

NAVIGATING THE SEAS OF INNOVATION: UPDATING DATA CENTER INFRASTRUCTURE FOR COSTA CRUISES



digipoint

Established in 1994, it is a leading Italian provider of IT solutions, specializing in network security, business continuity, data centers, and data protection

In 2023, HWG Sababa, an HWG Group company, acquired 82% of digipoint's shares

As part of the Group, digipoint enables companies to innovate safely, extending security to complex infrastructures and adjusting them for the latest requirements and business objectives

Costa Crociere

Headquartered in Genoa, the company operates a fleet of 10 ships, accommodating a maximum of approximately 45,000 guests

Part of Carnival Corporation & plc – the largest cruise group globally

Over 200 destinations worldwide annually, spanning regions from America to the Mediterranean to the Far East

Dell Technologies

Among the top technology companies globally

The company operates in 180 countries and has 130,000+ team members worldwide

Leader in digital transformation, providing organizations with the essential infrastructure to build their digital future, transform IT, and protect their most important information

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Costa Cruises: A 75-year journey

For 75 years Costa ships have been sailing the seas around the world, taking guests every day to a different destination, to be discovered through unique experiences, both on board and ashore. Costa's history began in **1948**, with the voyage of the motor ship "Anna C" from Genoa to Buenos Aires.

From the transatlantic voyages of the "Anna C" to the spectacular modern-day cruises, Costa Cruises – the only Cruise Company sailing the Italian flag – has consistently innovated the way people experience sea vacations. Its ships, more than mere vessels, are **sophisticated floating smart cities** that combine cutting-edge technology, comfort and respect for the environment.

Carefully designed to cater to every vacationer's desire, these ships are equipped with numerous amenities, including swimming pools, spas and wellness centers, fitness facilities, restaurants, elegant lounges and bars, shopping boutiques, theaters, cinemas, and children's play areas.

Central to this experience is the ship's digital core, the **Data Center (DC)**. IoT systems, passenger registration, cabin management, surveillance cameras, and more flow through this hub, while the ship's core functions are managed separately.

Charting a Course Towards Technological Excellence in a sea of challenges

Following an initial replatform of its off-shore data centers in 2016, Costa Cruises embarked on a quest to modernize and harmonize its shore-side data centers – an attempt that mirrored its commitment to delivering exceptional passenger experiences.

The objective encompassed the integration of **2 shore-side data centers** into a cohesive and synergistic entity, **all orchestrated by a single vendor**. Ultimately, the company planned a phase of technology **renewal of the ship-side data centers across 7 of the maritime marvels**.



This technological refresh has posed quite a few challenges – especially with the itinerant data centers on board – thus demanding innovative solutions tailored to the unique complexities and constraints of cruise ship operations.

Connectivity.

Despite being systematically connected via satellite, cruise ships come across enormous costs of maintaining such connections. A distinct challenge was to minimize the interdependence between onboard infrastructure and onshore services. To address this issue, a crucial requirement involved developing **an infrastructure that would be as self-sufficient as possible**, enabling remote connectivity while minimizing continuous data exchange.

Autonomy.

Onboard, an IT Officer serves as a link with onshore facility management. Given the imperative for high autonomy and the intricate shipboard systems, the proposed solution needed to be **streamlined and easily manageable**, ensuring minimal risk of failure.

Space Constraints.

Space is a precious commodity on cruise ships, posing significant challenges for housing data center infrastructure. Previous technologies were both energy-intensive and voluminous, poorly matching the available onboard space. Hence, there was a need to adopt **energy-efficient technologies** and opt for **high-performance hardware**, aiming to decrease power consumption and minimize the physical footprint of the infrastructure.

Service Adaptations and SLAs.

Cruise ships are perpetually on the move, creating unique service demands and Service Level Agreement (SLA) considerations. Indeed, in this context, the traditional 24x7 support with interventions within four hours is not sufficient.

Since ships stop in port for a limited period of time, it was essential to offer **personalized assistance at specific times** to avoid that any delays could cause prolonged disruptions in the ship's journey.

Longevity.

The lifecycle of a data center infrastructure aboard a cruise ship spans five to seven years, presenting a strategic challenge, especially when dealing with products reaching end-of-sale and end-of-support status. Investing in **extended life products** was crucial to adapt to the shifting landscape of technological obsolescence.

Vendor Selection: A Complex Expedition

Leveraging a well-established partnership dating back to 2013, Costa Cruises turned to digipoint to identify the ideal solution, balancing functional requirements and budget constraints.

Given costa cruises' request to have **different contenders** for a balanced evaluation, digipoint meticulously evaluated market offerings, assessing the pros and cons. Presenting multiple offers in an impartial manner proved to be a complex challenge, which ultimately saw **Dell Technologies** triumph due to its ability to fully meet the cruise company's unique needs.

Dell Technologies Solutions

Dell Technologies' success was driven by the presentation of a **three-tier solution** that elegantly addressed the complexities of onboard data centers, effectively countering pressures exerted by the alternative vendors.

Dell Technologies solutions and digipoint's constant presence were backed by the **ProDeploy service** for successful DC implementation, and the **Support Account Manager (SAM)**, who ensured prompt reaction to any issues. A huge advantage was the fact that **Dell Technologies' services were listed**, which helped make scope and budget planning predictable.

The Collaborative Journey of Costa Cruises, Dell Technologies, and digipoint

The renewal journey was divided into several stages, with a detailed assessment and design as the first steps. With a clear understanding of the requirements, digipoint collaborated with the Dell Technologies' team to create a comprehensive project plan to present to the customer. After gaining all necessary approvals, the DC implementation stage started, during which all teams worked diligently together and operated with remarkable precision, minimizing the impact of activities on ongoing operations, both on board and ashore. In particular, on the shipboard data centers, digipoint's ability to set up and implement a migration plan with ships underway without generating any disruption proved crucial.

The activity involved a team of 12 experts and, when necessary, the intervention of other senior-consultants was required in order to ensure that the infrastructure was properly designed and sized.

Throughout this complex project, digipoint held a key position, acting as a bridge between the parties involved, managing logistics, ordering and customizing solutions.

"digipoint represents a valuable and strategic partner for Costa Cruises. In this project, they followed us step by step, starting from the identification of solutions, to design, to supply, to the actual implementation, while also taking care of orders and logistics. Their expertise and solid experience in the industry ensured that everything ran smoothly without any impact on our daily operations",

**explained Aldo Boccini,
IT Infrastructure Director at Costa Cruises.**



Project Results: Customer Gains and Progress

The Costa Cruises' journey with Dell Technologies and digipoint has led to a multitude of advantages:

● **Technological Renewal on Multiple Fronts:**

The revitalization spanned both onshore and ship-side data centers. Through a strategic renewal process, these critical nerve centers were modernized, aligning them with the latest industry standards.

● **Seamless Vendor Consolidation:**

Consolidating infrastructure under a single vendor, Costa Cruises unlocked a new dimension of operational efficiency, fostering balanced management, streamlining processes, and mitigating liability issues through a unified point of contact to quickly address any difficulties.

● **Empowered IT Landscape:**

A notable transformation was witnessed in the IT field. The customer embraced a newfound flexibility and agility, facilitating swift deployment and implementation of new applications. This empowerment translated into quicker response times to dynamic market demands, giving them a competitive edge.

● **Optimized Total Cost of Ownership (TCO):**

Through careful planning, resource allocation, and strategic decision-making, the Total Cost of Ownership (TCO) was markedly reduced.

● **Crucial Energy and Space Savings:**

With innovative solutions, the customer achieved significant energy and space savings, while ensuring optimal operation of on-board data centers.

● **Implementation with Zero Service Interruption:**

The implementation of ship-side data centers was executed seamlessly without interrupting ship services. Careful planning and execution ensured that the transition to new data centers occurred smoothly, preserving the continuity of onboard operations.

● **Resilience in Migration:**

In 2016, during the design and construction of the new ships, digipoint proposed the integration of two Data Centers on two separate verticals, contrary to the existing ships. This innovative approach provides greater resilience in the event of operational disruptions: in fact, if one data center were to experience problems, the other would not be affected since it is located on a different vertical.

● **Unified Management through vCenter:**

During the technological refresh of on-board data centers, the adoption of a centralized control mechanism via vCenter was a fundamental move. This unified management approach simplified the challenges of overseeing multifaceted operations. It provided a singular point of control, ensuring smooth orchestration and efficient monitoring of diverse components.

Nurturing Long-Term Partnerships: Key Ingredients for Success

Sustaining prosperous partnerships within the complex landscape of cruise ship technology necessitates a unique blend of qualities. And this is where digipoint and Dell Technologies have demonstrated their professionalism and proven expertise.

digipoint has been a beacon of expertise and trust: their profound understanding of complex on-board environments and ability to adapt their expertise have added unparalleled value.

“Knowing how to move around on a ship and having this kind of knowledge, understanding of how to relate to the people on board is a great value and is priceless”,

**commented Giorgio Scaramuccia,
Head Of IT Digital Workplace at Costa Cruises.**

Going beyond mere implementation, digipoint offered in-depth analysis and projection, aligning solutions with customer objectives and industry advancements. Their extensive operational support ensured seamless system functioning even in challenging maritime conditions. Furthermore, their respectful collaboration approach, recognizing each partner's strengths and honoring boundaries, was a key ingredient for success.

On the other hand, **Dell Technologies** has emerged as a stalwart partner, offering specialized services perfectly attuned to the unique demands of maritime infrastructure. The long-lasting relationship with Costa Cruises is a clear sign of Dell's commitment to strict regulations and standards, as well as its professionalism and preparation. Moreover, Dell's thoughtfully standardized services ensured consistent operational efficiency and support, simplifying the complexities of planning and budgeting. In conclusion, the tight partnership between digipoint and Dell Technologies not only highlights their professionalism and expertise but also underscores their unwavering commitment to delivering unparalleled value and reliable solutions in the complex field of cruise ship technology.



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