

TERMS OF REFERENCE (TOR)
COMPUTER, SERVER with DR SYSTEM - 119ZCCSDRS

1.0 SYSTEM PROFILE:

This project is about acquisition, installation and configuration of new Computer Server with Disaster Recovery (DR) System and Storage using or in a Hyperconverged Infrastructure (HCI). This HCI is a combination of servers and storage into a distributed infrastructure platform with intelligent software to create flexible building blocks that replace legacy infrastructure consisting of separate servers, storage networks, and storage arrays. The said combination or hyper convergence of server, storage, networking and backup devices into one system is designed and expected to improve performance of MCWD's Computerized Systems deployed at the Main Office and all Satellite Offices in order for end-users to effectively and efficiently access all computerized systems (FILE SERVERS, EPS, HRIS, JOB ORDERS, BCCS INVENTORY, etc.) from MCWD Main Data Center.

2.0 SCOPE OF WORK:

2.1 Supply, Delivery, Installation and Configuration of Hyperconverged Infrastructure (HCI) with the following Hardware, Software and Systems below:

Minimum Technical Requirements:

For Servers, Storage and Network Devices (Hyperconverged Infrastructure HCI):

No. of Nodes = 3

- HCI platform must be on leaders quadrant of the latest Gartner Magic Quadrant for Hyperconverged Infrastructure
- HCI platform must provide a minimum of the following specs per node (Minimum of 3 Nodes):
 - Intel Xeon Silver 4314 with 16-core 2.4 Ghz speed
 - Minimum of 512 GB RAM per host
 - 2x 1.92 TB SSD per node
 - 2x 6 TB HDD per node
 - Local-to-host Virtualized Storage Controllers
 - 2 x 10 GbE (Base-T) network ports per node
 - IPMI out-of-band management port allowing host power control, remote console access, and hardware alerting and health monitoring
 - Redundant power supplies and cooling fans

Must include 8x 5-meter Cat6A and 4x 5-meter Cat6 patch cords

- HCI platform must be hypervisor agnostic supporting VMware ESXi, Microsoft Hyper-V & Nutanix AHV.



- HCI platform must be 100% software defined with no dependency on proprietary hardware.
- HCI platform must not have any limit to the number of nodes/servers when the cluster is upgraded and scales up or out.
- HCI platform must have a "Single Pane of Glass" management GUI
- HCI platform must have a Data Locality feature to ensure VMs have the lowest latency as possible when accessing storage.
- HCI platform must support Intelligent Tiering where hot and cold data move between the SSDs and HDDs within the disks of the nodes/servers within the cluster.
- HCI platform must have the VM Flash Mode feature where operators are able to pin a whole VM to the flash tier to guarantee all-flash performance.
- HCI platform must support the both hybrid and all-flash nodes/servers in the same cluster for maximum flexibility.
- HCI solution should support unlimited VM's snapshot at storage level, it should not impact guest OS performance during snapshot.
- HCI solution should be able to take VM's snapshot/Storage snapshot at any time irrespective of VM's state (Power ON/Power OFF/Suspended) with retention policy.
- HCI solution should support crash consistent and application consistent backup within cluster.
- HCI platform must support 1 click non-disruptive updates for the Core Operating System, Hypervisor, disk, and system firmware for both within the cluster and across multiple clusters.
- HCI platform must have the option to use Storage Only nodes eliminating the need to pay for extra hypervisor licensing fees.
- HCI platform must be able to turn on deduplication, compression, & erasure coding on both hybrid and all-flash configurations.
- HCI platform must allow the end users and operators to turn on/off deduplication and compression independently from other workloads running within the cluster.
- HCI platform must have the ability to convert cluster from one hypervisor to another on the fly without data movement.
- HCI platform must have the ability to support more than 1 of the supported hypervisors within the same cluster.
- HCI platform must be able to support site to site replication between 2 different hypervisors.
- HCI platform must have native proactive support tools built in such as alerts and "call-home" functionality.
- HCI platform must have native capacity planning built in that offers advanced analytics to understand historical cluster utilization across CPU, memory, & storage.
- HCI platform must also include predictive analytics to forecast when additional CPU, memory, or storage will be needed in the future.

- HCI platform must give the administrator the ability to "right size" the virtual environment based on historical consumption and performance data gathered within the cluster.
- HCI platform must have native File and Object services built in to accommodate future SMB, NFS, Object workloads if needed.

For Active Directory Upgrading:

- Must provide 3x Windows Server 2022 Datacenter 16-Core Pack License (Perpetual)
- Must provide 300x Windows Server User 2022 CAL (Perpetual)

Domain Controller - Operating System

- Must be in latest OS version with Windows security patches updated

Domain Controller - Active Directory Upgrade

- Must be able to upgrade the old Domain Controller
- Must be able to properly decommission the old Domain Controller
- Forest Functional Level (FFL) must be latest Level (Windows Server 2016)
- Must be able to apply Group Policy Object to specific Organizational Unit (OU) after the Upgrade of the Domain Controller.

Domain Controller - Active Directory feature functionality

- New Domain Controllers must be replicated and sync to one another.
- Must authenticate and authorize users to access network resources with applied privileges.
- Endpoint Computers must be synchronize GPO policies from new Domain Controllers.

Domain Controller - Active Directory Clean-up

- Initiate AD Assessment to provide suggestion and recommendation
- Should remove older lists of Computer account and disabled User account
- Cleaning DNS records that no longer needed
- New Domain Controllers must be listed on DNS nameservers

For Backup Server and Software for Disaster Recovery System: 2 units (Prod and DR)

- FRONT STORAGE: Chassis with up to 12x3.5" Drives
- Chassis Configuration: 3.5" Chassis with up to 12 Hard Drives (SAS/SATA), 1 CPU, V3
- Processor: Intel® Xeon® Silver 4310 2.1G, 12C/24T, 10.4GT/s, 18M Cache, Turbo, HT (120W) DDR4-2666
- Memory: 32GB DDR4 DIMM, supports RDIMM 2 TB max or LRDIMM 8 TB max, speeds up to 3200 MT/s
- Harddrive: C and D: 1.5TB Raid 1 (OS and SW)



Drive G: 17.1 TB Usable (Repository)

- Fiber Port : 2 x 1/10GB FC
- Operating System: Windows server 2022 or Later
- With mouse and keyboard (wireless, black and same brand with the offered Server)

- The backup software license shall have three (3) years subscription.
- License for backup and replication for 20 virtual machine/server.
- Solution should support back up of all operating systems that are supported by VMware, Hyper V, and AHV, among others in a single product.
- Solution should be capable of VM image level backup and VM host based replication to a Disaster Recovery(DR) site managed from the single console.
- Agentless protection without the need to install individual agents inside each Guest VMs.
- Support for backup of provisioned VMs for AHV (Nutanix), VMware and HyperV Virtualization Platform.
- Ability to utilize forward incremental & reverse incremental backup methodology.
- Solution must be able to backup latest operating system and application.
- Shall be able to create image-based backups and replicas.
- Shall be able to perform recovery of full VM image, VM Configuration File, guest OS files and application items.
- Shall be able to restore individual VMs, guest files and application items from storage snapshots.
- Included built in AES 256 bit encryption, compression and deduplication in a single product without an additional option to purchase.
- Shall be able to support any type of Disk based storage (DAS/NAS/SAN).
- Shall be able to provide an abstraction layer over individual storage devices to create a single virtual pool of backup storage for backups.
- Shall be brand agnostic on storage devices.
- Shall be able to reduce backup size and replication bandwidth usage by excluding deleted file blocks, swap, hibernation files and user specified files and folder for Virtualization Platform.
- The Solution must comply with less than 15 minutes Recovery Point Objective (RPO) and Recovery Time Objective (RTO) both VMware & HyperV Virtualization Platform.
- Solution must provide automated test and verification of each backup or replica to assure recoverability in case of production failure. The verification must include VM files, OS, and Applications including custom testing using scripts for Virtualization Platform.
- The solution should have a built-in bandwidth optimizer for faster off-site replication.



- Ability to perform Instant recovery of VM by starting up VM in production environment, directly from the native backup file without the need to perform restoration to VMware Platform, Microsoft Hyper-V or Nutanix AHV.
- Able to perform Instant database recovery by mounting backup database to production for Microsoft SQL Server.
- Solution should be a Leader in Gartner Magic Quadrant Enterprise Backup and Recovery Software Solutions.

For Core Switch Renewal and Maintenance:

- Provide three (3) years warranty renewal partner support services for the existing 2 units Cisco Nexus Core Switch with serial nos. FOC2329R0BC and FOC2329R082
-CON-PSRT-172TQ32T Nexus 3172-T, 32 x 10GBase-T and 6 QSFP+ ports"
- Core Switches partner should provide 24 x 7 remote and phone corrective support in the event of equipment malfunction for 1 year
- The bidder shall provide 8 x 5 onsite support excluding weekend and holiday in the event of equipment malfunction for 3 years.
- The bidder shall conduct system health check system once a year.
- The bidder shall conduct monthly preventive maintenance.

For Firewall System:

Firewall Interfaces:

- 2x GE RJ45 HA / MGMT Ports
- 2x GE RJ45 WAN Ports
- 2x GE RJ45 HA Ports
- 12x GE RJ45 Ports
- 2x 10 GE SFP+ FortiLink Slots
- 4x GE SFP Slots
- 4x GE RJ45/SFP Shared Media Pairs

System Performance and Capacity:

- up to 2.6 Gbps IPS Throughput
- up to 1.6 Gbps NGFW Throughput
- up to 1 Gbps Threat protection throughput
- Latency must not > 5 μ s
- up to 11 Gbps IPsec VPN Throughput
- up to 1.5 million concurrent sessions

Security:

- Identifies thousands of applications inside network traffic for deep inspection and granular policy enforcement.
- Protects against malware, exploits, and malicious websites in both encrypted and non-encrypted traffic.
- Prevent and detect against known and unknown attacks using continuous threat intelligence from AI powered Labs security services.

Performance:

- Delivers industry's best threat protection performance
- Purpose-built security appliance with specialized ASIC for network and content security processing.
- Provides industry-leading performance and protection for SSL encrypted traffic.

Networking:

- Delivers advanced networking capabilities that seamlessly integrate with advanced layer 7 security and virtual domains (VDOMs) to offer extensive deployment flexibility, multi-tenancy, and effective utilization of resources.
- Delivers high-density, flexible combination of various high-speed interfaces to enable best TCO for customers for data center and WAN deployments.
- Dynamic Path Selection over any WAN transport to provide better application experience based on self-healing SD-WAN capabilities.

Management:

- Includes a management console that is effective, simple to use
- Provides Zero Touch Integration with Security Fabric's Single Pane of Glass Management.
- Predefined compliance checklist analyzes the deployment and highlights best practices to improve overall security posture.

Compliance:

- FCC ICES, CE, RCM, VCCI, BSMI, UL/cUL, CB

Certifications:

- ICSA Labs: Firewall, IPsec, IPS, Antivirus, SSLVPN, USGV6/IPv6

Subscription:

- With Unified Threat Management (UTM) Protection
- 24X7 Support, Advanced Malware Protection, Application Control, Intrusion Prevention System, Web and Video Filtering.

Magic Quadrant of Enterprise NGFW:

- Should be in Gartner's Leader Quadrant for Enterprise Network Firewall and Unified Threat Management (2017 and onwards)

2.2 Design, Configuration, Installation, Testing and Commissioning of all Project's Hardware, Software and Systems delivered.

2.3 Knowledge transfer/Technical training after project completion for at least six (6) MCWD IT technical personnel.

2.4 Submit Project Documentation or Technical manual for the completed project.

3.0 INCLUSIONS: (Additional Technical Requirements)

3.1 For Servers, Storage and Network Devices (Hyperconverged Infrastructure HCI):

- The bidder should be a highest tier partner of the proposed HCI solution. (Submit Certificate)
- The bidder must be a certified reseller of the proposed solution. Bidder must provide manufacturer authorization form (MAF certificate).
- The bidder should provide experienced and trained technical support engineers under its direct employment and supervision in rendering the required service. Single point of support for hardware and software. This single point of contact approach provides holistic and simple support structure.
- The bidder should have at least 2x Certified HCI Engineers that will implement and support the project. (Submit Certificate)
- The bidder shall include Quarterly preventive maintenance of the system for three (3) years that should cover the following:
 - Overall Cluster Health Check
 - Review HW and SW Firmware & Patches and apply if necessary
 - Review of resource utilization
 - Check connection and notifications

3.2 For Active Directory Upgrading:

- The bidder must have at least five (5) years of experience in the field of network system integration which should include but not limited to Active Directory implementation and Microsoft product services in the Philippines.
- The bidder must be a certified reseller of the proposed solution. Bidder must provide manufacturer authorization form (MAF certificate).
- The bidder should provide experienced and trained technical support engineers under its direct employment and supervision in rendering the required service.
- The bidder should have at least 2x Microsoft Certified: Windows Server Hybrid Administrator Associate. (Submit Certificate)
- The Bidder must provide Certificate of Authorized Resellership/Dealership of the proposed product/s and support/maintenance services, if the bidder is not the manufacturer of the proposed product/s (Coming from the manufacturer).
- The Bidder must be a Microsoft Direct CSP Partner. (Submit Certificate)



- The bidder shall include Quarterly preventive maintenance of the system for three (3) years that should cover the following:
 - Must provide a 3-Years OS Support for the installed Windows Server 2022 Virtual machines.
 - Must provide a 3-Years OS Support for the existing Windows Server 2019/ 2016 Virtual machines.
 - Must provide a quarterly Windows Server 2022/ 2019/ 2016 OS patching within the 3-years warranty.
 - Must provide a quarterly Windows Server 2022/ 2019/ 2016 vulnerability mitigation within the 3-years warranty (for Critical and High Vulnerabilities).

3.3 For Backup Server and Software for Disaster Recovery System: (For Prod and DR)

- The bidder should be a Silver partner of the proposed Backup solution. (Submit Certificate)
- The bidder must be a certified reseller of the proposed solution. Bidder must provide manufacturer authorization form (MAF certificate).
- The bidder should have at least 2x Technical Professional Certification that will implement and support the project. The bidder should provide experienced and trained technical support engineers under its direct employment and supervision in rendering the required service.
- The bidder shall include Quarterly preventive maintenance of the system for three (3) years that should cover the following:
 - Configuration check (Version, Email notification, etc)
 - Checking of Backup Software License Utilization
 - Checking Repository (Storage) Utilization
 - Validation of Backup Policy jobs

3.4 For Core Switches Renewal and Maintenance:

- The bidder shall provide 8 x 5 onsite support excluding weekend and holiday in the event of equipment malfunction.
- The bidder shall conduct system health check system once a year for three (3) years.
- The bidder should have at least Cisco Certified Network Professional engineer. (Submit Certificate)
- The bidder should provide experienced and trained technical support engineers under its direct employment and supervision in rendering the required maintenance.
- The bidder must be a certified reseller of the existing core switch brand, Bidder shall provide manufacturer authorization (MAF certificate).
- The bidder shall conduct monthly preventive maintenance for three (3) years that should cover the following:
 - Check Logs
 - Check Network Problems/Traffic

- Check and repair other problems necessary for the efficient operation of the core switches.

3.5 For Firewall System:

- The bidder must have at least two (2) Certified Network Security Professional of the proposed technology or equivalent. (Submit Certificate)
- The bidder should provide experienced and trained technical support engineers under its direct employment and supervision in rendering the required service.
- The bidder must be a certified reseller of the proposed solution. Bidder must provide manufacturer authorization form (MAF certificate).
- The bidder must have a project management team with certified project management professional (PMP). (Submit Certificate)
- The bidder shall include Monthly preventive maintenance of the system for three (3) years that should cover the following:
 - Check Logs
 - Check Network Problems/Traffic and security
 - Check and repair other problems necessary for the efficient operation of this Firewall System.

4.0 Terms and Conditions:

- The bidder must have a local office in Visayas.
- The bidder must have 24x7 service desk facility reachable via SMS, email, phone with 30 minutes to 1 hour response time.
- Must have similar completed projects within 5 years.
- The bidder must have a project management team with certified project management professional (PMP).
- Must be in the ICT business for at least 10 years.

5.0 PROJECT TIMELINE:

Supplier must be able to deliver, install, configure and commission the project within **120 calendar days**.

6.0 PROJECT WARRANTY:

Hardware, Software, Licenses and support services should have **three (3) years** partner and bidder warranty starting upon project completion or a day after project turn-over.

Prepared By:


ROMMEL CYRIL S. YU
 ICT Dept. Manager