VTE

Approach

ManTech's Approach to Virtualized Training

Traditional training environments today are extremely limited regarding classroom availability, curriculum diversity, and courseware delivery. Virtual training environments such as private clouds, hybrid clouds, off-premise clouds, or even just a highly virtualized software/hardware solution provide a cost-effective continuous learning environment scalable to any training needs. What differentiates the ManTech solution from other cloud implementations is our engineering teams' ability to prioritize the system to optimize the pipes and threads that use processing, memory, and data throughput. Our intimate knowledge of nested operating systems and virtual environments enables us to adjust the hardware and software interfaces for a significant improvement of overall responsiveness so the user does not experience lag time between keystrokes and mouse input as with most other virtual environments.

Why Let ManTech Virtualize Your Training Environment?

Moving to a Virtual Training Environment (VTE) offers a highly adaptive, effective, and continuous learning atmosphere scalable to host numerous systems in support of hundreds, if not thousands of users. Benefits of our approach include:

- Active participation with modules, tools, and techniques for learners to do hands-on training and collaboration
- Cost savings by maximizing shared IT resources in a scalable environment
- Expedites time from planning to deploying courseware or enhancements
- Minimized risk with Cyber Security concerns through

strong protocols, rapid verification and validation processes, and 8570/8140 qualified SMEs
- Simulated environment, that if tested in the real world would be catastrophic

Partner Vendors

ManTech is an unbiased cloud solution provider that works across many cloud, storage, and virtualization partners to tailor the solution based on your network and training needs. Through our partnerships, we are able to test various solutions and obtain in-depth training and certifications to adequately perform an analysis of alternatives and propose the best solution to your needs.

Technical Training Environment for Navy SAGA

ManTech supported the DoD CyberSecurity Range's technical vision, design, implementation, and hosting of the Navy System Administrator GOTS Application (SAGA) Technical Training Environment (TTE) system. We developed a dynamically provisioned training solution through a virtualized environment of Navy network systems, which used a group of virtual machines, to simulate the Navy network environment for training on the USN network operations. This solution replaced costly and largely hardware-centric training environments that were outdated, with a highly virtual and emulated, centralized solution. The

classroom network resource was made available to the Navy CID at sites in Pensacola, FL; San Diego, CA; Groton, CT; and Sasebo, Japan. This solution can be dynamically provisioned to support CID training sites across the nation through accredited Navy training networks. These representations include unclassified virtual representations of the ship's Unclassified, Secret, TS/SCI, and CENTRIX ISNS networks and systems with additional ADNS WAN emulations for ship-to-shore training exercises.

Emulated Training in Cyber Security Ranges

ManTech has planned, designed, developed, deployed and sustained a variety of cyber security ranges across DoD to support virtualized training in virtualized and cloud environments for over a decade. A few example ranges we are currently hosting include:

- ManTech's hosted DoD CyberSecurity Range (CSR) encourages cyber warriors to leverage a virtual network environment at multiple security levels and can replicate the customers' daily environment. This unique capability enables customers to hone their cyber skills and practice real-time cyber defense again current and future threats and organizations to better defend their environment. Since 2009, ManTech has provided approximately 500 training, testing, and exercise events of various size and complexity from every service and several agencies within the DoD.

- ManTech's hosted Marine Corps Cyber Range (MCCR) provides a persistent, continuously maintained environment reducing the time and cost between planning and event execution. It is an operationally realistic environment that supports Marine Corps cyber warfighters and arms them with assured, secure, accurate and timely information, to enhance their ability to take the fight to any enemy, anywhere, at any time – and win.

- The USMC Cyber Training and Evaluation Platform (CTEP), a Marine Corps version of the earlier Navy SAGA program, was developed to train and qualify Marines in performing their IT service provisioning function. ManTech not only designed, built, tested and delivered the Initial Operating Capability (IOC) of CTEP within 60 days of the Initial Design Review (IDR), but also delivered live training and lab simulation services to the 78 students of the USMC Basic Communications Officer's Course (BCOC) within that timeframe. CTEP enables the creation of Cyber Warfighter maneuver areas to support full-spectrum cyber training, evaluation, and testing.

Virtualized Training for PEO C4I PMW 130

ManTech has provided PMW 130 with more than 5 years of training and engineering support including designing and developing curriculum, creating technical training, developing C4ISR-specific interactive courseware (ICW), and conducting fleet training surveys and recommending integrated training technology solutions to satisfy DoD training needs.
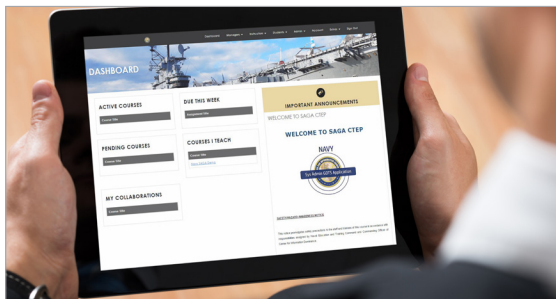
ManTech developed a Mobile Training Suite (MTS) that is easily transported to the remote training locations in both CONUS and OCONUS, and provides fully hands-on training for Information Assurance Suite (IAS) administration, operation, troubleshooting, and analysis of intrusion attempts. Students are immersed in a Navy simulated environment with the most authentic learning experience, with significantly reduced cost, risk, and equipment footprint.

Working hand-in-hand with PEO C4I PMW 130, the Enterprise CND-HBSS Virtual Training Environment (VTE) was birthed in 2012. The VTE provides 24/7 secure access via the DoD TRANET for Navy NSVT training at CID Learning Sites in San Diego, CA; Norfolk, VA; Kings Bay, GA; Groton, CT; Bangor, WA; and Yokosuka, Japan. The current design of the VTE will support 3,000 concurrent Virtual Machines, sufficient to provide NSVT training at six Learning Sites with potential to ultimately be made available to Navy ships and bases worldwide for IT initial, refresher, and sustainment training.

In conjunction with the VTE, ManTech also developed a Learning Management Environment (LME) providing a seamless, learning environment integrating Instructor Led Training (ILT) resources, technical reference documentation, student learning material and guides for hands-on practice, and the interface for launching and managing the MTS and VTE practical exercises.

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