



PURCHASE OF HYPERCONVERGE INFRASTRUCTURE (HCI) TECHNOLOGY SOLUTION

Technical Specifications

THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE SUPPLY, DELIVERY, INSTALLATION, CONFIGURATION, COMMISSIONING, TESTING AND IMPLEMENTATION OF HYPERCONVERGE INFRASTRUCTURE (HCI) TECHNOLOGY SOLUTION TO GENERAL SANTOS CITY WATER DISTRICT.

Item No.	Quantity	Specification	Statement of Compliance	Bidder's Proposal
1.0	SUPPLY, DELIVERY, INSTALLATION, CONFIGURATION, COMMISSIONING, TESTING AND IMPLEMENTATION OF HYPER-CONVERGE INFRASTRUCTURE (HCI) TECHNOLOGY SOLUTION.			
1.1	MINIMUM TECHNICAL REQUIREMENTS The bidders are not precluded from offering higher specifications provided that the functionality of the system is met.			
		<p>The proposed combined network, storage, and compute cloud platform or Hyperconverged Infrastructure Systems Solution (hereafter called "HCI Solution") must include the following:</p> <ul style="list-style-type: none"> • Commodity off-the-shelf HCI Solution must be appliance based infrastructure. Both software and hardware must be on the same brand. • Must have minimum of two (2) servers or nodes to form a cluster for high availability and performance. 		
1.1.1	HARDWARE REQUIREMENTS			
	Two (2) units	<p>SERVER NODES</p> <ul style="list-style-type: none"> • provides HCI technology on each server node • With 1U or 2U rack mounted form factor • with bundled railing equipment • scalable component architecture • Should implement VMWare hypervisor 		
		<p>CPU: Each server or node must have the following minimum CPU requirements:</p>		



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		<ul style="list-style-type: none"> • 2 x Intel Xeon Gold Scalable Processors or equivalent • Total of 32 Cores Processor per Node (with 16 cores per CPU) Processors or equivalent • Base frequency: 3.1GHz • Turbo frequency: min. 3.6GHz • Cache: min. 48 MB L3 cache 		
		<p>RAM:</p> <ul style="list-style-type: none"> • min. 512 GB capacity • Scalable • Must have extra dimm slots (Mother Board) for adding new RAM for future upgrade. • Type: min. DDR4 SDRAM • Form factor: Load Reduced Dual Inline Memory Module (LRDIMM) • ECC Memory 		
		<p>Storage Controller:</p> <ul style="list-style-type: none"> • Hardware RAID controller • Supports RAID 0,1,5,6,10,50,60 • Bandwidth: min. 12 GB/s SAS, 16 GB/s SATA • Cache: min. 4 GB • Solid State Drive(SSD) Compatible • Rapid Parity Initialization (RPI) 		
		<p>Storage IO Accelerator:</p> <ul style="list-style-type: none"> • dedicated data deduplication, compression and optimization to offload the same function from the server • bundled drivers and licenses, if any 		
		<p>Storage Disks:</p> <ul style="list-style-type: none"> • min. 10 TB raw disk array capacity • min. 1.92 TB individual raw disk capacity • all flash SSD drives • hot swappable 		



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		<p>Networking: Each server or node must have the following minimum network requirements:</p> <ul style="list-style-type: none"> • 1 x 4-port 1 Gbit Ethernet adapter • 1 x 2-port 10Gbit SFP+ network adapter • 1 x remote management port • Supports NIC Teaming, Jumbo Frames, Network Partitioning, VMware NetQueue, Tunneling offloads (VxLAN, NVGRE) • Cables and Transceivers should be included. 		
		<p>Power Supply:</p> <ul style="list-style-type: none"> • Redundant power supply 		
1.1.2	NETWORKING SWITCH REQUIREMENT			
	TWO (2) UNITS	<p>LAYER 3 CORE SWITCH Each Core Switch must have the following minimum requirements</p> <ul style="list-style-type: none"> • Capable for Stacking • 24 – Port data Only • 8 x 10GE Network Module • Cables and Transceivers should be included. • Redundant Power Supply 		
1.1.3	MINIMUM SOFTWARE REQUIREMENT			
	<ul style="list-style-type: none"> • Latest versions available in the international market compatible with hardware specifications at the time of bid submission. • Appropriate license coverage for hardware specifications on all software systems • The selected bidder must configure all software necessary to run and integrate the components into a working system. 			
	FEATURE REQUIREMENTS			



	<ul style="list-style-type: none"> • The proposed HCI Solution must be an enterprise-class storage, compute, and virtualization services to run nearly any applications. • The proposed HCI Solution must combine virtualization, compute, storage area networking and storage in an appliance-based solution. • The proposed HCI Solution must support the following hypervisor: VMWARE ESXi. • The proposed HCI Solution must not be proprietary for only specific Virtualization software and it must be run if migrate to other platform. • The proposed HCI Solution must support the following Operating System: Latest Windows Server 2019 • The proposed HCI Solution must support 10 Virtual Machines with Latest Windows Server 2019 Licensed OS each. • The proposed HCI Solution must have deduplication and compression. It must have the ability to enable/disable these data services to save resources. • The proposed HCI Solution must be all flash models in the same cluster. • The proposed HCI Solution must be able to migrate existing Application of GSCWD. 		
1.1.4	DEPLOYMENT REQUIREMENTS		
	<ul style="list-style-type: none"> • The proposed HCI Solution must be deployed using commodity off-the-shelf servers. • The proposed HCI Solution must be configured and deployed using web-based tools for simplicity and ease of deployment. • The proposed HCI Solution must be fault tolerant, with no single points of failure and performance bottlenecks in its architecture. • The proposed HCI Solution must have the capability for quick remediation of hardware or software problems. • The proposed HCI Solution must distribute data and workloads on at least 2 servers to avoid overloading remaining servers in case of server failure. • The proposed HCI Solution must deliver a solution that allows applications to move from one server to another in case of server failure or need more resources. This capability must be either automatic or manually controlled. 		
1.1.5	SCALABILITY AND EFFICIENCY REQUIREMENTS		



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	<ul style="list-style-type: none"> The proposed HCI Solution must be upgradable through scale up or scale out options. These upgrade options can be done online and are non-disruptive. 		
1.1.6	EASE OF USE REQUIREMENTS		
	<ul style="list-style-type: none"> The proposed HCI Solution must use a single management console and advanced server management software that provides a centralized platform for controlling Virtual machine environments, not requiring dedicated machines, appliances, or additional software or licenses. Single point of management must be regardless of solution size or scale. This reduced management complexity, training requirements, and allow quick identification and resolution of issues. The proposed HCI Solution must provide a single interface in upgrading the network operating system, hypervisor, storage firmware, and other software, allowing ease and simplicity of management. 		
2.0	EQUIPMENT AND SYSTEMS SOFTWARE IMPLEMENTATION		
2.1	Pre-Installation		
2.1.1	The Contractor shall perform project management activities during the implementation of the project.		
2.1.2	Provide detailed integration and migration/work plan specifying installation design, detail and schedule of activities, and network diagram showing connectivity to existing GSCWD data center local area network and the existing GSCWD Infrastructure. The integration and migration plan shall indicate the respective responsibility of all concerned parties including GSCWD personnel.		
2.2	Actual Installation and Initial Configuration		
2.2.1	Assemble server and its component;		
2.2.2	Install server and peripherals;		
2.2.3	Install, setup and configure operating System; with Partition, RAID setup;		
2.2.4	Install, setup and configure virtualization software; data storage hardware; and data storage system;		
2.2.5	Setup and configure/re-configure of other/existing data center equipment (e.g. configuration and setup of SAN / Top of Rack Switch, interoperability configuration of the existing GSCWD setup);		



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2.2.6	Provide server connectivity to existing GSCWD network, including materials needed for the purpose. This includes provision for the installation of cables/insulation using industry standard materials;		
2.2.7	Migration of Existing GSCWD Applications;		
3.0	QUALIFICATION OF SUPPLIER		
3.1	<ul style="list-style-type: none"> • Bidders must be an Authorized Distributor, Reseller, Partner or Dealer of the Equipment Manufacturer, maintenance service provider as attested through a Notarized Original Copy of Certification to be submitted to the Chairperson, GSCWD Special Bids and Awards Committee. The certification must be written on the letterhead of the company and signed by its duly authorized representative. In the case of a reseller, partner or dealer, the certification must be written on the letterhead bearing the name of the local distributor and signed by its duly authorized representative. • Bidders must have been in the business for at least Ten (10) years of providing and integrating ICT Solution and Services in government or private sectors. 		
4.0	WARRANTY SERVICES AND SYSTEM MAINTENANCE		
4.1	<ul style="list-style-type: none"> • The offer must include a comprehensive on-site warranty of three (3) years from the date of complete sign off or acceptance by the end-user which will be given after commissioning of the hardware/software to the satisfaction of the Department. • Bidder shall be fully responsible for the manufacturer's warranty in respect of proper design, quality and workmanship of hardware, accessories, etc. covered by the offer. • Bidder must warrant all hardware, accessories, spare parts, etc., against any manufacturing defects during the warranty period. During the warranty period the bidder shall maintain the hardware/software and repair/replace all the defective components at the installed site, at no additional charge to the district. • The bidder has to ensure on-site support (without any extra cost) for resolving all hardware, software and firmware/OS related issues, including re-installation of software / firmware/OS and other software mentioned 		



	<p>above, due to any reason what-so-ever, during warranty. During the warranty period the Bidder should undertake to provide the district free maintenance service (which will include repair and maintenance of all systems, kits or parts, spare parts, etc. as and/or when required) from the date of commissioning of the systems.</p> <ul style="list-style-type: none"> • If any critical component of the entire configuration is out of service for more than 24 hours, the bidder shall either immediately replace the defective unit or replace it at its own cost or provide a standby. 		
5.0	TRAINING REQUIREMENTS		
	<p>The formal training shall be conducted by an Accredited Training Centers of the services offered. Training/ Examination Vouchers¹ must be issued and valid for one (1) year from issuance date at no additional cost to GSCWD. Informal training will be conducted on-site during installation/configuration.</p>		
5.1	Training Courses	No. of Pax	
5.2	Informal training on installation, configuration and operation of Server Nodes.		
5.3	<p>MWARE VSPHERE: INSTALL, CONFIGURE, MANAGE TRAINING PROGRAM</p> <p>VMware VSphere: Install, Configure, Manage Training</p> <p>This five-day classroom delivery type course features intensive hands-on training that focuses on installing, configuring, and managing VMware vSphere®, which includes VMware ESXi™ and VMware vCenter Server®. This course prepares an individual to administer a vSphere infrastructure for an organization of any size. The training shall include but not limited to the following:</p> <ul style="list-style-type: none"> • Introduction to vSphere and the Software-Defined Data Center • Creating Virtual Machines • vCenter Server • Configuring and Managing Virtual Networks • Configuring and Managing Virtual Storage 		



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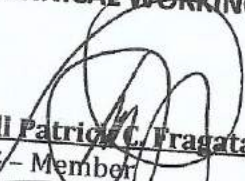
	<ul style="list-style-type: none"> • Virtual Machine Management • Resource Management and Monitoring • vSphere HA, vSphere Fault Tolerance, and Protecting Data • vSphere DRS • vSphere Update Manager • vSphere Troubleshooting 			
6.0	COMPLETE DOCUMENTATION			
6.1	Certificate of Warranty for all Equipment			
6.2	Certificate of After-Sales Support			
6.3	List of Service Centers			
6.4	Certificate of Replacement for Defective Items			
6.5	Service Level Agreement			
6.6	Non-Disclosure Agreement			
6.7	Installation/Integration/Migration Plan specifying installation design, detail and schedule of activities, and network diagram showing connectivity to existing GSCWD data center local area network.			
6.8	User Acceptance Test (UAT) Plan			
6.9	Testing Plan			
6.10	One (1) printed copy and electronic copy (in CD) of Installation Manuals of the systems software			
6.11	One (1) printed copy and electronic copy (in CD) of User Manual and Technical Manual of the Lot 1 equipment and systems software.			
6.12	Product Brochure/Technical Data Sheet of the following equipment: Node / Servers.			



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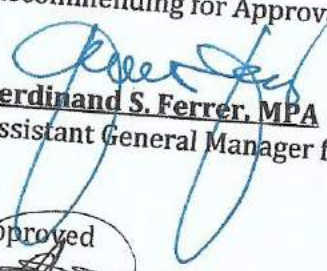
Prepared by:

TECHNICAL WORKING GROUP FOR INFORMATION TECHNOLOGY INFRASTRUCTURE

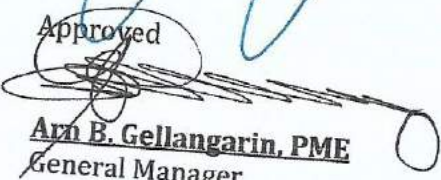

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