



## ABOUT THE USS MIDWAY MUSEUM

The USS Midway, the longest-serving American aircraft carrier of the 20th century, served from 1945 (the end of World War II) until 1992. The carrier opened as a museum on June 10, 2004 with the mission to preserve, inspire, educate and entertain visitors. Yearly attendance at this unique museum boasts 1,050,000 annually. With its self-guided tours, docent presentations, climb-aboard aircraft, and flight simulators, the USS Midway Museum is ranked as a top San Diego attraction.

## USS MIDWAY BUSINESS NEED

The USS Midway Aircraft Carrier is docked in the San Diego harbor and now serves as a museum, but still requires delivery of compute, communications, surveillance, and other IT related services. The ship has a variety of IT workloads including ticket sales, website, internet connection, email services for employees, exhibits, video security, web-based customer surveys, live streaming, metrics, and special event requirements. With security cameras playing a vital role in ship security, secure data storage and reliable uptime are key factors for this always-on infrastructure.

As the ship was equipped with a traditional server room using standard air conditioning units for cooling, power costs increased. "I was challenged to cool and ventilate the room and was concerned with humidity and poor air quality," explains Joe Gursky, Director of IT at the USS Midway Museum. Joe said he wanted to challenge the old way of "dumping cold air into the room and letting the cold and hot [air] fight it out." The inefficiencies of cooling the space were negatively affecting his operations expenses and equipment.

Being docked in the San Diego Bay exposed the servers to outside weather, causing rust, salt build-up, and dirt which made equipment replacement frequent and costly. Despite frequent deep cleanings, every year they replaced server components that would otherwise have a 5-year lifespan. Joe needed a forward-thinking solution that would solve the power inefficiencies and extend the lifespan of his IT equipment.

## SCALEMATRIX SOLUTION: DYNAMIC DENSITY CONTROL™

- Power and Operational Cost Savings
- Increase Security, Density, Efficiency
- Extend Equipment Lifetime and Performance
- Reduce Data Center Deployment Complexity



# THE DYNAMIC DENSITY CONTROL™ SOLUTION

The Dynamic Density Control (DDC) cabinets were the ideal future-proof solution Joe needed to address cooling challenges, protect his equipment investment, and reduce increasing OPEX costs. Cooling the legacy server room was inefficient and expensive.

ScaleMatrix' Dynamic Density Control™ platform provided dynamic density and cooling control to deliver exactly the resources Joe needed, without waste or additional resources. "We experienced dramatic power savings of over 50% by eliminating the need for ambient cooling and air conditioning units," says Joe. The DDC platform is essentially a data center in a box and eliminates the need for CRAC units, raised floor, air filtration or humidity control. The liquid-air hybrid cooling system eliminates hot spots and delivers precise temperature control; with closed-loop water design, there is no water evaporation occurring. With a sealed front/rear air plenum in the cabinet, it provided a clean environment for the equipment, negating any concerns of poor air quality and particulate matter in the air.

Aircraft carrier height restrictions limited the space available to deploy the DDC™ solution, so manufacturing modifications to the overall unit height were made to support a smaller footprint. The cabinets were assembled piece by piece with people vs any rigging system, and there was no need to cut access holes in the side of the ship due to the modularity of the platform. The water supply the ship uses to cool the aircraft carrier was tapped for the cabinet cooling system.

The DDC NEMA 3R cabinet with clean-room quality air filtration and air-tight design eliminated the laborious and expensive cleaning of equipment, resulting in immediate cost and time savings. DDC was able to extend the lifespan of Joe's equipment, providing further return on the investment. Additionally, there was no need to install an external fire suppression system in the room because of the active fire suppression built into each DDC cabinet. This system passed the USS Midway Museum's City fire inspection, and cut considerable time and investment off the preparation of the IT space.

The USS Midway requirements are 17kW, which means compute capacity growth can be accommodated in the DDC cabinets currently installed, making this a future-proof solution for Joe Gursky and the USS Midway Museum.

**"I'm extremely happy with the energy savings, efficiency, esthetics of the cabinet, and the cost savings of power and extending the life of my hardware,"** - Joe Gursky, Director of IT



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