

Project: KAFD Crowd Management

Solution – IT Infrastructure Supply and

Implementation

Objective:

KAFD aims to establish a robust IT infrastructure to host the Crowd Management Solution application. The supplier will provide the required **hardware, software, and professional services** to implement and integrate three main system modules within OpenShift, VMware, and BareMetal environments.

1. Project Scope Overview

The solution comprises the following main components:

- **CompA (Dashboard Module):**
Runs on **OpenShift environment**.
Requires 3 production compute nodes and OpenShift licensing with MongoDB and PostgreSQL databases.
- **CompB (Video Analytics Module):**
Runs on **BareMetal servers** with **GPU (NVIDIA L4)**.
Requires 3 production servers + 1 non-prod + 1 training server.
OS: Ubuntu Pro with Docker, RabbitMQ, and HAProxy.
- **CompC&D (Face Watch Module):**
Runs on **VMware and BareMetal with GPU**.
5 VMware compute nodes and 3 BareMetal GPU servers.
OS: Windows Server 2022, MS SQL 2022, Ubuntu (for HAProxy/RabbitMQ).

2. Storage Requirements

- **Software Defined Storage (SDS):**
 - All-NVMe, software-defined, scalable up to 16 PB.
 - Minimum 190 TB usable capacity and 550K IOPS.
 - Must support OpenShift & VMware via CSI driver.
 - Include 6 storage nodes + 3 management nodes.
 - **Network Attached Storage (NAS):**
 - 4-node scalable system with 175 TB usable capacity.
 - Support SMB/NFS/S3 protocols with snapshot, replication, and quota management.
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3. Network Infrastructure

- **Spine & Leaf architecture** in KAFD Data Center (FDC 6.40).
 - Minimum 48×100G ports per spine switch.
 - Brands: **Arista, Cisco, or Huawei.**
 - Include fiber and UTP cabling (R&M brand standard).
 - Provide all SFPs, patch cords, and inter-rack connections.
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4. Preferred Hardware Vendors

- **Servers & Storage:** Dell, HP, or Huawei/XFusion
- **Network Switches:** Arista, Cisco, or Huawei

5. Deliverables

- Supply, installation, and configuration of hardware and software.
 - Integration and interoperability between VMware, OpenShift, and BareMetal environments.
 - Documentation (design, configuration, test, and handover).
 - 3 years of 24×7 support and warranty for all components.
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Duration:

Installation, Testing & Commissioning: **12 months**

Maintenance & Support: **3 years**

End Goal:

Deliver a fully operational, scalable, and resilient IT infrastructure platform capable of supporting AI-driven crowd management applications at KAFD.