

NEXT-GENERATION DEPLOYED NODE

How to gain a tactical advantage, leveraging commercially available edge systems in a rugged, deployable form factor.



Dimensions
222 mm x 220 mm x 431 mm
8.74" x 8.7" x 16.9"

Weight
< 25 kg

FIGURE 1. HPE EL8000 Product Specification



FIGURE 2. HPE EL8000 in the Ultralife MIL-SPEC Case



FIGURE 3. HPE iLO Management

CURRENT LANDSCAPE

The UK's In-service Battlefield and Tactical Communications & Information Systems (BATCIS) is currently going through a new design and the next generation of tactical communication (as part of a single information environment) is a key priority.

By and large, existing deployed military units rely on connectivity to a central HQ. Whilst this ensures a strict hierarchy of decision-making, a delay often exists between the transmission of information and an associated action being executed. This challenge is intensified if the connection to HQ is compromised. How then does a forward command post make intelligent tactical decisions without a hierarchy of decision-makers?

Furthermore, traditional deployed technologies are limited in their performance and scalability, and as a result, limit the speed and accuracy of real-time information for the tactical edge. These conventional (outdated) deployed technologies are not efficient for rapid mission configurability and are often not size, weight and power (SWaP) optimised. Time to readiness in a critical situation is paramount. Current deployed systems often require lengthy procedures to reach full operational readiness. This impacts the time to effectiveness in a battle situation.

SOLUTION

To support the tactical edge and enable operational efficiency and intelligence sharing, Hewlett Packard Enterprise has developed a highly protected, technologically advanced deployed solution that tackles the aforementioned challenges

providing an information advantage across the operational landscape. This allows forward command posts to be more effective through access to information and services irrespective of physical location.

Deployability

Optimised for SWaP, HPE Edgeline 8000 (EL8000) is a man-carriable, edge-designed data centre. The system meets MIL-STD-810G standards and can operate at sustained temperatures of -40°C to 55°C. The HPE EL8000 is a suitable solution for hostile and harsh environments on the forward edge of the battlefield (FEBA). HPE also partners with Ultralife® Corporation for custom HPE EL8000 transportation cases, which further enhances the durability/portability of the HPE EL8000 and decreases the costs and time associated with standing up and maintaining forward operating bases.

COTS-designed enterprise hardware

The HPE EL8000 is a commercially developed system, powered by state-of-the-art technology from vendors such as Intel®, using their Gen2 and Gen3 Intel® Xeon® Scalable processors. This extreme level of performance allows the most demanding applications (more synonymous at an HQ / data centre) to run unaltered at the tactical edge. Common virtualisation and container technologies are supported on the HPE EL8000. This provides commanders with the same capabilities, user experience and information irrespective of location. The resilient hardware design allows applications to be highly available with failover capabilities in the event of a component failure. The EL8000 is the most capable rugged edge server system due to its high performance and ability to operate at sustained high temperatures.

Solution brief

Security and manageability

System security is critical to help ensure the integrity of the information gathered, thus the HPE EL8000 is designed accordingly. Silicon root of trust from HPE makes sure the HPE EL8000 can only use system code (BIOS, firmware and others) from a verified source. HPE system-level software is cryptographically signed and can only be accepted by the system when authenticated via an encrypted key (stored on the servers' silicon). This mitigates the threat of erroneous (foreign) system software being applied. Furthermore, and with the inclusion of self-encrypting drives, data is encrypted, even at rest.

HPE excels in systems management capabilities, inventing technologies such as the HPE iLO. HPE iLO is fully functional on the HPE EL8000 offering comprehensive systems management whether deploying, managing or maintaining. For more information on the features HPE iLO provides, visit: hpe.com/uk/en/servers/integrated-lights-out-ilo.html.

Software and application ecosystem

With the performance capabilities that the HPE EL8000 offers, one can now rethink what can be supported at a deployed location. Applications – whether commercially available or bespoke for the military (for example, SharePoint, email, situational awareness, signal analysis,

NATO apps to mention but a few) – can be deployed with confidence. Complex artificial intelligence (AI) and machine learning (ML) workloads can also be exploited and when connected to real-time sensors (bio [soldier], environmental, visual, sound, radio and vehicle) facilitate real-time data ingestion and analysis. This gives up-to-date intelligence to aid decisions and provide an unprecedented advantage for a tactical gain.

BENEFITS OF THE HPE EL8000

Empower the edge

Ensuring that the right information is with the right commanders at the right time makes for better decision-making, resulting in a tactical advantage. Informed decisions allow for survive, fight and win outcomes even if disconnected from the upper echelons. The ability of HPE EL8000 to operate as a self-sufficient intelligence system and be able to process and synthesise data in real-time enables the collaboration of accurate data between commanders and/or HQ. One has the option to devolve empowerment and decisions to forward commanders (perhaps in the event of a communications link failure) due to a self-sufficient intelligence system with enriched and accurate data placed at the edge.

Do more at the edge

Any J6/G6 communications manager will have a Primary, Alternate Contingency and Emergency (PACE) plan for each mission or task. Communication on this plan is currently handled primarily over voice, which is reliant on stable data channels and long-haul pipes back to data centres. PACE plans exist today due to unreliable communication paths. A pre-configured HPE EL8000 can run many high-end applications and is easily deployed. With the right applications, an accurate Common Operating Picture (COP) can be established rapidly and shared amongst commanders at the edge. Position Location Information (PLI) and Cursor on Target (CoT)

are almost instant taking only the time for servers to switch on and load (seconds). You know where your team is without a radio check. Synchronising with rear echelons can come later once long-haul pipes have been established.

Survivability and time to readiness

HPE EL8000 has been designed for the harshest environments and is able to operate in the most demanding conditions. Due to its SWaP characteristics, it can easily be man-carriable to a remote location. It can be viewed as a pre-configured data centre but with portability that is unique in the industry for the level of performance it delivers. This is important for reducing the time to readiness for a front-facing military unit and the HPE EL8000 (with its applications pre-installed) can be fully operational in a few minutes.

SUMMARY

The status quo is not a sustainable model for the specialist and army units that seek to gain a tactical advantage in the deployed domain. Current communications systems are outdated and struggle to cope with the growing challenges and threats. HPE can address this with the HPE EL8000, which helps transform existing Tactics, Techniques and Procedures (TTPs).

Utilising the HPE EL8000 enhances deployability, security and performance – with next-generation Intel CPUs – and more importantly, is an enabler to run a wider suite of applications and software. Data can be analysed in real time for quick and proactive decision-making by frontline commanders. Therefore, having less reliance on HQ and long-haul communications means that the tactical edge can be autonomous and the HPE EL8000 provides a viable solution for current and future demands.

LEARN MORE AT

hpe.com/uk/en/servers/edgeline-systems.html

Make the right purchase decision.
Contact our presales specialists.



Chat



Email



Call



Get updates

**Hewlett Packard
Enterprise**

© Copyright 2021 Hewlett Packard Enterprise Development LP. The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Intel, Intel Xeon and the Intel logo are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries. SharePoint is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries. All third-party marks are property of their respective owners.

a50004970EEW, September 2021