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| **Demand** | **Requirement Description** | **Comment** |
| General Requirements | Dual-controller storage with failover and support for both block access (SAN) and file access (NAS) |  |
| Availability and reliability features | Hot-swap redundant modulesBuilt-in antivirus |  |
| Protocol support | Protocols SAN: FC, iSCSI, SAS |  |
| Form Factor | Height 2U, at least 25 drive bays in the controller chassis | 24 drive bays in the controller chassis can also be considered as an option |
| Scaling | A minimum of 125 disks within a single storage system using additional disk shelves.  |  |
| RAID Type Support | RAID 0, RAID 1, RAID 3, RAID 5/5F, RAID 6, RAID 6F, RAID 10, RAID 30, RAID 50, RAID 60 |  |
| Cache Memory | Minimum 192 GB of memory  | 96 per controller (192 Total) |
| Installed disks  | 25 pcs of U.2 NVMe SSD, PCIe Gen3 with a capacity of at least 3.84TB | 24 pcs can also be considered as an option if 24 drive bays are offered instead of 25. |
| Deduplication/Compression | deduplication and online compression |  |
| Single namespace | Ability to integrate multiple storage controllers into a single namespace  |  |
| Scale out | Scale out storage performance and capacity at both the block and file levels of up to 4x storage |  |
| Automatic multi-tier storage | Possibility of automatic multi-tier data storage |  |
| file SSD cache | Functionality for automatic caching of file metadata and frequently used small files |  |
| Data Services | The default features of the software include:* SED (Self-Encrypting Drives)
* Thin provisioning
* Snapshots (block-level): 64 per source volume, 128 per pool
 |  |
| Service Manager | The storage system should include a service manager that allows you to automatically generate and send service information about failures and malfunctions in the operation of the storage system to the technical support service of the storage manufacturerAbility to send notifications by E-mail and SNMP |  |

**დანართი N1: დეტალური სპეციფიკაცია, მინიმალური მოთხოვნები**

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| --- | --- | --- |
| Management Capabilities | Integrated with Microsoft Active Directory (AD) Web interface with the ability to audit and analyze the history of resource usage |  |
| I/O Ports | Installed 8 pcs. 32Gb/s FC and 8 pcs. 10GbE (SFP+) and 4 pcs. 12Gb/s SAS.At least two available slots for additional expansion cards * 32Gb/s FC 4 ports,

Ability to connect directly to server without SAN Switch!!! |  |
| Cloud backup | Storage software should provide the ability to back up both logical volumes of block  |  |
| Operating System Compatibility | Microsoft Windows Server Microsoft Windows Hyper-VWindows serverVMware |  |
| Compliance with industry standards  | CE, BSMI, FCCBSMI, CB, UL/cUL |  |
| Warranty & Support | At least 3 years |  |

**Note: All above specifications and requirements are Mandatory – none of them optional!!!**

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| **Product** | **Specification** | **Quantity** | **Comment** |
| Storage | 2u 25 bay  | 1 | 24 drive bays can also be considered as an option |
| Disk drives (ssd) | U.2 NVME SSD PCIe Gen3 - 3.84TB DWPD=1 | 25 | 24 pcs can be considered if 24 drive bays are offered instead of 25. |
| HB | host board with 4x32gb/s fc ports | 2 |  |
| SFP | 32 gb/s fibre channel sfp optical transceiver, lc, wave-length 850 nm, multi-mode | 8 |  |