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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 modules  Built-in antivirus |  |
| Protocol support | Protocols NAS: CIFS/SMB (version 2.0/3.0), NFS (version 2/3/4),  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 256 GB of memory | 128 per controller (256 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 | Local offline deduplication and online compression |  |
| Third-party disk support | Ability to install third-party disk drives in optional SAS disk expansion enclosures | Without loss of Warranty!!! |
| 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 * Local replication: 4 per source volume, 16 per system * Remote replication (file-level): Support for Rsync with 128-bit SSH encryption. |  |
| 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 manufacturer  Ability 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!!! | 16 Gb model can be considered as well, however 32 Gb is preferable. Depends on the time of delivery. |
| 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-V  Windows server  VMware |  |
| Compliance with industry standards | CE, BSMI, FCC  BSMI, 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 | 16 Gb model can be considered as well, however 32 Gb is preferable. Depends on the time of delivery |
| SFP | 32 gb/s fibre channel sfp optical transceiver, lc, wave-length 850 nm, multi-mode | 8 |  |