HM Revenue & Customs

Artificial Intelligence Server for Fraud

Broadberry™

Date:
Q1 2020

Application:
Artificial Intelligence

Tags:
Machine Learning, NVIDIA Tesla V100

CUSTOMER:

HM Revenue & Customs

The UK's tax, payments and customs authority who collect the money that pays for the UK's public services and help families and individuals with targeted financial support.

SOLUTION BRIEF:

HMRC were looking for a high-performance artificial intelligence solution for a project tasked with reducing fraud in personal tax collection.

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HM Revenue & Customs

Application

- Artificial intelligence
- Testing,
- Deep-Learning
- Research and Development

Project Background

When HMRC was formed back in 2005, its fraud detection systems were arguably far from cutting edge. Since then HMRC has invested in new systems which are capable of computing vast amounts of data.

The fraud detection department of HMRC approached Broadberry Data Systems to supply a high performance server processing server which could power a new artificial intelligence software solution it had designed.

Key Requirements:

- Cost-Effective
- Low-Latency
- Compatible with HMRC's in house software
- Capable of massive parallel processing for high volumes of data
- Redundancy

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Broadberry Solution

As a market leader in high performance solutions for artificial intelligence applications, we provided a range of solutions that fit perfectly with HMRC's requirements.

The Broadberry CyberServe Xeon SP - FA77B7119, configured with 10x NVIDIA Tesla V100 GPU cards offered the best performance for the budget in HMRC's specific application.

Our solution came in 70% lower cost than proposed solutions from other leading vendors, whilst boasting a massive increase in CUDA cores.

Key Numbers

>51,000
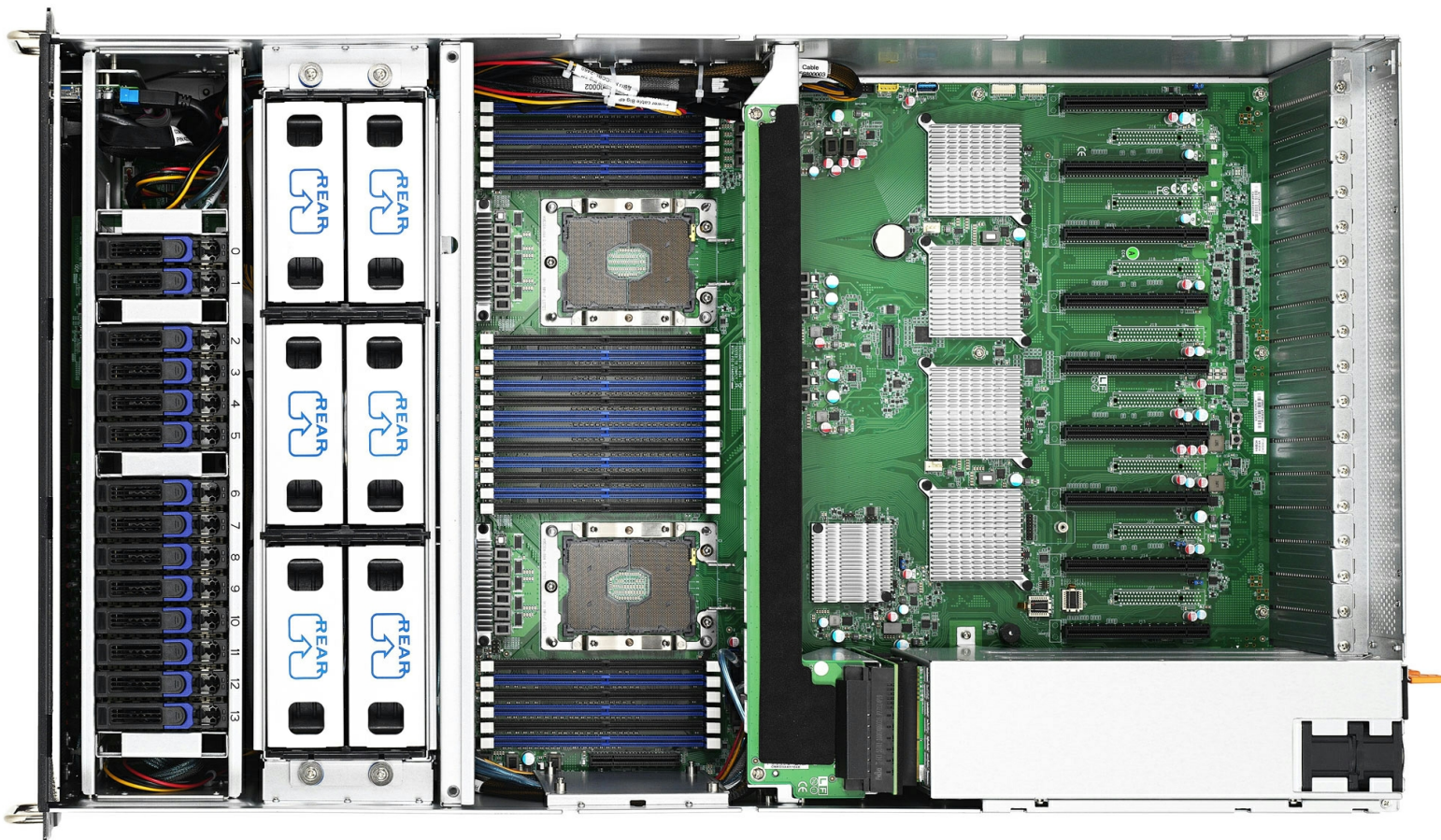## CUDA Cores

Solution Specifications

Our accepted solutions was a CyberServe Xeon SP - FA77B7119, a Dual Root Complex 4U, 10 GPU Server powered by the latest Xeon SP processors.

- 10x NVIDIA Tesla V100
- Over 51,200 CUDA Cores
- Latest Intel S4510 Series SSD
- 2x Intel Xeon Platinum 8260 Processor - 24 Cores, 2.4GHz, 35MB Cache (165 Watt)
- 384GB ECC Registered Memory
- 5 Year Broadberry On-Site Warranty - Next Business Day

Features:

- Up to 24 CPU cores per socket
- 50% Increased memory bandwidth with 6 memory channels per socket
- Memory speeds up to DDR4-2667 (depending on CPU SKU)
- No slowdown in memory speed when deploying 2 DIMMs per channel
- Increased PCIe connectivity to 48 PCIe Gen3.0 lanes per CPU socket
- Optional Integrated Intel Omni-Path Architecture Host Fabric Interface
- Native support for up to 14 SATA ports
- New Ultra Path Interconnect
- New Advanced Vector Extensions 512 (AVX-512)

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