Make the most of your data. Anywhere in the world.

Explore Dell EMC OEM solutions for marine industries.
Marine Industries Solutions from Dell EMC OEM

Current Maritime IT Challenges

Maritime organizations have thousands of seagoing vessels of varying ages that need to be updated with modern technology to collect, store and analyze critical data. This is being driven by two key factors. The first is global digital transformation and the need to leverage new technology to stay competitive. Second, there are new and more stringent environmental regulations for the maritime industry. The key challenge for these organizations is that these updated IT solutions will often be operating in locations outside a climate-controlled environment.

Space in these remote locations is typically at a premium. It is often cramped, not sufficiently ventilated and subject to extended environmental factors. This demands that solutions be designed to work and deliver real-time insights under harsh conditions.

Complicating the challenge even further is the fact that the delivery of systems management and support services can be problematic, especially in remote port locations or at sea.

For many organizations, industrial grade remote IT infrastructures are built in house by integrating components from multiple vendors who may not understand key certifications or accepted industry testing standards. Additionally, their supply chain for commodity purchases may be cumbersome.

Maritime Industries like oil and gas, exploration, cargo, passenger and defense, understand the challenges associated with the EDGE IT and the new world of digital transformation. They want practical solutions that will help them accelerate business growth and enhance their competitive position in their market.

By harnessing and analyzing the wealth of data available at the EDGE, companies will be able to make critical real-time business decisions where the data is captured. But building real-time EDGE Analytics solutions isn’t easy.

Organizations are realizing that to hire qualified teams which are dedicated to procure, assemble, continuously certify, upgrade, protect, secure and support IT infrastructure across multiple remote locations is expensive and depletes precious working capital. We believe that these limited resources should be applied to an organization’s core business strength to further its own innovation. There is a better way.

At Dell EMC OEM, we have the people, products and services available to integrate the latest technology, with an organization’s intellectual property. Together, we can accelerate the creation of an end-to-end solution ready to be deployed regionally or globally.

We pride ourselves on assisting our customers in developing and sustaining unique solutions tailored to their industry needs. Our dedicated OEM teams have extensive industry knowledge and a robust a tier-1 portfolio of products and capabilities to help organizations succeed in their digital transformation journey.
The Dell EMC Rugged Extreme Remote Data Centre Appliance (RE-RDA) Concept is a robust fit-for-purpose, pre-integrated HCI infrastructure solution based on VMware Software Defined Data Centre (SDDC) technologies, while also delivering an advanced Virtual Desktop Infrastructure (VDI) user experience with VMware Workspace One. In addition to the RE-RDA, there are options on client devices, wireless networking and data protection.

The RE-RDA includes options for pre-assembly, with testing and shipping as a single appliance or individual components for onsite implementation by the customer, or optionally by Dell EMC OEM deployment services.

Why should you care? Using the RE-RDA approach to address your distributed EDGE infrastructure requirements dramatically reduces deployment time, reduces cost, increases productivity and simplifies IT operations across multiple sites.

The RE-RDA is a packaged solution that is DNV GL certified. The RDA-RE is built with the latest hardware and software technology from Dell Technologies. The appliance is based on the Dell EMC OEM rugged PowerEdge XR2 Servers, with SSD storage for maximum performance and resilience, offering DNV GL Type Approval for marine usage.

The HCI software is based on VMware SDDC including vSAN and Workspace One. The architecture offers non-disruptive scale up and scale-out expansion, data de-deduplication & compression for maximum data storage efficiency and data encryption for information protection. Cluster configurations offer maximum availability and quality of service between two RE-RDA Appliances, to ensure critical systems always remain online and available.

Additional functionality can be added with deploying optional Virtual Appliances into the RE-RDA. Cloudarray offers data tiering to private or public cloud, UnityVSA offers a virtual NAS/iSCSI storage array for file or block access to the RE-RDA and DDVM offers an advanced B2D appliance, along with the Dell Data Protection Suite for VMware.

Learn more about this solution and others at OEM Maritime.
The example solution shown consists of six HCI nodes, representing a mid-range design. The cluster offers the flexibility to create a cluster between 3 and 64 nodes. The solution also offers the capability of deploying a 2 node cluster, which is fixed and not expandable. This 2 node cluster requires a witness deployed locally, remotely or in the cloud.

Where necessary, optional physical protection can be added to the HCI / VDI Appliance, using Schneider SmartBunker racks, SmartShelter Containers and Portable Cases from Peli-Hardigg. These are designed to protect compute components in a wide range of harsh environments.

This example solution shows management servers with separate management and compute fabrics. Depending on the end use requirements, the architecture can be consolidated or expanded as required. Depending on the end use requirements, the architecture can be consolidated or expanded as required.

Leave the need for rugged compute to us.

1 – x Aerohive AP1130 Rugged wireless
(Outdoor with marine grade mounts)

2 x Dell EMC Networking

2 x Dell EMC PowerEdge XR2 - VMware VSAN Management
(DNV GL Type Approved Servers)

2 x Dell EMC Networking
N3024 - Computer Network
(DNV GL Type Approved Switches)

6 x Dell EMC PowerEdge XR2 - VMware VSAN Computer
(DNV GL Type Approved Servers)

1 x Dell EMC PowerEdge XR2 - DataDomain VE B2D Appliance
(DNV GL Type Approved Servers)

1 x Smart - UPS SRT 6000VA RM 230V Marine
(DNV GL Type Approved UPS)
## Summary specifications

**Operating**
- 5°C to 45°C with the XR2 Server
- 0°C to 45°C with S4048 ON Networking
- 45°C continuous operation, with 55°C excursion for up to 8 hours

**Non-operating**
- -40°C to 70°C

**Relative Humidity**
- 5% to 95% at a maximum wet bulb temperature of 33°C (91°F); atmosphere must be non-condensing at all times

**NEBS / ESTI**
- **Altitude:** Up to 4000m; Sea Level -60M to 1800M; -61m to 1829m at 40°C; from 1829M to 3960m at 30°C
- **Dust:** Dust filter rated 80% per ASHRAE Std52.1
- **Seismic:** Operational resiliency up to Richter 7.5 seismic event (Zone 4 seismic event)
- **EMI:** Immunity up to 8kV/15kV or air/contact
- **Fire:** Built with fire retardant material to contain and extinguish fire if any occurs inside the box

**MIL-STD (XR2 Server)**
- **Max Operating Vibration:**
  0.00220783 g²/Hz at 10-500 Hz (overall 1.04Grms), 1 hr per axis
  MIL-STD-810G, Method 514.6, Figure 514.6D-9
- **Max Non-operating Vibration:**
  Vertical: 5-500 Hz at 1.04Grms, Transverse: 5-500 Hz at 0.204Grms, Longitudinal: 5-500 Hz at 0.740Grms, 1 ting Vibration/hour per axis
  MIL-STD-810G, Method 514.6, Figure 514.6, Procedure I, Category 4, Figure 514.6C-1 (US highway truck vibration),
- **Max Operating Shock:**
  40G, 11 ms, saw tooth, 3 shocks, +/- per axis
  MIL-STD-810G, Method 516.6, Procedure I
- **Max Non-operating Shock:**
  40G, 11 ms, saw tooth, 3 shocks, +/- per axis
  MIL-STD-810G, Method 516.6, Procedure V
- **Max Packaged Shock:**
  36” all 6 sides and 1 corner
  MIL-STD-810G, Method 516.6, Procedure IV,
- **Max Operating Altitude:**
  4572m for 1 hour after stabilization
  MIL-STD-810G, Method 500.5, Procedure II
- **Max Non-operating Altitude:**
  12,192m for 1 hour after stabilization
  MIL-STD-810G, Method 500.5, Procedure I, (Storage, Air transport)

**Certifications**
- The XR2 Server is also DNV GL Type Approved.
## Industrial Portfolio

Experience a complete line of edge products for both fixed and mobile applications.

### SERVER

**PowerEdge XR2**  
Experience our first rackable industrial grade device that provides data center compute in a short-depth 1U design that is secure.

### DESKTOP

**OptiPlex XE3**  
Enhanced performance, expandable industrial-grade PC featuring high heat tolerance and exceptional manageability.

### EMBEDDED PC’S

**Models 3000, 5000**  
Configurable, rugged and fanless Embedded Box PCs are built to commission your solutions faster and recognize revenue sooner where needed.

### GATEWAYS

**Models 3000, 5000**  
Edge Gateways are intelligent devices for the Internet of Things (IoT). With a variety of input output connections, they aggregate data to support analytics.

### LAPTOPS AND TABLET

**Latitude 7212, 7214, 7414, 5414**  
Notebook and tablets that meet rigorous military-standard requirements and provide mobile productivity.