



## United States Navy

Space and Naval Warfare Systems Command  
Office of Public Affairs and Corporate Communications  
Contact: Steven A. Davis / [steven.a.davis@navy.mil](mailto:steven.a.davis@navy.mil)  
Desk: 619.524.3432

April 20, 2010

# Lincoln Strike Group Transitions to Navy's Virtualized Network

## *Ships experience improved connectivity, bandwidth, network availability*

**SAN DIEGO** – The USS Abraham Lincoln (CVN 72) experienced improved connectivity, bandwidth and network availability during January sea trials due to a key modernization initiative.

The Application Integration Early Adopter initiative represents a major shift in how software applications are employed aboard ships. By establishing a common computing environment, combat systems information officers can better manage hardware virtualization, software updates and patches, information security and standardized training.

According to Lt. Cmdr. David White, the Lincoln's combat systems information officer, the enhanced network availability and capability had a significant impact on the crew's effectiveness.

"In the past my days were filled with phone calls telling me which telephone lines were down, the status of email backlog and slowness of the Internet," White explained. "This time, users were never aware when we dropped a satellite shot because we never lost connectivity for SIPERNET or NIPRNET. We were truly operational 24/7."

Virtualization is a hardware-software strategy that allows a number of virtual machines (operating systems, applications or networks) to operate independently and concurrently on a common set of physical hardware. This approach provides advantages of increased reliability and efficiency of information technology systems while reducing the actual hardware footprint and maintenance requirements

The common computing environment will provide a single set of hardware to support applications that can now primarily be installed as software. Installing software from disks, as opposed to hardware racks dedicated to specific applications, significantly reduces the number of hardware racks onboard. Hardware virtualization through blade servers provides the ship's network with central processing resources, dynamic resource allocation and near instantaneous data recovery initiation.

### What a Virtualized Network Provides

#### *Reduced Footprint*

21 force level ships x 6 racks = 126 racks

179 unit level ships x 2 racks = 358 racks

*Common computing environment* means lower procurement, testing and training costs

*Single infrastructure* means tighter information assuredness across all security domains

“Normally I capture bandwidth utilization reports to be prepared to defend the bandwidth management controls we have in place to ensure people can get their jobs done,” said White. “I stopped archiving reports after five days because the bandwidth management was not needed. We were in ‘open hours’ the entire time.”

The Early Adopters initiative is coordinated by the Tactical Networks Program Office (PMW 160) and is a risk mitigation effort that allows deployment of a secure, reliable, common network infrastructure to the fleet. These initiatives pave the way for the introduction of the Navy’s next generation afloat tactical network, the Consolidated Afloat Network and Enterprise Services, or CANES. The Lincoln Strike Group was the first to experience an Early Adopter initiative, which will continue through the full implementation of CANES.

The Early Adopter network not only provided significant benefits to bandwidth performance and reduction in the number of installations, but also provided \$5.7 million in cost savings for the Lincoln, USS Cape St. George (CG 71) and USS Shoup (DDG 86) during fiscal year 2009. Additionally, the Lincoln experienced no satellite communications “drops” and data back-ups were conducted automatically, without having to manually manage tape libraries, while servers remained in use.

“Historically, we would work past liberty call and have significant down time during the satellite and pier cutover. We always had to worry about restoring services,” said White. “This was not the case this time. It took only five minutes to cut over the pier. Our IT specialists were on liberty with the rest of the crew during liberty call.”

According to Navy Capt. Joe Beel, PMW 160’s deputy program manager, “Highly successful operational employment of the modernized tactical networks onboard the Lincoln Strike Group marks a significant milestone in the Navy’s plan to bring ships onto a common network that utilizes proven industry practices to greatly enhance warfighting capability.”

The Integrated Shipboard Network System (ISNS) brings a common computing environment with virtualization and hosting of warfighting applications that allow removal of several racks of system specific equipment. The common computing environment incorporated blade servers and advanced disk-to-disk storage capabilities that greatly enhance the network operator’s ability to manage, back up and recover their systems. The warfare enhancements demonstrated by ISNS are a peek at the improved network capabilities that CANES will bring.

Additionally, the Automated Digital Network System (ADNS) increment III provides ships the ability to harness the increased communications bandwidth provided by improved satellite communication systems. “The combination of CANES and ADNS will allow the Navy to change game in shipboard communications and greatly enhance the warfighter’s ability to dominate in the information intensive environment that they operate in today and tomorrow,” said Beel.

The CANES program represents a fundamental change in the way the Navy acquires and develops shipboard networks. CANES will replace and consolidate numerous duplicative legacy networks in use today. It will provide greater capability, reduced manpower, simplified installation and lower lifecycle costs through common equipment, training and logistics. CANES is currently in the systems development phase and is scheduled to begin Low Rate Initial Production in 2011.

“If Early Adopters on the Lincoln are an indication of what CANES will deliver, then the Navy is on the right track,” commented White.

###

## About PEO C4I

<http://www.peoc4i.navy.mil>

Headquartered on the Old Town Campus of the Space and Naval Warfare Systems Command in San Diego, Calif., the mission of the Navy's Program Executive Office for C4I is to provide integrated communication and information technology systems to enable the command and control of maritime forces. PEO C4I acquires, fields, and supports C4I systems that extend across Navy, joint, and coalition platforms. This includes managing acquisition programs and projects that cover all C4I disciplines: applications, networks, communications, intelligence and surveillance, and reconnaissance systems for afloat platforms and shore commands. Supported by Team SPAWAR and industry partners, PEO C4I annually completes more than 2,000 C4I installations to fleet and coalition customers.