</sup> year and submission of required Bank Guarantee and invoice to GGL
- AMC Support for 7<sup>th</sup> year – At the beginning of the 7<sup>th</sup> year and submission of required Bank Guarantee and invoice to GGL

### 5.2 Penalty Terms

Sr No	Parameter	Delivery/ Implementation period	Penalty
1	Central storage Material delivery	12 weeks from PO date	Per week 0.25% of PO value not exceeding 2.5 % of PO value
2	Digital File storage material delivery	12 weeks from PO date	Per week 0.25% of PO value not exceeding 2.5 % of PO value
3	Central Storage Mounting/Installation with Data Migration of existing Storage as per GGL requirement	16 weeks from material delivery	Per week 0.25% of PO value not exceeding 2.5 % of PO value
4	Mounting/Installation with Data Migration of existing Storage, connectivity with central storage as per GGL requirement	16 weeks from material delivery	Per week 0.25% of PO value not exceeding 2.5% of PO value
5	Uptime SLA of 99% at branch offices and 99.9% for solution deployed at Central Data Centre to be measured at <b>Quartely</b> and submitted to GGL team during warranty support phase	Uptime SLA	0.05% of PO value for each SLA breach at individual location not exceeding 2.5% of PO value 0.25% of PO value for each SLA breach at central location not exceeding 2.5% of PO value

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### 5.3 Delivery Schedule

- a. Material delivery 12 Weeks from the date of award of PO/Contract.
- b. Installation, Configuration of devices for all locations, data migration and go-live – within 16 weeks from the date of delivery

### 5.4 Defect Liability: Applicable

Defect Liability Applicable period shall be 90 days from go-live of solution

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## 6 Annexure-I (Digital File Storage Soution at GA /BRANCH Office)

Sl.No	Parameter	Hardware Specifications of Digital File storage Storage at GGL Locations				Compliance (Y/N)
1	Converge / Storage	SAN/NAS/CIFS/NFS				
2	Capacity & Scalability	Category Type	Min HDD usable Capacity after RAID	HDD Capacity Expandable upto or Higher	No of Locations	
		Category-I	Min 2 TB	6 TB	12	
		Category-II	Min 4 TB	8 TB	8	
		Category-III	Min 6 TB	10 TB	8	
3	No Single point of Failure	Each component should have redundancy like dual power supply, RAID Hard disks and redundant network / FC ports etc.				
4	Raid Support & Virtualization	RAID 1+ 0, RAID-DP or equivalent . Should support Vmware ESXi 6.7 and above / Microsoft Hyper-V / Physical Servers				
5	Data Protection	Snapshot, Clones, Mirror & Replications. Data should be protected from Ransomware, virus , malware protection attacks.				
6	Host Ports and Back-end Ports	Network / FC Ports				
7	Thin Provisioning and Space Reclaim	Thin/Thick Provisioning and Space Reclaim required.				
8	Disk Drive Support	All flash / SSD disks (Min read speed / Max write speed)				

SI.No	Feature	Technical Specifications / Requirement of Digital File storage Storage at GGL Locations	Compliance (Y/N)
1	Protocols	Digital File Storage Soution should have Native Windows user experience for SMB – SMB v2 and v3 support, ensuring all vulnerabilities are taken care.	
2	Accessibility	Digital File Storage Soution should support MS Explorer Directory/Folder views	
3	Authentication	Digital File Storage Soution should Integrate with Active Directory for permission management	
4	Features	Digital File Storage Soution should have functionality to configure the below:	
		Auditing features like when the file was deleted / who deleted it etc	
		Data replication status report, track replication data (how much data is replicated to central master server and how much is left).	
		File share, Folder Level Quota management configuration	
		Recovery of deleted data from Digital File storage	
		Auditing features such as last access / modified / deleted	
		Data Encryption, Compression, Archived, Content Indexed	
		Configure all storage related features – for example deduplication, replication, LUN provisioning, Cluster setup, Policy and Retention Settings	
		Deduplication at Share/folder level	
		Restriction of file extensionwise	
		File Versioning with minimum 3 versions	
		Solution should support reporting functionality for AD user wise / department wise / File extension wise / File and Folder Size wise	
		Integration with Existing Windows DFS Namespace	
		WORM feature	
5	Integrated and certified solution	Storage OEM/Vendors has to propose Digital File Storage solutions which are certified with their respective solutions. OEM has to submit the letter of OEM contract and support alignment with certified Digital File Storage for the support/contract period.	

		Storage OEM's has to submit their ISV certified document.	
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## 7 Annexure-II (Central Storage at Datacentre )

Sl.No	Parameter	Hardware Specifications of Central Storage at Datacentre	Compliance (Y/N)
1	Converge / Storage	SAN/NAS/CIFS/NFS	
2	Operating System & Clustering Support	Native OS with clustering support between Storage Controllers	
3	Capacity & Scalability	Minimum 160TB and expandable upto 300TB or more	
4	Cache	1 TB or more	
5	No Single point of Failure	Each component should have redundancy like dual power supply, dual controllers, RAID Hard disks and redundant network / FC ports etc.	
6	Disk Drive Support	All Flash OR with desired performance of response time. Storage shall provide < 2 ms response time.	
7	Raid Support & Virtualization	RAID 0 / 1 / 3 / 5 / 6 / 10. Should support Vmware ESXi 6.7 and above / Microsoft Hyper-V	
8	Data Protection	Snapshot, Clones, Mirror & Replications. Data should be protected from Ransomware attacks.	
9	Host Ports and Back-end Ports	Network ports & Speed: iSCSI-1Gbps, Fiber-8Gbps & SAS-6Gbps, Copper	
10	Global Hot Spare	1 Disk per 4 Disks	

Sl.No	Feature	Technical Specifications / Requirement of Central Storage at Datacentre	Compliance (Y/N)
1	Integrated Solution	The Central storage must be factory integrated appliance/devcie/storage from single OEM of both hardware of Central & Digital File storage/server/appliance..	
2	Architecture	Storage should be fully distributed, symmetrical and scale-out architecture with De-duplication facility , 10Gbps LAN Ports , fully re-dundant node should be a separate appliance or physical servers.	
3	Availability Configuration	The Storage nodes in the Central storage must be provided with dual controllers. The Access nodes should be provided in minimum N+1 configuration.	
4	Data Protection Configuration	Support data protection against 4 or more simultaneous drive failures across the storage nodes. Disk and node rebuilds should leverage protection from within the same site so as to avoid consuming expensive and limited WAN bandwidth and minimize rebuild times during rebuild operations.	
5	Data Protection	Central Storage solution should sustain fully two node failure & Two Disk Failure at a same time	
6	Resilience	The Central storage must be enterprise class Central storage that provides no single point of failure, high resiliency, redundant components	
7	Capacity & Scalability	Solution must be based on Central storage which should be supplied with minimum 160TB Usable capacity. Same shall be scalable upto 300 TB or more ..	
8	Scaling Options	Central storage must support independent scaling & decoupling of compute capacity and storage capacity to allow flexibility in expansion. Proposed Central storage Should be able to scale up, on compute and capacity resources independently, without any impact to users and applications.	

Sl.No	Feature	Technical Specifications / Requirement of Central Storage at Datacentre	Compliance (Y/N)
9	Storage Options	The proposed Central storage solution must provide flexibility of using different types of storage like SAN Storage, Digital File Storage capacity, S3 compliant Storage, NFS volumes , CIFS Shares etc.	
10	Protocols Support	The proposed solution must be configured with Restful API, HTTPS, S3, CIFS, NFS Protocols for data access to applications	
11	Self-healing	Should support auto-healing & auto-repair features. Central Storage shall provide versioning capability to protect and record Central-level changes. Central Storage must support automated recovery of data from replica copy if Central is found corrupt.	
12	Retention & Compliance Features	The proposed Central storage must provide secure data retention features such as WORM feature, versioning, Central Level retention, privilege delete, retention hold, event-based retention.	
13	Data Consistency	Central storage should support strong data consistency for data reading after immediate data writing	
14	Automated Tiering	Central storage must be supplied with ability to tier objects from Digital File disk to external cheaper storage tier like S3 compliant storage, Public Cloud, NFS Volume etc.	
15	Optimization	Central storage should support deduplication/Single Instance Storage & Compression functionality to optimize the storage capacity usage	
16	Management	Central based Storage shall be managed and monitored via integrated UI, CLI & APIs.	
17	Multi-tenancy	Storage shall support multi-tenant architecture including ability to apply quota limits on specific sections within the object store. Central storage should allow different administrative rights over different tenants, and logical containers/buckets inside individual tenants.	
18	Metadata & Search	The Central storage must be provided with metadata-based search along to support discovery kind of requests, which must be tightly integrated with proposed Central storage,	
20	License Packaging	Central storage should be provided with all features available with it, any hardware, software, and license required to use these features should be provided along with Central storage.	
21	Features	Digital File Storage Soution should have functionality to configure the below:	
		Auditing features like when the file was deleted / who deleted it etc	

		Data replication status report, track replication data (how much data is replicated to central master server and how much is left).	
		File share, Folder Level Quota management configuration	
		Recovery of deleted data from Digital File storage	
		Auditing features such as last access / modified / deleted	
		Data Encryption, Compression, Archived, Content Indexed	
		Configure all storage related features – for example deduplication, replication, LUN provisioning, Cluster setup, Policy and Retention Settings	
		Deduplication at Share/folder level	
		Restriction of file extensionwise	
		File Versioning with minimum 3 versions	
		Solution should support reporting functionality for AD user wise / department wise / File extension wise / File and Folder Size wise	
		Integration with Existing Windows DFS Namespace	
		WORM feature	

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## 8 Annexure –IV Storage solution to be deployed at following locations

Sr. No.	Location-DFS Solution	Category Type	DFS Storage Capacity (TB)
1	AMRELI	Category-I	2
2	NAVSARI	Category-I	2
3	DAHOD	Category-I	2
4	BHUJ	Category-I	2
5	ABUROAD	Category-I	2
6	UJJAIN	Category-I	2
7	RATLAM	Category-I	2
8	GURDASPUR	Category-I	2
9	FATEHPUR/SIRSA/SRIMUKTSAR	Category-I	2
10	NARMADA	Category-I	2
11	SANAND	Category-I	2
12	DNH-SILVASSA	Category-I	2
13	THANE	Category-II	4
14	JAMNAGAR	Category-II	4
15	NADIAD	Category-II	4
16	AHMEDABAD-GSFC	Category-II	4
17	BHAVNAGAR	Category-II	4
18	VAPI	Category-II	4
19	AMRITSAR	Category-II	4
20	BHATINDA	Category-II	4
21	SURAT	Category-III	6
22	ANKLESHWAR/BHARUCH	Category-III	6
23	GANDHINAGAR SECTOR 5	Category-III	6
24	AHMEDABAD-PARIMAL	Category-III	6
25	AHMEDABAD-AVDHESH	Category-III	6
26	MORBI	Category-III	6
27	RAJKOT	Category-III	6
28	SURENDRANAGAR/WADHWAN	Category-III	6
29	STT – DC – Gift City	Central Storage	160

## 9 Annexure-IV Buy back Digital File storage list

All buyback devices to be taken by bidder post data wiped off and disk degauss as part of this contract. Buy Back shall be on AS IS WHERE IS basis.

Sr No#	Server/ Devices Name	Location	Make	Model	Serial Number	Remarks
1	DFSTHANE	Thane	FUJITSU	RX1330 M3	YMDH005267	
2	DFSSURAT02	Surat02	FUJITSU	RX1330 M3	YMDH005261	
3	DFSAMRELI	Amreli	FUJITSU	RX1330 M3	YMDH005263	
4	DFSANKLESHWAR	Ankleshwar	FUJITSU	RX1330 M3	YMDH005262	
5	DFSSURAT	Surat	FUJITSU	RX1330 M3	YMDH005266	
6	DFSJAMNAGAR	Jamnagar	FUJITSU	RX1330 M3	YMDH005268	
7	DFSDAHOD	Dahod	FUJITSU	RX1330 M3	YMDH005260	
8	DFSGANDHINAGAR	Gandhinagar	FUJITSU	RX1330 M3	YMDH005264	
9	DFSHO	Parimal	FUJITSU	RX1330 M3	YMDH005265	
10	DFS 1 MGMT Console	Gift City	FUJITSU	RX1330 M3	YM3R005008	
11	DFS 2 MGMT Console	Gift City	FUJITSU	RX1330 M3	YM3R005007	
12	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R005005	
13	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R004998	
14	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R005004	
15	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R005002	
16	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R005000	
17	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R004997	
18	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R005003	
19	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R005001	
20	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R005006	
21	DFSABDHESE	Abdhe	FUJITSU	RX1330 M3	YM3R004999	
22	Central Storage	Gift City	EMC	VNX 5400	CKM00153500112	

## 10 QHSE Requirements

### SCOPE AND APPLICATION

Contractor/Service providers are the key stake holder and an integral part of Gujarat Gas Ltd (GGL's) business. Contractors'/Service provider' Quality, Health, Safety and Environment (QHSE) performance reflects on the company's business performance and reputation. GGL has established QHSE Management Systems, Procedures & Guidelines to ensure compliance with GGL's QHSE requirements. These requirements apply to all jobs whilst conducting work for GGL including; Project, Construction, Operation & Maintenance, Field Operations and Services within any given contract or agreement.

The overall objective of QHSE management in contract/agreement is to improve the company and Contractor's/Service providers' QHSE performance in all aspects of activities. Active and on-going participation by both the GGL and Contractor/Service provider is essential to achieve this objective.

### RESPONSIBILITIES

It is responsibility of GGL management and staffs to ensure that all Contractors/Service providers work under their direction & control are provided with relevant Integrated Management System (IMS) Policies, Procedures & Guidelines that describe the GGL requirements for undertaking work within the company. It is also the responsibility of Contractors/Service providers to ensure that their staff are informed of and comply with GGL's requirement whilst working for the company.

GGL HSE department provides advice and assistance on QHSE requirements across the complete spectrum of all work activities. Contract Owner (Department Head) and Contract Holder (Work in-charge) are responsible to ensure safe execution of work/service include the following:

1. Ensuring that the QHSE Policy, Procedures & Guidelines are known and understood by all contractors'/service providers' staff and work force
2. Monitoring, Inspecting & Auditing execution of work, activities to ensure adherence to the QHSE compliance requirements

The Contractors'/Service provider' will take the responsibility for implementation of GGL's QHSE Policy, Procedures, Guidelines and other requirements with the advice and support of the GGL's Contract Owner / Contract Holder and HSE representative.

Contractor/Service provider to ensure that all aspects relating to QHSE are adequately addressed and implemented in accordance with the GGL QHSE requirements and QHSE Management Plan, which shall include the management processes and activities to be implemented during the course of work with GGL.

Contractor/Service provider shall be responsible for ensuring that adequate HSE resources are put in place to enable satisfactory implementation of QHSE Management Plan.

This responsibility also applies to ensure the Health and Safety of the people are directly and indirectly engaged / involved whilst working or present at GGL's work area / sites.

### EXECUTION

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3. Contractor/Service provider is responsible to ensure the with GGL QHSE requirements. GGL overall QHSE performance is directly influenced by the contractors' performance.
4. Contractor/Service provider is responsible for QHSE compliance monitoring at site/work activities to ensure that work/activity is performed in a safe manner. Moreover, they are responsible for reporting of all incidents, Hazard and Near Miss that might happen during work/activity
5. Contractor/Service provider shall follow and comply with GGL "Work Permit" system During work execution and activities, GGL team will regularly monitor and evaluate the performance of the Contractor/Service provider to identify the shortfalls and weaknesses and assist to improve the overall performance including QHSE performance through CPAR process (as applicable)
6. We believe that everyone at GGL, Employees, Contractors, Service providers and Associates have the right to go home safely to their families.

<b>QHSE Defaults and Penalties (As applicable)</b>		
<b>SN</b>	<b>Description</b>	<b>Penalty amount (will be decided by Contract Owner)</b>
1	Lost Time Injury	Rs. 2500 / Instance
2	Non-compliance - HSE Engineer	Rs. 500 / instance
3	Un authorised work	Rs. 500 / instance
4	Work without PtW/WA	Rs. 500 / Instance
5	Non-compliance - Safety Training Card (STC)	Rs. 500 / instance
6	Non-compliance - Health Check up	Rs. 500 / instance
7	Non-compliance - PPEs	Rs. 500 / instance

Remark: Issuance of MEMO against HSE non-compliances including above mentioned defaults shall be decided by Contract Holder. Contract holder shall consider penalty for all defaults and levy maximum of amount applicable and not the sum of all penalties applicable in above table.

#### QHSE GUIDELINE (AS APPLICABLE) FOR ALL TYPE OF CONTRACTS

- Contractor/Service provider...
- a) Shall ensure that all staff/work force comply with the requirements of the GGL HSE Management System, QHSE policy, standard, procedures, guideline, plan & Life Savers at work site
- b) Shall ensure issuance of Identity Card to their team members
- c) Shall apply and obtain Permit to work (PtW/WA) before start of the work
- d) Shall arrange work related Personal Protective Equipment (PPEs) for their staff/work force and ensure proper use during the execution of job
- e) Shall carry out the work within the duty hours/office hours. No Work shall be carried out without permission of GGL's representative beyond the official duty hours unless otherwise agreed upon prior to start of work and recorded appropriately
- f) Shall ensure that all tools, tackles, appliances, machines, vehicles, instruments or other equipment are Fit for Purpose and maintained safe working condition at all times and are used only by authorized and competent persons
- g) Shall ensure that all the QHSE requirements are properly discussed for any sub-contracted activities with GGL. No such activity shall be performed without clearance from GGL management

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- h) Shall ensure that all Hazards, Near miss, accident, incident, injuries are reported promptly to GGL. Action arises due to reported Hazards, Near miss, incident investigation; audit/inspection shall be closed out as per agreed timelines with site in-charge
- i) Shall deploy staff & work force trained, qualified and competent for the work and well aware of risks and mitigation action/s for the activities undertaken
- j) Shall make necessary arrangements for safe custody of equipment, materials in stores/warehouse and at site shall ensure safe transportation, storage and handling of materials to prevent any damage which may impair safe performance of the equipment / material etc

**Shall initiate immediate actions to hospitalize injured person(s)**

- k) Shall ensure an injury free, incident free workplace and protect people from harm caused by work activities
- l) Shall ensure use of seatbelts while driving four-wheeler and use of crash helmet for Two wheeler riders during job execution
- m) Shall ensure Lock out and Tag out (LOTO) after de-energizing and double check before starting any jobs. In case of conducting job for the purpose of fault finding & monitoring of voltage & current it is to be considered live working and all PPE'S to be worn to avoid exposure of flash arc current
- n) Shall take note that the use of open wires in sockets, use of wires with tape joints shall not be accepted at work site.
- o) Shall ensure proper collection, storage and disposal of solid / liquid waste as per GGL procedure and guideline
- p) Staff/work force shall not smoke or resort to misuse of drugs, medicines or alcohol while on duty
  - In case of any incident like fire, gas leakage etc. due to gross negligence of the Contractor's staff/work force, GGL reserves the right to impose penalty up to actual damage cost and or termination of work order depending upon the gravity of the situation.
  - Any breach of the QHSE requirements shall be deemed by the company to be a material breach of the terms & condition of the contract. GGL shall be entitled to take appropriate actions including instructing the contractor to (a) remedy the breach; (b) suspend the work or (c) terminate the contract.

All activities shall be carried out as per GGL's documented procedures and QHSE requirements; deviation from it shall be dealt with very strictly.

Contractor shall ensure that all tools, appliances, machines, vehicles or other equipment, are in safe working condition

- All activities shall be carried out as per GGL documented procedure and HSE requirement, and deviation from it shall be dealt with very strictly.

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