

# Virtualization beneficial as a platform

By Charles I. Calabrese

The technology of server infrastructure and the demand of information technology to support the warfighter have been growing at an astronomical rate. The need to provide systems and services for intelligence and mission command exists on the battlefield, and as well as posts, camps and stations.

In order to provide these services 5th Signal Command, with the direct support of the 509th Signal Battalion provides an Installation Processing Node - Italy which comprises of Army Non-secure Internet Protocol Routing Network and Secure Internet Protocol Routing Network services. Due to the increased demand of systems and services the IPN-I has had to re-engineer the way that services are provided to the customer.

Taking a first step into the technology of virtualization, the 509th Signal Battalion, Systems Support Branch has worked hand in hand with the Knowledge Management Office of U.S. Army Africa Command to provide a high availability with a data recovery site in order to support mission and automation needs. USARAF has become reliant on the use of Microsoft SharePoint Portal and the SSB took on the mission to design, test, implement, and maintain the services.

By designing the virtual infrastructure the SSB was able to consolidate physical servers; which not only reduced the footprint to the facility, but reduced the power and HVAC requirements needed to provide the systems to the community.

Finalizing the testing phase, the SSB has taken this to the next level with Caserma Del Din, formerly Dal Molin, coming on board FY13. Additionally the move of the IPN-I facility to Caserma Del Din, there were additional requirements that needed to be looked at to ensure that the transition to the new facility would not have an impact on the services being provided by the 509th Signal Battalion.

The SSB designed virtual clustered services for Structured Query Language, Dynamic Host Configuration Protocol, print services, and file services that will allow complete service failover to the Continuity of Operations Plan site during the transition. The services that cannot be clustered, like Microsoft SharePortal and web application servers will use live migration features built into Microsoft's Hyper-V server clustering technology. This allows services to be moved between clustered Hyper-V servers without an interruption

of service to the customer. The design of the virtual infrastructure ensured that there was no single point of failure; this included working with the 509th Signal Battalion Network Services branch to assist in the design of the meshed networking architecture to support failover and redundant network paths.

Virtualization technology has also required the SSB to look at the way it backs up systems, with virtual servers, restoring operating systems takes minutes as opposed to hours. What this means is rapid recovery on services to the customer with the least amount of operational impact.

Converting services to the new virtualization infrastructure will allow the 509th Signal Battalion to provide an equivalent enterprise level of service to the customers within the Vicenza and Livorno Military Communities for mission funded services, along with other critical non-enterprise servers that are normally provided by the local signal battalion. Being able to provide this level of service was impossible before the advent of virtual technology and the hardware to support such a capability.

Virtualization as a platform is the future of providing services to the customer, with the processing power of today's servers, there is no reason not to implement the technology. The cost savings alone for power, HVAC, and facility space supports the reduction of government spending and sustainment requirements. The benefits of providing a faster recoverable and failover platform is being successfully used in the commercial market and the military has adapted the same processes as a way to provide the increasing service requirements without the additional cost to implement and sustain them.

By staying on the cutting edge of information technology, the 509th Signal Battalion has provided the command with more robust and responsive network services, while simultaneously conserving Army resources. This is a good news story for all.

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## ACRONYM QuickScan

**FY** - Fiscal Year

**HVAC** - Heating, Ventilation and Air Conditioning

**IPN-I** - Installation Processing Node-Italy

**KMO** - Knowledge Management Office

**NIPR** - Non-secure Internet Protocol Routing Network

**SIPR** - Secure Internet Protocol Routing Network

**SSB** - Systems Support Branch

**USARAF** - U.S. Army Africa