DELLTechnologies

Preparing the world's mobile telecoms industry for a future built on 5G

"Providers find TeraVM is the ideal tool for their 5G core network testing as it emulates real-life subscribers in their millions and presents a thorough test environment. It's deployed on specially configured, globally standard Dell servers, reducing the cost of ownership."

Owen O'Donnell
TeraVM Marketing Manager | VIAVI Solutions

Situation Analysis

Testing 5G networks in preparation for the most demanding scenarios.

VIAVI is a global provider of network test, monitoring and assurance solutions for communications service providers, enterprises, network equipment manufacturers, government and avionics. It has more than 4,000 employees and over 1,600,000 instruments in use around the world.

Introducing 5G safely and effectively

VIAVI has recently introduced solutions to support and accelerate the rollout of the 5G communications standard, which will introduce many benefits to consumers and business through higher speeds and superior connectivity. These don't just improve the performance of current applications but provide a platform for a whole new exciting ecosystem of technologies, including Edge computing, the Internet of Things and autonomous vehicles.

5G also introduces a new radio interface, a standalone core network, separation of control and user plane and new services such as network slicing. Infrastructure vendors and service providers need to ensure their services adhere to the new standards, that they work at peak loads and continue working when things go wrong. VIAVI has developed TeraVM to test these vitally important processes.

The vital need for consistency

5G tier 1 operators use VIAVI TeraVM to stress test their network cores, as well as simulate high traffic loads and the control of traffic during signalling storms. To maintain the extremely high levels of reliability and consistency required by mobile operators, VIAVI hosts its tools on industry leading hardware available in a globally supported format.

Design Partnership

Building on a successful relationship to deliver high performance, reliable solutions.

Since VIAVI already used servers from Dell Technologies for internal use, it was a natural first step to consult the Dell OEM Solutions team when looking for a partner that could satisfy its business-critical OEM requirements for 5G testing and validation.

VIAVI chose Dell Technologies OEM Solutions to provide PowerEdge Dell R6515 and R7525 servers for their TeraVM and TM500 products. With the TM500 product servers are integrated with VIAVI's own custom field-programmable gate array (FPGA) cards and Linux-based application suite.

VIAVI found AMD EPYC processors to be fully capable of performing telecoms grade applications from a CPU core density and compute power point of view. It has now created the global de-facto standard in 5G network test appliances, fulfilling the needs of the world's biggest mobile communications providers.

The company worked with OEM Solutions over several months to fine-tune a hardware configuration that exactly matched its specific requirements. This involved multiple face-to-face meetings and the use of trial hardware to test and validate server technology, ensuring optimum performance with VIAVI's software and cooling of their FPGA cards.

OEM Solutions brands servers supplied to VIAVI with a bespoke purple VIAVI honeycomb bezel. It also attaches custom labels to the boxes, and integrates some non-Dell hardware into the servers provided, such as custom cables and a storage backplane design unique to VIAVI's requirements.

Strong technical partnership helps VIAVI meet the stringent requirements of global mobile communications service providers.

· Shipments of servers dovetail with VIAVI's just-in-time (JIT) manufacturing processes.

· Distribution is made to VIAVI UK for final shipment to customers globally.

· Standardised units are built in Dell Technologies' global factory network.

· Branded servers and packaging are provided, plus inclusion of custom components.

· Extensive pre-sales and post-sales technical support are made available.

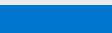· Access is provided to a dedicated OEM Support phone number and team.

Outcome

VIAVI's TeraVM is the ideal tool for operators' 5G core network testing and enables the introduction of a richer, more robust communications environment.

5G will provide the connectivity necessary to support remote and flexible working patterns in the future, as well as wider industrial applications such as those delivered via the Internet of Things, Edge computing and autonomous vehicles. TeraVM gives 5G engineers a controllable and repeatable test environment that helps implement new standards rapidly. It also simplifies the development lifecycle of the 5G core network and the introduction of 5G services to the market.

TeraVM is also deployable in the cloud – another scenario critical to 5G providers. With more and more telecoms equipment being cloud hosted it makes sense to also test in that environment.

Collaborating with Dell has given VIAVI the reassurance and confidence that their hardware is in the best hands possible, so they can focus on their market-leading core competencies and IP. "The reliability and scalability of Dell's PowerEdge servers makes them ideal for critical 5G testing where dependability over long test schedules and ease of scaling-up loads are paramount," says Owen O'Donnell, TeraVM marketing manager.

VIAVI is looking to work with OEM Solutions on the next stage of building and delivering its products to customers. Leveraging Dell's manufacturing and global presence will enable VIAVI to focus even more on their area of expertise and leave the physical manufacturing of their product to Dell.

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Dell Technologies/OEM Solutions:**

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