

# CONFIGURING BATTALION FILE SERVERS

Captain US Army Matthew Sherburne

**Bottom Line Up Front** according to Captain Matthew Sherburne: “Battalions require a file server on their local LAN both in Garrison and on deployments for rapid collaboration and continuity in data between garrison and deployment environments. Maneuver battalions are constantly leveraging technology to better command and control the fight. They are keenly aware that battalions that collaborate faster and more effectively will be more successful in engaging with and destroying the enemy or conducting peacetime operations with the highest potential.” Planning, configuring, installing, operating and maintaining that’s what it’s all about. Behind a clear understanding of these activities lies the difference between operational success and failure. This article is about successful military command and control support.



## ABOUT THE AUTHOR

Captain Matthew Sherburne is the former battalion S6 for the 2-325 Airborne Infantry Regiment, 2BCT, 82nd Airborne Division. Captain Sherburne holds a Bachelor of Science degree in Electrical Engineering from the U. S. Military Academy.

## INTRODUCTION

This is how one deploying brigade combat team filled the communications needs of its warfighters. The 2nd Brigade Combat Team, 2nd Battalion, 325th Airborne Infantry Regiment was put on alert as a part of the Global Reaction Force following the earthquake that struck Haiti on 12 January 2010.

All of the brigade’s equipment was pushed to the equipment flight line in preparation for setting up a standard Joint Network Transport Capability communications architecture at Toussaint L’Ouverture International Airport.

Prior to the deployment, we conducted several airborne field exercises with minimal usage of the communications architecture to include digital collaboration. Services such as SharePoint, widely used in garrison, were barely used due to the low-bandwidth satellite connectivity between the battalion command post nodes and brigade JNN where the main servers are located. With no server operating system on hand, the battalion S6 shop resorted to locally sharing out folders on laptops. The main issue with this is Microsoft has a 10-user limit to accessing those shared resources on standard workstations. Furthermore, laptops are not designed to deal with the increase in data processing. Nor do they have a backup system to ensure no loss of data. Battalion-level file servers must be a Modification Table of Orga-

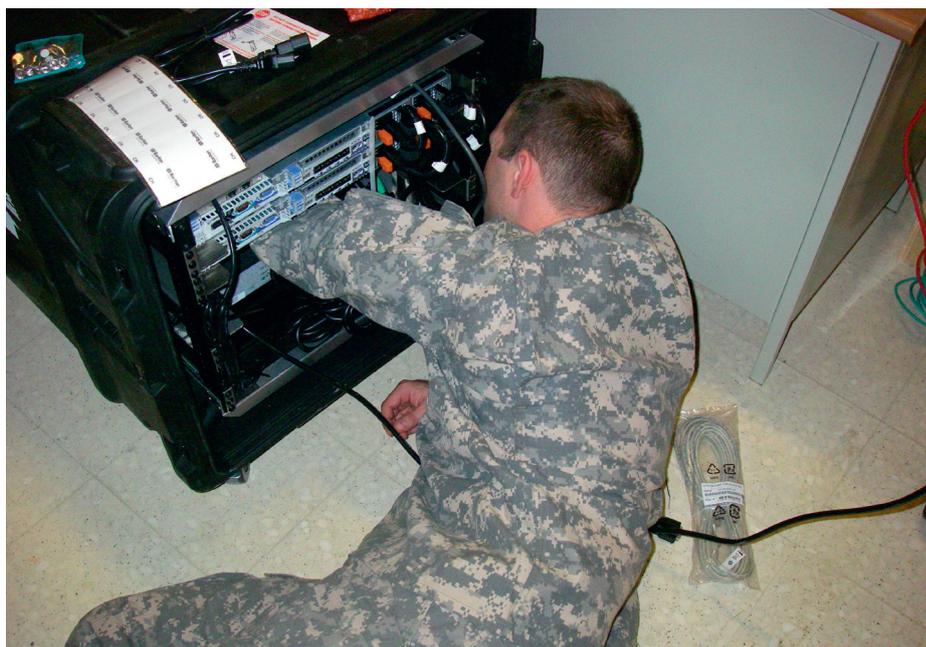
nization and Equipment item in order to enhance combat effectiveness and collaboration.

I joined the battalion in August 2010, just three months after returning from Operation Enduring Freedom X. Immediately I began conducting Military Decision Making Process analysis on communications support for the battalion as we prepared to head to Joint Readiness Training Center on a Forces Command tasking to validate the newest Full-Spectrum Operations Training lanes in September 2010. This became a very unique situation in which we were not allowed to bring our CPN with us because of the GRF mission. We pulled all unclassified services from the Fort Polk NEC which allowed the battalion command and staff to communicate back to Bragg and handle the usual requirement of NCOERs, OERs, and other soldier administration tasks. I realized firsthand the same issues the battalion experi-

enced with data collaboration and file sharing in the absence of a proper file server. The interim solution I could provide as a stop gap was AKO group folders.

The automations Soldiers in the shop employed the same local folder sharing on user laptops, but again, the issue of a ten user limit became apparent when every company commander and staffer tried to access the latest OPORD documents related to the training exercise. The AKO group folders worked, but extremely slow. Additionally, a laptop was set aside to act as a print server for the TOC printers, but the ten user limit also applied.

A month later and I found myself back out in the field for the Battalions Expert Infan-



US Army Staff Sergeant Russell Roberts finishes cabling the file servers.



*The Raritan KVM pulled out and in use installing Windows Server 2008 on the servers.*

tryman Badge in October 2010, this time with my CPN, and this time with a file server. My S6 shop went to the Fort Bragg NEC and picked up a copy of the AGM Server 2008 to load on a Dell D630 laptop. Though not ideal, it did allow the battalion staff and command group to share files, collaborate, and print inside the Deployable Rapid Assembly Shelter.

After the EIB, I was tasked to research and design a tactical file server in preparation for our upcoming deployment to Iraq with the intent that we have it by the JRTC rotation in March 2011. Building on my past experience in Afghanistan, I knew the file servers needed to include a UPS, KVM and ruggedized transit case. The file servers themselves only needed to be fast enough to support functions in a 1U rack-mounted configuration. The UPS needed to accept 120 or 240 volts with plug adapters capable of plugging into any style plug in the world. The UPS needed to maintain power to all critical systems for a period of 15 minutes giving enough time to properly shutdown the servers in the event of a catastrophic power failure or recover from a simple tripped circuit breaker. Several months went by

during the bidding process through CHESSTES 2H and the server waiver through DA G3. Eventually DA G3/G6 granted the AKM Goal 1 Waiver and the BDE S4 completed the necessary steps for our BN S4 to purchase the file servers in May 2011. To save the Army money, I requested that Dell install major components without wiring and no operating system. I knew my automations Soldiers would be able to finish cabling the major components and install the AGM Microsoft Server 2008. The final contract included two Dell R610 1U servers with RAID 5 comprising of three 1 TB hard drives for a total of 2TB of storage on each server. Packaging Strategies, Inc installed all major components to include an APC Smart-UPS 2200VA, Paragon II P2-UMT242 42-Port, 2 User, 1U KVM Switch, P2-EUST/C Paragon II Enhanced User Station/CAC reader, Raritan 17" T1700 KVM Drawer, and two R610 servers into a 8U black double-entry case.

### **FILE-SERVERS ARRIVE IN IRAQ**

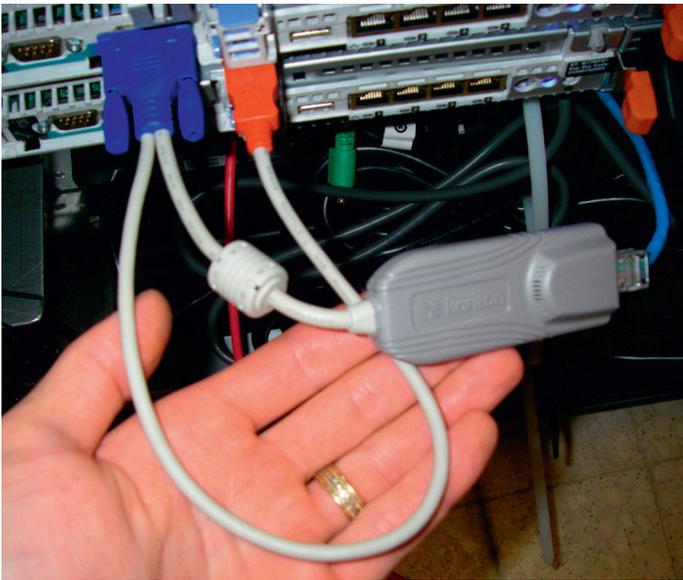
I worked an agreement with the Information Assurance department at Al Asad Air Base to place the file-servers on the strategic network. My shop kept the servers updated

weekly with security patches and had zero issues with IA throughout the deployment. After a one-week validation process, my team went to work on shifting all battalion operational data from the main base-wide strategic file servers to our battalion file servers. I prepared for the fact that we might jump locations after several months and wanted to make sure we were prepared to take our data with us.

That moment came when the Brigade ordered our battalion to move 152 miles to Camp Taji in October 2011. At the same time the entire theater prepared to move all tactical units off strategic connectivity and onto JNTC tactical satellite assets.

This worked out perfectly because we did not need to coordinate with the Taji base network to re-establish the file-servers on their network. After setting up our CPN on the tactical network at Taji, we connected the file-servers and had all data readily available to the battalion. We set up multiple printers through the server to expedite the establishment of the network. We setup a LAN network near as robust as the strategic network from which we left at Al Asad Air Base, Iraq.





*The Raritan KVM Dangle used to connect the VGA and USB ports of the file server to the KVM control unit via RJ-45 connectors and CAT-5 cable.*

Accessing brigade shared files on their file-server connected off the JNN was so slow that it would take hours to upload one PowerPoint file. There were only a few instances in which we needed to post files on the brigade file-server so it was manageable. As for our own battalion operations, if we did not have a local file server and had to rely on the usage of the brigade file server by MTOE, our collaboration efforts would have been slowed to a crawl. Every day

between October 2011 and December 2011 the command and staff utilized the file server to update Combat Update Brief slides, disseminate OPORDs, and store AARs and patrol briefs.

Battalions require a file server on their local LAN both in Garrison and on deployments for rapid collaboration and continuity in data between garrison and deployment environments. With the usage of AGM Server operating systems, the Army is not spending additional money for the operating system. Less than one week of training for two 25B MOS is all that is needed for an S6 shop to adequately employ a file and print server capabilities. Maneuver battalions are constantly leveraging technology to better command and control the fight. They are keenly aware that battalions that collaborate faster and more effectively will be more successful in engaging with and destroying the enemy or conducting peacetime operations with the highest potential.

## ACRONYM QUICK SCAN

- AAAB – Al Asad Air Base, Iraq
- AAR – After-Action Review
- AGM – Army Gold Master
- AKO – Army Knowledge Online
- CPN – Command Post Node
- DRASH – Deployable Rapid Assembly Shelter
- EIB – Expert Infantryman Badge
- FORSCOM – Forces Command
- GRF – Global Reaction Force
- JNN – Joint Network Node
- JNTC – Joint Network Transport Capability
- JRTC – Joint Readiness Training Center
- KVM – Keyboard, Video, Mouse
- LAN – Local Area Network
- MDMP – Military Decision Making Process
- MOS – Military Occupation Specialty
- MTOE – Modification Table of Organization and Equipment
- NEC – Network Enterprise Center
- NCOER – Non-Commissioned Officer Evaluation Report
- OER – Officer Evaluation Report
- OPORD – Operational Order
- RAID – Redundant Array of Independent Disks
- TOC – Tactical Operation Center
- UPS – Uninterruptible power supply



*The battalion file servers in operation during deployment to Iraq from May 12 to Dec 12.*