



SUPPLEMENTAL/BID BULLETIN

Project Reference No. IB No. 23-49
One Lot Supply, Delivery, Installation, Testing and Commissioning of Hyper Converge Infrastructure Server with Data Replication (2 Nodes), and Uninterruptible Power Supply and Power Distribution Unit for Data Cabinet
Name of the Project
Location of the Project WVSU Medical Center

ADDENDUM NO. 01 - 2023

August 18, 2023

This Addendum No. 01 is issued to modify or amend items in the Bidding Documents. Attached is the Revised Section VII. Technical Specifications (pages 18-24). These shall form an integral part of the Bidding Documents.

A. Section VII. Technical Specifications

Table with 5 columns: Item No., Item Description, Qty, Unit, Corrections/Modifications/Amendments. Row 1: 1, One Lot Supply, Delivery, Installation, Testing and Commissioning of Hyper Converge Infrastructure Server with Data Replication (2 Nodes), and Uninterruptible Power Supply and Power Distribution Unit for Data Cabinet, 1, lot.

For guidance and information of all concerned.

Cesar Q. Tronco, R.N.
Chairperson
Bids and Awards Committee

Received by the Bidder:

Printed Name & Signature
Name of Bidder/Company
Date:

# Section VII. Technical Specifications

**IB No. UMC 23-49 One Lot Supply, Delivery, Installation, Testing and Commissioning of Hyper Converge Infrastructure Server with Data Replication (2 Nodes), and Uninterruptible Power Supply and Power Distribution Unit for Data Cabinet**  
 (Revised as indicated in the Bid Bulletin No. 01-2023)

Item No.	Specification	Statement of Compliance				
		Qty	Unit	Brand	Model	Statement of Compliance
	<b>One Lot Supply, Delivery, Installation, Testing and Commissioning of Hyper Converge Infrastructure Server with Data Replication (2 Nodes), and Uninterruptible Power Supply and Power Distribution Unit for Data Cabinet</b>					
1	<b>One Lot Supply, Delivery, Installation, Testing and Commissioning of Hyper Converge Infrastructure Server with Data Replication (2 Nodes), and Uninterruptible Power Supply and Power Distribution Unit for Data Cabinet</b>	1	lot			
	<b><u>Hyper Converge Infrastructure Server with Data Replication (2 Nodes)</u></b>					
	<b><u>Technical Specifications:</u></b>					
	<b><u>No. of Nodes:</u></b>					
	• Hyperconverge Infrastructure solution must be able to run on Two (2) Nodes					
	<b><u>Node size:</u></b>					
	• Maximum of 2U per node					
	<b><u>Processor:</u></b>					
	• At least 2 Server Processor with base frequency of 2.9GHz per node or higher					
	• At least 16 cores, 32 threads and 24MB Cache per processor or higher					
	<b><u>Memory:</u></b>					
	• At least 480GB RDIMM or similar type or equivalent per node					
	<b><u>Storage:</u></b>					
	• At least 6 X 4TB HDD SATA Storage Disk per node or higher					
	• At least 2 X 960GB SSD SATA for Caching Disk per node or higher					
	<b><u>Network ports per node:</u></b>					
	• At least four (4) 1000Base-T and two (2) 10Gb SFP+ Multimode ports per node					
	<b><u>Power Supply:</u></b>					
	• At least (2) redundant power supply per node or higher					

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	One Lot Supply, Delivery, Installation, Testing and Commissioning of Hyper Converge Infrastructure Server with Data Replication (2 Nodes), and Uninterruptible Power Supply and Power Distribution Unit for Data Cabinet	Qty	Unit	Brand	Model	Statement of Compliance
	<u>Technology:</u>					
	<ul style="list-style-type: none"> <li>Hyper-Converged Infra (HCI) is a software-defined IT infrastructure that virtualizes all the elements of conventional "hardware-defined" systems. HCI includes, at a minimum, virtualized computing (hypervisor), virtualized SAN (software-defined storage), and virtualized networking (software-defined networking). The HCI should be also capable and ready for network virtual security (Virtual Firewall, Bandwidth Manager, SSL VPN, WAN Optimization).</li> </ul>					
	<ul style="list-style-type: none"> <li>The HCI solution should start with minimum two nodes, and still expandable from 2 nodes to more nodes directly without redo of implementation or reinitialization of HCI.</li> </ul>					
	<ul style="list-style-type: none"> <li>The management platform is integrated and distributed, not relied on a certain virtual machine or physical machine, which is more reliable.</li> </ul>					
	<ul style="list-style-type: none"> <li>Do not require installing additional management software after deployment of the hypervisor to achieve basic web-based access to GUI, granular management and easy operation</li> </ul>					
	<ul style="list-style-type: none"> <li>Software is licensed based on the number of physical processors. This project requires 4 physical processors (CPUs).</li> </ul>					
	<u>Compute Virtualization:</u>					
	<ul style="list-style-type: none"> <li>Should have High-Availability. In case host fails, all the VMs running on that host can be recovered to another clustered host to ensure business continuity.</li> </ul>					
	<ul style="list-style-type: none"> <li>Backup is built-in by default and support agent-less incremental VM-level backup. For Windows VMs, file-level recovery must be supported.</li> </ul>					
	<ul style="list-style-type: none"> <li>Should have built-in back-up and support agent-less incremental VM-level back-up. For Windows VMs, file level recovery must be supported without using 3rd Party solutions.</li> </ul>					
	<ul style="list-style-type: none"> <li>Support snapshot consistent group and scheduled snapshots</li> </ul>					
	<ul style="list-style-type: none"> <li>Able to evaluate performance of virtual machines and hot-add resources (vCPU and vRAM) when they are running out of CPU or memory, minimizing business downtime.</li> </ul>					

# Section VII. Technical Specifications

**IB No. UMC 23-49 One Lot Supply, Delivery, Installation, Testing and Commissioning of Hyper Converge Infrastructure Server with Data Replication (2 Nodes), and Uninterruptible Power Supply and Power Distribution Unit for Data Cabinet**  
 (Revised as indicated in the Bid Bulletin No. 01-2023)

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	<ul style="list-style-type: none"> <li>• Must include module Activated CDP (Continues Data Protection) capable of recording of at least 5 VMs' IOs at an interval as minimum as 1 second, data can be restored at any point of time in the past 3 days for both clusters.</li> </ul>					
	<ul style="list-style-type: none"> <li>• AI-Enhanced database performance optimization with built-in self-adaptive performance optimization engine</li> </ul>					
	<ul style="list-style-type: none"> <li>• Support host health monitoring, when a host is deemed unhealthy, it will be put in an unhealthy host list, VM placement and HA failover will avoid to use the unhealthy host as a destination. When the host is back to normal, it can be taken out of the unhealthy host list automatically.</li> </ul>					
	<ul style="list-style-type: none"> <li>• Provide virtual machine deletion, power on and off, suspend and resume, restart, shutdown, power off, clone, migration, backup, template export, snapshot, label management and other functions on the hyper-converged management platform interface, and support batch operations</li> </ul>					
	<b><u>Storage Virtualization:</u></b>					
	<ul style="list-style-type: none"> <li>• Storage is in distributed architecture where more than one storage nodes are composed of a Storage Area Network (SAN) that can be scaled out (by increasing nodes) to expand storage capacity and performance</li> </ul>					
	<ul style="list-style-type: none"> <li>• Support access via iSCSI, to enable other hosts in the cluster to use iSCSI to access the virtual storage, and making Server SAN and IP SAN work together, and maximize storage utilization.</li> </ul>					
	<ul style="list-style-type: none"> <li>• A full copy of VM's data should be existed on the node where the VM is running on to facilitate faster read and write</li> </ul>					
	<ul style="list-style-type: none"> <li>• The virtual storage of Cluster must make use of SSD as cache tier and spinning disk as data tier to ensure performance and cost balance. Data is written to SSD first and read from SSD in priority to improve performance.</li> </ul>					
	<ul style="list-style-type: none"> <li>• Data that is frequently accessed (also called hot data) can use SSD as a persistent storage media, when VM is migrated or host is rebooted, the hot data must still reside in the SSD for fast retrieval</li> </ul>					
	<ul style="list-style-type: none"> <li>• Support disk bad sector prediction, scanning and repair to maximize data security</li> </ul>					

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	• Support storage capacity prediction based on historical usage statistics and consumption behavior					
	• Support disk remaining lifecycle prediction					
	• Support data reconstruction priority adjustment, when the faulty data is restored, the user can specify the virtual machine that is prioritized for reconstruction, ensuring the security of important business priority restoration data					
	• Support striping function, realize the performance improvement effect of distributed raid0, and support setting different number of stripes in units of virtual disks					
	<u>Network Virtualization:</u>					
	• Natively Support deploying virtual routers, virtual switches.					
	• Built-in distributed firewall to apply granular access control policy between VMs, securing east-west traffic (also known as Micro-segmentation),					
	• The virtual router supports high availability. A failed virtual router can be automatically recovered upon host failure, to ensure high availability of routing service					
	• Visualized Network topology can be completed simply by dragging objects and drawing connections via a visualized web-based management panel					
	<u>Advance features:</u>					
	Should be capable of license activated Disaster Recovery					
	• Disaster recovery solution must be from the same vendor of the underlying virtualization platform					
	• No additional backup or replication software is required					
	• Support non-disruptive DR testing to validate DR solution effectiveness with zero impact on production business					
	• Provide flexible RPOs, minimum 1 second					
	• Support data compression and encryption in the replication					

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	• Support ingesting data with portable disks in production cluster and importing data to DR cluster to save bandwidth consumption					
	• DR monitoring should be supported with real-time status display of VMs and clusters at both sites as well as link health status and RPO compliance					
	Should be capable of license activated multi-cluster management					
	• Support defining availability zones, multi-cluster management across regions, support management for no less than 20000 cloud hosts					
	• Support management for 3rd party server virtualization platform, provide management for VMs on VMware, support direct edit of VMware VM configurations including vCPU, RAM, disks and vNICs.					
	• Provide self-service portal, users can complete tasks like applying for VM resource and change VM configuration through this portal.					
	• Support multi-tenancy, platform admin can distribute CPU, RAM, storage and other resources to different tenants					
	• The cloud management platform and the underlying resource pool (compute virtualization, storage virtualization, network virtualization) must be from the same vendor, they must also support NFVs like virtual application firewall and virtual application delivery from the same vendor to ensure compatibility of the platform.					
	• Support application center for easy and secure application upload and deployment so that tenants can easily and quickly download packaged applications to start using directly.					
	<u>Storage Switch:</u>					
	One (1) Unit Storage Switch					
	• at least 12*10G SFP+ ports, 12*10/100/1000Base-T ports					
	<u>SFP (Small Form-factor Pluggable):</u>					
	• (8) 10g SFP+ fiber optical module 300m, LC connector					

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	<u>Uninterruptible Power Supply (UPS) and Power Distribution Unit for Data Cabinets</u>					
	<b>Uninterruptible Power Supply</b>					
	<u>Technical Specifications:</u>					
	<ul style="list-style-type: none"> <li>• Branded 6KVA/6KW 2U Parallel UPS with Parallel kit &amp; Module RACKMOUNT EBM Rail Kit &amp; Parallel Kit + SNMP Card (Short-Slot Type)</li> </ul>					
	<ul style="list-style-type: none"> <li>• Including onsite power-up &amp; onsite configuration Onsite hardwiring, circuit breaker &amp; panel pre-requisites if any to utilize existing or WWSUMC to provide</li> </ul>					
	<b>Power Distribution Unit for Data Cabinet (3 Units)</b>					
	<u>Technical Specifications:</u>					
	<ul style="list-style-type: none"> <li>• 3 units - ZERO-U PDU, Input C20 (16A), Outlet 20xC13 (locking), 4xC19</li> </ul>					
	<u>Other Requirements:</u>					
	<u>Project Implementation (Provide Certification):</u>					
	<ul style="list-style-type: none"> <li>• The supplier must provide a solution that is branded and brand new.</li> </ul>					
	<ul style="list-style-type: none"> <li>• The supplier shall perform the supply, delivery, installation, configuration, fine-tuning and testing of System.</li> </ul>					
	<ul style="list-style-type: none"> <li>• The supplier shall perform the necessary fine-tuning, upgrade, redesign or replacement of appliance to ensure the optimum performance of the System.</li> </ul>					

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	<u>Training and Knowledge Transfer:</u>					
	• Administration					
	• Troubleshooting					
	• HCI architecture implementation					
	<u>Warranty and support (Provide Certification):</u>					
	• At least three (3) years for the hardware and software components of the project.					
	• Vendor must have a direct Manufacturers Support					
	<u>Vendor Requirements (Provide Certification):</u>					
	• Brand offered must be present in Gartner Magic Quadrant					
	• Vendor Brand Certification as Business partner					
	• Vendor must have a Brand Certified Technical Personnel					
	• Certification of dealership					
	—nothing follows—					

Name of Bidder: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
 (Printed Name and Signature)

Designation: \_\_\_\_\_

Date: \_\_\_\_\_