TERMS OF REFERENCE
ACQUISITION OF HCI SOLUTIONS

1. Objective

The adoption of HCI solution is part of the server infrastructure upgrading initiative primarily to:

- Consolidate multiple servers for easy management and scalability
- Take advantage of HCI disaster recovery solution

2. Baseline requirement

In these baseline requirements, the proposal of the vendor(s) should provide the following items/component.

- Hardware Specifications
- Data Efficiency
- Hypervisor
- Solution Expansion
- Resiliency
- Central Management and Monitoring
- Backup and Data Protection
- Data Replication
- Security
- Disaster Recovery (Failover and Fall-back)
- Support
- Licensing

The table below provides for the specifications for the hardware and performance requirement.

Hyper-Converged Solutions (HCI) Solutions		
S/N	**Items/Category**	**Requirements**
1	HCI Infrastructure	Proposed Solution must contain at least two (2) nodes for the main site cluster and one (1) node for the Disaster Recovery Site cluster in which must have the following: 1. Latest Multi-core servers 2. Storage 3. Compute 4. Networking 5. Hypervisor 6. Real-time, compression and optimization 7. Data protection 8. Disaster recovery capabilities

Hyper-Converged Solutions (HCI) Solutions		
S/N	**Items/Category**	**Requirements**
2	Processors	**For Main Site nodes and DR node:** 1. Should contain at least 16 Cores/32 Threads 2. Should contain 2 processors at least 2.9GHz
3	RAM Memory	**For Main Site nodes:** 1. Should contain at least 256GB RAM per node 2. Should be configured with 4x 64GB DDR4 memory module 3. RAM upgradable up to 192GB per processors and scalable up to 3TB per node **For DR Site node:** 1. Should contain at least 384GB RAM 2. Should be configured with 6x 64GB DDR4 memory module 3. RAM upgradable up to 192GB per processors and scalable up to 3TB per node
4	Storage	**For Main Site nodes:** 1. Each node should have at least 480GB for OS installation 2. Should contain at least 40TB usable Storage 3. Should be configured using SAS (for storage) and SSD (for OS and cache) all hot-swappable **For DR node:** 1. Each node should have at least 480GB for OS installation 2. Should contain at least 80TB usable Storage 3. Should be configured using SAS (for storage) and SSD (for OS and cache) all hot-swappable
5	Network	**For Main Site nodes and DR node:** Per node: 6*1GE, 2*10 Gb SFP+ • Management Port – 1GE • Edge Port – 1GE • Overlay – 1GE • Storage (peer-to-peer) – 10GE x 2 Each node should have 2 x 10GE fiber for data storage connectivity
6	Raid Controller	**For Main Site nodes and DR node:** HCI solution should have the latest Raid Controller to support: Tier1 Data Caching, RAID 1. Tier2 Data Storage, RAID 5
7	Data Efficiency	1. HCI Solution should be capable to Compress & optimize ALL data inline, in real-time, across all storage tiers for write operation from the VMs 2. Failure of any hard disk in the node shall not disable the compression for that node 3. Should be capable to distribute data and workloads to all servers forming the cluster to avoid overloading 4. HCI solution shall move applications automatically from one server to another in case of server failure
8	Hypervisor and management	1. HCI Solution should support different types of hypervisor in the Industry 2. Hypervisor should be placed on disks that are not part of the primary data storage.

Hyper-Converged Solutions (HCI) Solutions		
S/N	**Items/Category**	**Requirements**
		3. A management console should be provided as a single point of control to manage the virtualization, storage, compute, network and security of every node present in the cluster or federation 4. Should be able to provide health check and provide analysis to project the utilization of compute and storage resources to locate potential problems and offer workaround
9	Expansion	1. The HCI Solution should be scalable and capable of CPU, RAM and storage capacity upgrade as well as non-disruptive scale-out expansion. 2. Production cluster should be able to scale to three (3) or more nodes for later expansion 3. Storage virtualization component must be embedded into the hypervisor using standard network storage protocols for better performance and management
10	Resiliency	1. Proposed solution must be able to support multiple points of failure across multiple nodes, with no loss of function or data 2. Proposed solution should have support for minimum 1 hard disk failure at each node 3. Node failure shall be protected with at-least RF2 (Replication Factor 2) 4. Each Node shall have its own non-shared dual-PSU to support single power supply failure 5. Each node should be able to sustain 1 NIC port failure
11	Central Management and Monitoring	1. The HCI Solution must support VM-centric management through a single dashboard. This includes all nodes and clusters, and includes backup policies. 2. Ability to create and control all VM through the single dashboard 3. Ability to backup all VM appliances, rollback upgrades, and restore when necessary. 4. The HCI Solution should be able to provide Monitoring and Analytics of the following - VMs, Clusters, and Storage - IOs request, error logs, past and current VMs performance
12	Backup & Data Protection	1. The HCI solution must have integral feature built-in for backup and data protection 2. Backup should be able to restore affected VMs 3. Backup reports should be a must for audit purpose and can be access in a dashboard including failed backups 4. Backups should support Local backups as well as backup over WAN
13	Data Replications	1. The HCI solution shall support replication between the Production site and DR site 2. The solution shall provide a complete Replications or Clones of all VMs in the DR site 3. Replication across location shall be in low bandwidth mode and use both de-duplication and compression technologies while replicating the data. 4. License for DR site replication shall be part of the bid.

Hyper-Converged Solutions (HCI) Solutions		
S/N	**Items/Category**	**Requirements**
14	Security	1. Industry standard security protocols and Data-At-Rest-Encryption should be in place for data security 2. Should be capable of VM segregation and micro segmentation of application to ensure lateral security. 3. Must have Level 1 enterprise encryption 4. HCI Solution must include virtual firewall of the same brand of HCI being offered
15	Disaster Recovery (Failover and Fallback)	1. An automated turn-key recovery solution in a case of disaster recovery - Only authorised user shall execute the DR plan - A fully automated script for automating the recovery of VM in a specified sequence at DR Location for data consistency - there is a feature to simulate the DR once a year without affecting the Production workloads. - the DR Solutions should have the option to dynamically match IP address of the affected Virtual Server for continuous operation - there should be an option to switch back from DR site to production site 2. The solution should also cater Business Continuity Management
16	Support	1. The vendor shall provide local and remote support up to 24x7, 365, 4 hours response time. 2. The coverage of the support covers all product and services covered by this HCI Solution ranging from software to hardware. 3. Three (3) year support coverage for hardware only. 4. Software support is dependent on the renewal of license subscription.
17	Licensing	1. License should be for **1 year subscription to** cover the following - hypervisors/server virtualization software - Compression software - Backup and Recovery Software - Management and Analytic Software - Failover and Failback Software - Management Software 2. All other related Software License needed should be incorporated in this HCI Solution

3. Included Service

For Main Site nodes (Makati City):

1. Deployment and Installation of HCI hardware and software
   - Rack mounting and cabling of servers
   - Power up of server and Raid configuration
   - OS installation and Hypervisor installation
2. Provisioning and migration of existing data and VMs

For DR node (outside Metro Manila):

1. Deployment and Installation of HCI hardware and software
   - Rack mounting and cabling of servers
   - Power up of server and Raid configuration
   - OS installation and Hypervisor installation

4. Project Cost

Total cost is Eight Million and Eight Hundred Thousand Pesos (PhP 8.8 Million)
Cost is inclusive of 12% VAT and delivery costs.
Lead time: 60 to 90 calendar days upon receipt of Notice to Proceed.

5. Eligibility Requirements

The following are the qualification criteria for the potential provider:

1. Must be an authorized product reseller and/or installer certified by the product's manufacturer. Must provide copy of certification.
2. The supplier must provide a solution from a brand that has global presence and has a local office in the Philippines.
3. The project implementer from principal must be CISSP certified.
4. Bidder must present a certificate that their product has an In-country depot signed by the company and the product's manufacturer authorization.
5. The bidder must provide 24x7 after sales support. With 2 hours' response time.
6. Bidder must have at least one (1) full time certified engineer to manage and supervise the implementation of the project with certification issued by the product's manufacturer / principal.