



**US Army Corps
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ENGINEERING AND CONSTRUCTION BULLETIN

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SUBJECT: Modular Data Centers

APPLICABILITY: For Information

1. **Purpose.** To introduce the concept of the modular data center and to equip project teams with technical information to assess the feasibility of this solution for their particular projects.
2. **Background.** The familiar method for hosting information technology (IT) services in a Department of Defense computing facility incorporates some form of hot aisle/cold aisle separation of server racks sitting on a raised floor air distribution plenum within a permanent ‘bricks and mortar’ building envelope. The goal is complete thermal segregation and bringing the cooling to the source, and we’re now seeing approaches that incorporate complete row enclosure combined with in-row cooling; in effect sealing the cold aisle (providing access doors at the ends), driven not only by operating costs but also by federal mandates. Data Centers require tremendous amounts of cooling, and a large Data Center may consume as much energy as a small town compounding the energy usage is the problem of scalability.
3. **Applicability.** A “modular data center” refers to a solution that include one or a combination of two types of form factors; either containerized (ISO and non-ISO) or pre-engineered site-assembled, or some hybrid of the two. The functional “modules” of a containerized approach generally include either cooling plant, the power systems (i.e. UPS, generator, PDUs, etc), or the IT servers, or they may consolidate all of these functions in an “all-in one” configuration. This technote explores potential project applications and considerations in Army projects.
4. **Technical support.** Assistance with the analysis of potential systems is available from the Center of Standardization - Norfolk: Matthew Scanlon, Information Systems Facility (InfoSys) Subject Matter Expert, 757-201-7114, matthew.c.scanlon@usace.army.mil.
5. **Point of Contact.** HQUSACE point of contact for this ECB is Scott Wick, CECW-CE, (202) 761-7419, scott.c.wick@usace.army.mil.

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JAMES C. DALTON, P.E., SES
Chief, Engineering and Construction
U.S. Army Corps of Engineers