



# Celestica's S2123 Flexible Configuration Server (Tyr)

## Verified for Intel® Select Solutions for Media Analytics

Celestica's Tyr S2123 server is a high performance, flexible configuration that is ideal for virtualization, database, HPC, and big data analytics deployments, as well as large capacity local storage resources. The 2U chassis is verified for Intel Select Solutions for Media Analytics, based on Intel® Xeon® Scalable Processors and supports up to 12 3.5" or 24 2.5" SAS/SATA/NVMe drives with excellent performance and high reliability.



## An Evolving Market

Visual cloud workloads are driving the need for faster, more efficient technology solutions to meet end-users' expectations for nearly lag-free, immersive, on-demand experiences. From cloud gaming, augmented reality and virtual reality to smart transportation and video/image analytics, media companies and communications/cloud service providers (CoSPs/CSPs) are migrating to the edge to deliver higher bandwidth, lower latency solutions.

According to research firm, MarketsandMarkets, the video analytics market is expected to see considerable growth within the next several years. They estimate the market size will increase from \$4.9B USD in 2020 to \$11.7B by 2025.<sup>1</sup>

Celestica has partnered with Intel to verify its Tyr S2123 server as an Intel® Select Solutions for Media Analytics, enabling businesses to achieve a higher density stream per system for video analytics. The Tyr S2123 Server integrates Celestica's Visual Cloud Accelerator Card for Analytics (VCAC-A) to deliver high efficiency FP16 precision to manage 24 streams at 1080p 30FPS with up to 144 streams per server with six cards.

## Verified Intel Select Solutions

At Celestica, we collaborate with our partners to develop unique, innovative hardware solutions that are optimized for the application environment. Working with the right ecosystem partners is key to delivering leading-edge

technology that keeps pace with the speed of today's evolving markets. We are proud to collaborate with Intel to verify Celestica's Tyr S2123 server as an Intel Select Solutions for Media Analytics.

Our Tyr S2123 server platform has undergone benchmark testing to meet a specified level of workload performance under the Intel Select Solutions program.

Optimized to meet the rigorous demands of today's evolving markets, Intel Select Solutions deliver industry-leading performance and power efficiency for advanced inference and media analytics workloads.

### Key benefits include:

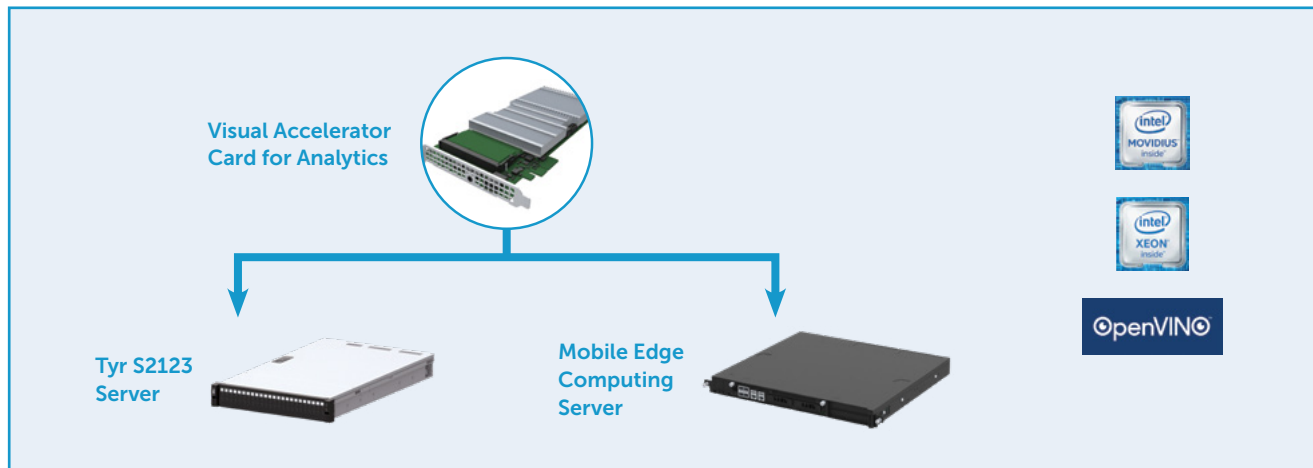
- **Faster evaluation:** eliminate the guesswork and speed decision-making by using validated, tightly specified hardware and software components. IT managers can focus their search on key value-added elements and select an optimal solution quickly.
- **Fast and easy deployment:** by featuring pre-defined settings and rigorous system-wide tuning for efficient pre-deployment testing, IT staff know what to expect up front, which speeds time to service delivery and increases confidence in solution performance.
- **Workload-optimized performance:** with configurations designed by Intel and its partners to deliver to a performance threshold for the workload, IT managers can rest assured that Intel Select Solutions for Media Analytics are built using the latest Intel architecture technology.

<sup>1</sup> Video Analytics Market by Type (Software and Services), Application (Intrusion Management, Incident Detection, People/Crowd Counting, Traffic Monitoring), Deployment (On-Premises and Cloud), Vertical, and Region - Global Forecast to 2023

## Accelerating Media Analytics Workloads

Optimized to manage the highest density offload acceleration, Celestica's Tyr S2123 solution integrates our new VCAC-A Accelerator Card to drive on-card decoding and video inference. The Tyr S2123 server combines the power of Intel software, and efficiency of the OpenVINO (Open Visual Inference and Neural network Optimization) Toolkit with the performance of the VCAC-A Accelerator Card to deliver a solution designed for today's growing media analytics workloads and use cases.

- Accelerate application performance across a range of Intel architecture processors to deliver fast, efficient deep learning and AI workloads
- Speed up deep learning inferencing from edge to cloud
- Deliver ease of use and speed up time to market for application developers
- Enable the model optimizer and inference engine
- Optimize Libraries and Functions for traditional computer vision (Open CV, Open VX)



### Tyr S2123 Server Key Features

- All-purpose Enterprise and Cloud 2U Rack Server with All-NVMe and GPGPU support
- 2 Intel® Xeon® Scalable Processors in 2U space, with 24x DDR4 DIMMs
- Flexible IO expansion with up to 8 PCIe Slots for Expansion, and one standard OCP card
- Supports Variable Disk Drive configuration, 12x 3.5 and 24x 2.5, both support NVMe Drives
- Offers a system solution for 2GPU cards and reserved 3GPU design for future usage

### 2nd Generation Intel Xeon Scalable Processors:

- Offer high scalability that is cost-effective and flexible, from multi-cloud environments to the intelligent edge
- Establish seamless performance foundation to help accelerate data's transformative impact
- Support breakthrough Intel® Optane™ persistent memory technology
- Accelerate AI performance and help deliver AI readiness across the data center
- Provide hardware-enhanced platform protection and threat monitoring

## Target Use Cases

The Tyr 2123 Flexible Configuration Platform with the integrated VCAC-A Accelerator Card is designed to meet the high-performance requirements of the evolving visual cloud and media landscape. As technology enhances, we will continue to see expanding opportunities for application, including:



### Smart City

Media analytics can be used within smart cities to identify vehicles, including their license plates for traffic monitoring and toll collection.



### AI Guided Video Encoding and Live Streaming

By adding AI capabilities to video encoding algorithms, broadcaster and OTT producers can control and optimize quality and bandwidth parameters to meet specified goals.



### Smart Factories

Media analytics in smart factories includes facial recognition of machine operators, optical character recognition, and defect detection.



### Real-time and Offline Media Analytics

By using object and performer detection and classification, AI applications can help CSPs and CoSPs (Communications Service Providers) identify and tag content at different points in the delivery system, in real-time or offline.



### Immersive Media Enhancement

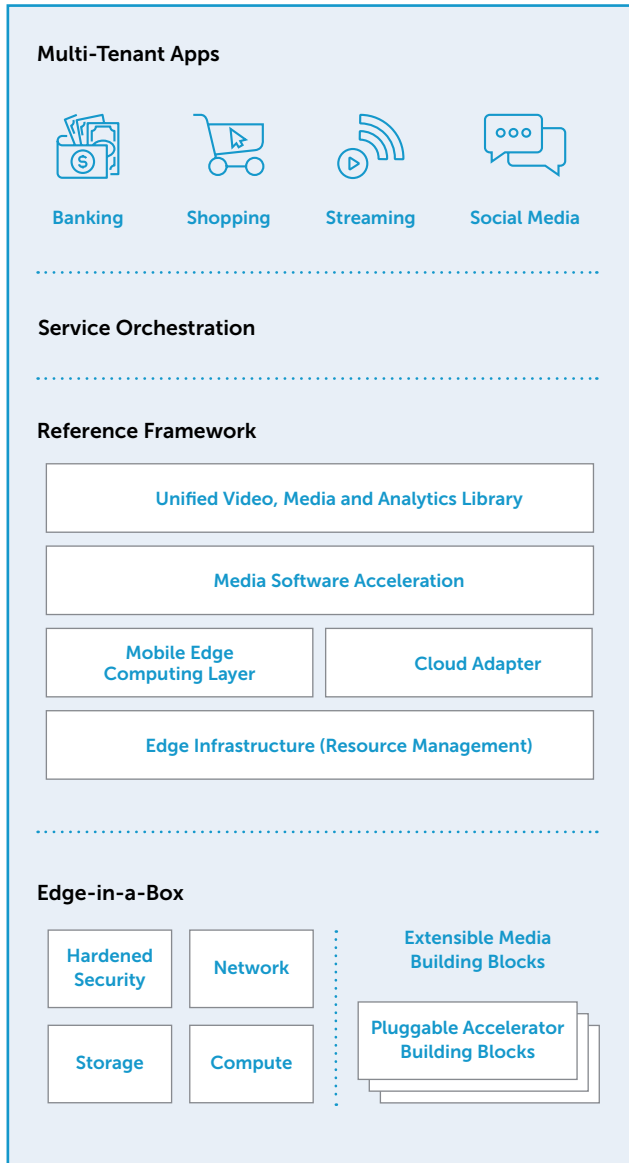
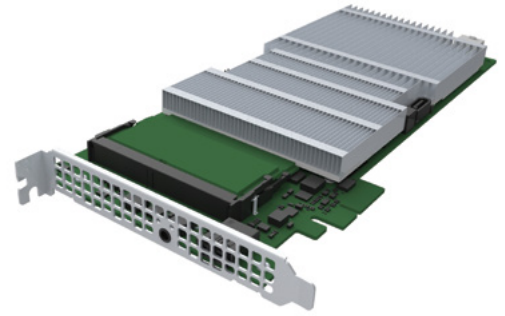
Applying analytics to immersive media applications opens opportunities in both 360-degree content display and AR applications.

Intel® Select Solutions for Media Analytics © 2019 Intel Corporation

	Intel Select Plus Configuration	Celestica Tyr 2123 Configuration for Media Analytics
<b>Processors</b>	Intel® Xeon® Gold 6230N @ 20C, 2.3GHz	Intel® Xeon® Gold 6230N @ 2.30GHz
<b>Memory</b>	192 GB	192 GB
<b>NIC</b>	Dual Port 25GbE Intel® Ethernet Network Adapter XXV710 SFP28	Dual Port 25GbE Intel® Ethernet Network Adapter XXV710 SFP28
<b>Storage Capacity</b>	2x Intel® NVMe P4510 Series 4.0TB NUMA aligned	2x Intel® NVMe P4610 Series 6.4TB NUMA aligned
<b>Storage (Boot Drive)</b>	2x 480GB Intel® SSD S4510	2x 800 GB Intel® SSD SATA
<b>Accelerator card (VCAC-A)</b>	4x High Density Intel Visual Cloud Accelerator Card - Analytics	6x High Density Intel® Visual Cloud Accelerator Card - Analytics
<b>Software</b>		
<b>GStreamer</b>	GStreamer Core Library version 1.16.0	
<b>Package</b>	gst-video-analytics.git	

## Visual Cloud Accelerator Card for Analytics

Visual Cloud Accelerator Card for Analytics (VCAC-A) is a standard PCIe form factor card with 12x Intel® Movidius™ Myriad™ X VPUs, supported by a low-power Intel® Core™ i3 CPU (integrated Intel® HD Graphics 620). This accelerator card provides a power-efficient, cost-effective visual cloud solution for the emerging AI market for inference and media analytics applications at the edge.



### FEATURES

Intel Core® i3-7100U processor

- Dual Core
- 2.4 GHz base frequency
- 3MB Intel Smart Cache
- TDP 15W

2x 4GB DDR4 SODIMM Memory, Total 8GB

12x Myriad X MA2485 VPU

- 700MHz operation frequency
- 16x VLIW 128bit floating-point vector processor
- 2x 32-bit RISC processor
- 4Gbit LPDDR4 Memory in package

PCIe Gen3 x4 Host Interface

### POWER AND COOLING

Passive Cooling

MAX 75W

### PHYSICAL DIMENSIONS

Height: Full Height 126 mm

Width: ¾ Length 254 mm

Single Slot Width

### ENVIRONMENTAL

Operating Temperature: 0°C to 55°C @ 15CFM

Non-Operating Temperature: -20°C to 70°C

Humidity: 8% to 85% RH

Operating Altitude: 3,050m

### APPROVALS

EMC: Class A, CISPR 22, FCC, CE

Safety: CB Scheme, UL, cUL, CE

Environment: RoHS

*Note: All specifications and figures are subject to change without prior notice.*



LEARN MORE:

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