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Supply, Installation, Configuration, and Integration of Compute Expansion and Storage Expansion

1. Compute Node – 1 Bundle

#		Minimum Specification	✓
1.1	Form Factor:	2U Rack Server	
1.2	Processor	2 Nos × Intel Xeon Silver 4514Y(2.0GHz/16-Core/30MB/150W)	
1.3	Memory	- Up to 48 × DDR5 DIMM slots - Supports up to 12 TB memory capacity. - Installed: 4 Nos x DDR5 RDIMM, 64GB, 5600MT/s, 2Rank"	
1.4	Storage & Controller	- Flexible hot-swappable storage chassis supporting 2.5" HDD/SSD (≥ 33 hot-swappable drive bays supported) - Installed Drives: 2 × 960 GB SATA 6Gb/s Read-Intensive (RI) 2.5" SSD - RAID Controller: Installed hardware RAID controller card with ≥ 4 GB cache capacity - RAID Levels Supported: RAID 0, 1, 10, 5, 50, 6, 60 - Power Protection: Supercapacitor included for power-off cache protection	
1.5	Networking	- Installed: 1 × OCP 3.0 Dual-Port 25GE SFP28 Ethernet Adapter - Cables Included: 2 × 25G SFP28 Passive High-Speed Direct Attach Cables (3 meters) - Data/Management Ports: 4 × 1GbE Data Ports, 1 × 1GbE Dedicated Management Port	
1.6	PCIe & GPU Support	Must support up to 4 × dual-width or 14 × single-width GPU cards	
1.7	Cooling System	4 × Hot-swappable counter-rotating fans with N+1 redundancy	
1.8	Power Supply	- 2 × Hot-swappable 2000W Platinum PSUs with 1+1 redundancy 2 × Power Cords (AC 250V 10A, 1.8m, C14-to-C13 PDU connection)	
1.9	Installation Accessories	- 1 x Ball Bearing Rail Kit - 1 x 2U Bezel/Panel"	
1.10	Server Management:	- Integrated iBMC with dedicated management port - Protocols: Redfish, SNMP, IPMI 2.0, HTML5/VNC KVM, Agentless Monitoring, Remote Control - Interfaces: Web-based GUI, Serial Port CLI - Supported OS: VMware ESXi / vSphere, Microsoft Windows Server, RHEL, SUSE, Ubuntu, Debian, CentOS, Oracle Linux, openEuler	
1.11	Warranty & Support	- 3-Year Warranty Onsite Standard - 24x7 Technical Assistance Center (TAC) Support - Online Self-help Support & System Software/Firmware Update - 9x5xNBD Advance Hardware Replacement - 9x5xNBD Onsite Support	

2. Storage Expansion - 1 Bundle

Infrastructure & Compatibility Notes:

- **Enclosure Capability:** The current HPE MSA 2060 deployment features separate enclosures supporting both 2.5" SFF and 3.5" LFF drive form factors.
- **Drive Bay Availability:** Existing enclosures contain sufficient unpopulated, available drive bays to host all 11 new drives directly.
- **Hardware Requirement:** No additional expansion shelves or drive enclosures are required for this supply.

#		Minimum Specification	✓
2.1	SAS Enterprise Drives (SFF)	8 × HPE MSA 2.4 TB SAS 12G Enterprise 10K SFF (2.5in) M2 <i>(Includes 3-Year Warranty)</i>	
2.2	High Capacity Drives (LFF)	3 × HPE MSA 14 TB 7.2K LFF (3.5in) M2 <i>(Includes 3-Year Warranty)</i>	
2.3	Service License Renewal	1 × 1-Year HPE TechCare Essential Service Renewal for existing HPE MSA 2060 Storage	

3. Professional Services: Installation, Configuration, and Integration Service - 1 Bundle

#		Minimum Specification	✓
3.1	Team requirement	The vendor MUST employ and submit valid certification copies for all listed certifications prior to award: - IT Project Management or IT Service Management - Fortinet Certified Professional (FCP) Network Security - HPE Accredited Technical Professional (ATP) – Storage Solutions - HPE SimpliVity System Administration - Cisco Certified (CCNA / CCNP)	
3.2	Service Planning and Design	- Assess existing compute nodes, HPE MSA 2060 Storage, Cisco core network, and Fortinet security infrastructure. - Prepare detailed deployment and integration plan: network topology, VLAN allocation, IP addressing, and security considerations. - Design compute node expansion to ensure seamless compatibility with existing server cluster. - Plan HPE MSA 2060 storage expansion (disk group layout, capacity utilization, and RAID structure).	
3.3	Hardware Installation	- Rack-mount compute node server and install the 2.5" SFF & 3.5" LFF drives into their respective existing HPE MSA 2060 enclosures. - Install dual power cables, management connections, data networking, and storage connectivity cables. - Update server and storage firmware, BIOS, and management	

		modules to approved stable versions. - Configure hardware RAID settings, iBMC management, and network interfaces.	
3.4	Virtualization & Cluster Integration	- Add the new compute node to the existing VMware vSphere virtualization environment/cluster. - Configure cluster membership, resource pooling, vSphere HA (High Availability), and DRS settings. - Verify cluster-wide host compatibility and performance.	
3.5	Storage Integration	- Expand existing HPE MSA 2060 storage capacity using the supplied SFF and LFF drives. - Configure storage pools, virtual disks, and LUNs. - RAID Configuration: Final RAID levels will be determined during implementation based on existing cluster configuration and optimization requirements. - Verify storage accessibility and LUN path redundancy across the VMware vSphere hosts.	
3.6	Cisco Core Network Integration	- Configure network interfaces for the compute node, including VLAN tagging and port configuration. - Ensure high-speed data communication, path redundancy, and compliance with existing Cisco network standards.	
3.7	Fortinet Security Integration	- Enforce existing Fortinet security and access control policies on the new compute and storage components. - Configure required firewall rules and strict network segmentation. - Lock down management interfaces to ensure accessibility is restricted to authorized ICT administrators only.	
3.8	Testing & Commissioning	- Verify complete physical and logical installation of all hardware. - Perform compute node failover, vMotion, HA testing, and storage performance/accessibility checks. - Validate network connectivity, path redundancy, and firewall security rule enforcement.	
3.9	Documentation & Knowledge Transfer	- Deliver detailed As-Built Documentation covering compute host settings, storage allocations, IP/VLAN tables, and security policies. - Provide updated network, storage, and cluster architecture diagrams. - Hand over warranty cards, software licenses, and support contact details. - Conduct technical training/knowledge transfer for PGO ICT personnel on routine system administration, monitoring, and troubleshooting.	



Հանրապետության կրթության
և գիտության նախարարություն

Կրթության
և գիտության
նախարարություն

Ստորագրվել է 2026 թվականի
մարտի 03-ին, համար (IUL)196-C/1/2026/88

(IUL)196-C/1/2026/88

03 մարտի 2026

Նախագահի ստորագրություն:

Նախագահի տեղակալի ստորագրություն:

Նախագահի տեղակալի ստորագրություն:

سُورَةُ مَعْرِجٍ : ١

مَدْرَسَةُ **بَنِي**

- **نمبر ۱۴۱ ذیل قسٹوں کی فہرست (نمبر ۱۴۱ سروس ۶/۲۰۱۳) کی فہرست جسٹس کی**
فہرست ۱۴۱ ذیل قسٹوں کی فہرست (نمبر ۱۴۱ سروس ۱۸/۲۰۱۴) کی فہرست ۷ ۹ قسٹوں
کی فہرست ۱۴۱ ذیل قسٹوں کی فہرست (نمبر ۱۴۱ سروس ۱۸/۲۰۱۴) کی فہرست ۷ ۹ قسٹوں
کی فہرست ۱۴۱ ذیل قسٹوں کی فہرست (نمبر ۱۴۱ سروس ۱۸/۲۰۱۴) کی فہرست ۷ ۹ قسٹوں

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مَرَسَر:

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