



## How the US Military Health System (MHS) Achieves Efficiency, Lower Cost, Command and Control, Situational Awareness, and Compliance for Global Active Military Hospitals

### Executive Summary

After deploying ConsoleWorks® in 2003, to remotely monitor Network & IT infrastructure at the eight largest regional Military Treatment Facilities (MTFs), the Defense Health Information Management System (DHIMS) has recognized savings achieved by having more visibility, more efficient processes and control of how work is done. As such, the ConsoleWorks deployment was expanded to support the Composite Health Care System (CHCS) remote management needs, where ConsoleWorks provides remote management functionality to all 111 Military Treatment Facilities (MTFs), worldwide.

DHIMS has created a central hub for remote monitoring and management of all 111 on-site systems at MTFs worldwide and will use ConsoleWorks to achieve millions of dollars in annual savings. The hub is staffed with senior level technical support individuals who are trained on ConsoleWorks to perform complex fixes to problems encountered – even before a problem ticket is generated.

As part of the MHS Performance Work Statement (PWS) for AHLTA/CSC (Computer Software Component) Sustainment Support renewal contract, DHIMS has developed the following, multi-year execution plan, - specifically referencing the required use of ConsoleWorks for implementing and achieving its projected staff reductions and associated costs savings:

**5.9 Site Operations Sustainment:** *“At the start of the base period on June 1, 2014, site support shall be 209 Full Time Employees (FTEs) and shall be reduced to 189 FTEs (177 on-site and 12 in the remote monitoring and support hub) at the beginning of the first option period on November 1, 2014. Further reductions shall be to 172 (160 on-site and 12 in hub) FTEs by November 1, 2015, 156 (144 on-site and 12 in hub) FTEs by November 1, 2016, and 142 (130 on-site and 12 in hub) FTEs by December 1, 2017.”*

*“The reduction in on-site support shall be accompanied by the establishment of a central hub for remote monitoring on-site systems at MTFs worldwide. The hub, when fully operational, shall be capable of remotely monitoring and supporting, on a 24x7 basis, all of the MTFs using **ConsoleWorks** software already installed at the MTFs. The hub shall also be staffed with individuals appropriately trained on **ConsoleWorks** to be able to effect routine fixes to problems encountered by remote monitoring of MTF systems.”*

By deploying ConsoleWorks to monitor and manage the global MTF IT Infrastructure, common remediation solutions to problems or “Best practices” may be created, eliminating human mistakes and potentially adding risk. It also allows standardized processes and methods for monitoring the infrastructure. Real-time notification of problems, with built-in operational best practices for problem resolution, creates an efficiency model that allows senior level staff to be placed in a single location. It enables reductions in the field as problems can be remediated remotely by the senior staff in the Central Hub.

Using conservative staff overhead expense dollars and timeframe as specified in the PWS and also using ConsoleWorks as an integral part of the remote hub implementation, DHIMS will realize an ROI, after implementation, in 6 months or sooner.

Phase	# FTEs	Avg. Cost / FTE	TOTAL	Annual Savings
Origination	209	\$60K	\$12.54M	N/A
November 1, 2014	189	\$60K	\$11.34M	\$1.20M
November 1, 2015	172	\$60K	\$10.32M	\$2.22M
November 1, 2016	156	\$60K	\$9.36M	\$3.18M
December 1, 2017	142	\$60K	\$8.52M	\$4.02M

## The Technology Behind the Savings

ConsoleWorks provides DHIMS with several important capabilities that help them to realize savings.

“ConsoleWorks operates separately from the operating system. As such, if a CHCS server, managed by ConsoleWorks, is in local mode or its components and/or operating system is down, ConsoleWorks is still able to actively scan the output of the console for events generated by the system (or by the people interacting with the system) that require action. Notification and corrective action can be taken as soon as an event happens, reducing the number of events that cause unscheduled downtimes. In addition, non-critical events that could become critical are identified and can be corrected before they cause downtimes.”

Specifically:

- ConsoleWorks provides secure remote monitoring and management so that administrators requiring privileged access can service any number of logical or virtual environments, from anywhere, as long as there is an Internet connection.
- By automatically prioritizing events and providing an accurate definition of the cryptic event code, the “process” that leads to root cause analysis and close loop remediation using ConsoleWorks, is collapsed down to a fraction of what it would be without ConsoleWorks.
- Since ConsoleWorks is agentless, the potential risk of missing a critical event is substantially minimized. With ConsoleWorks, notification is immediate.
- ConsoleWorks can also be used as a domain knowledge repository. So, a less knowledgeable or less experienced administrator is now armed with the exact steps that were used by the expert to successfully remediate the error or incident.

**DHIMS Requirement:** “Secure remote access to the consoles of servers, disk subsystems, network equipment and any other device with a serial console port or network console connection via a web” browser” using HTTPS.

ConsoleWorks provides secure remote monitoring and management so that administrators requiring privileged access can service any number of logical or virtual environments, from anywhere, as long as there is an Internet connection.

ConsoleWorks enables strong password implementation, access restrictions by task, by role, and by policy, and user authentication internally (through username/password protocols) and externally (from sources including Windows® Active Directory Domain Services, PAM, and RSA® SecurID®). The software offers two communication security options: SSL and SSH. These options provide for the exchange of encrypted information between the browser (SSL) or the CLI (SSH) and the ConsoleWorks server, and between the ConsoleWorks server and the managed asset (SSH).

ConsoleWorks also supports a robust task-based/role-based privileges model based on user-defined Access Control Rules. Access Control Rules enable DHIMS administrators more granular and graduated control over what specific users can do inside ConsoleWorks and how they can use ConsoleWorks to access and interact with managed assets.

In addition, ConsoleWorks enables real-time collaboration so that geographically separated DHIMS support



staff can work together as virtual teams.

**DHIMS Requirement:** “Secure access to CHCS servers and disk subsystems even if the servers are down, providing an outside-in approach to enterprise IT management”

ConsoleWorks maintains a persistent, secure connection to physical, logical and virtual infrastructures to monitor user actions, machine activity, and all defined incidents worth knowing about. ConsoleWorks is agentless. Agent based solutions require software to be installed on all managed systems, generating a reliance on the availability of the operating system in order to be effective. In the case of an OS failure, a hardware failure, or a network outage, agent based systems become blind and inept. Likewise, when a system is put in local mode for maintenance purposes by systems administrators, vendors, contractors, or business partners, agent based solutions are not available for logging or event scanning because of their reliance on the availability of the OS.

**DHIMS Requirement:** “Scanning of the output of the consoles for events that require action, providing notification so that corrective action can be taken as soon as an event happens”

ConsoleWorks dramatically improves the ability to streamline and optimize IT Operations by eliminating time-consuming event prioritization and research activities. Events captured during scanning by ConsoleWorks are automatically processed, assigned the appropriate priority, and presented with their human-readable definition. This enables DHIMS administrators, engineers and technicians to use their time for value-add issue or problem resolution rather than priority assessment or event code researching.

By automatically prioritizing events and providing an accurate definition of the cryptic event code, the “process” that leads to root cause analysis and close loop remediation using ConsoleWorks is collapsed down to a fraction of what it would be without ConsoleWorks.

**DHIMS Requirement:** “Immediate notification to support people for critical error to provide quick response to an event to prevent them from becoming critical”

Since ConsoleWorks is agentless, the potential risk of missing a critical event is substantially minimized. With agent-based (or polling) solutions, users are forced make a decision on the balance between real-time polling and its effect on system performance. If the frequency of polls is set to 15 minutes, for example, in order to minimize system impact, and an event occurs in the first minute of a cycle, notification does not occur for at least 14 minutes. With ConsoleWorks, notification is immediate.

**DHIMS Requirement:** “Logging all of the activity occurring on all of the consoles AND all activity performed by the people on those consoles. These logs also provide a way to capture and document standardized responses to events.”

ConsoleWorks keeps detailed logs of administrative, user, and incident activity – down to the keystroke. These logs show who did what, when they did it, and what was added, deleted, or modified within the managed asset. ConsoleWorks also applies secure logging technology to log files, for the purpose of detecting record tampering, such as the modifying or deleting of log entries. Coupled with timestamp log entries, ConsoleWorks provides sequenced, tamper-evident logs for compliance and incident forensics.

ConsoleWorks can also be used as a domain knowledge repository. The end user can update ConsoleWorks with recommended remediation actions, by event – even to the inclusion of the exact sequence of commands used to correct the problem, previously. So, a less knowledgeable or less experienced administrator is now armed with the exact steps that were used by the expert to successfully remediate the error or incident. This is an important enabler of continuous process improvement and should the government change contractors, the information does not leave with the contractor. The information stays in the ConsoleWorks knowledge base.

