

MOUNTWEST COMMUNITY AND TECHNICAL COLLEGE CIO TOUTS VIRTUAL SERVERS AT WVNET

WVNET is pleased this month to present a feature article by Terri Tomblin-Byrd, MS, Chief Information Officer, Mountwest Community and Technical College in Huntington, West Virginia, Tomblin@mctc.edu



Terri Tomblin-Byrd

It's a busy time for many across the State of West Virginia and Mountwest Community & Technical College is no exception. We are working hard to prepare our new campus for the arrival of faculty, staff, and students and the start of the fall semester. To add to our excitement, we recently learned that we will be the recipients of a Cisco 3945 router as part of the WV BTOP project. This equipment will provide opportunities for us to connect with new learners benefitting from the broadband build in WV and enable a speedier adoption of unified communication technologies in the teaching and learning process.

Meanwhile, opportunities abound following WVNET's creation of a diverse and redundant 10Gig ring that could also significantly lower broadband costs for us as WVNET customers. Access to affordable on-ramps to the internet and additional WVNET service initiatives, such as the deployment of a new IBM 770 Power Server, placed WVNET firmly on our short list as we began looking for alternative solutions to an on-premise Data Center.

When we started looking for alternative data center solutions, we were not anti-cloud. We just needed to better understand the challenges of balancing speed and agility with specific security, audit, and data controls associated with data centers like ours.

Like many other educational institutions, we have learned that there is no surefire approach to cloud computing. We adopted public cloud-based solutions for our Email, Web Server, and Helpdesk applications in the early stages of our journey toward self-sufficiency. Followed shortly thereafter by hosted and managed solutions for Banner (WVNET), and Blackboard LMS (FSU). This past spring, we opted to deploy our Student Retention application as a hosted solution that integrates with an on-premise Student Recruiting solution. [Continued on Page 4](#)

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The purchase order for the optical networking equipment from the \$3.5 million NTIA BTOP grant to WVNET was issued by West Virginia State Purchasing on June 21. The equipment is expected to be delivered to WVNET in the next few weeks and installed in time for the Fall Semester.

WVVLN/IT FORUM MEETS



The West Virginia Virtual Learning Network/IT Forum, co-chaired by Roxann Humbert from the HEPC and David Ayersman from New River Community and Technical College, held their Spring meeting May 21 and 22 at the Days Inn in Flatwoods, West Virginia. Twenty seven members representing 16 institutions, the higher education policy commission, and WVNET attended the meeting. In addition to vendor presentations, the group had several professional development sessions including a session on copyright, fair use and the Teach Act presented by Lydia Mong (WVU), an ADA session presented by Cindy Hart (WVU), a Mobile Technologies session presented by Mike McComas (Mountwest CTC), and a Mobile Device Lecture Capture session presented by Monica Brooks and Crystal Stewart both from Marshall University.

Breakout sessions were held in which participants identified the following three topics/subcommittees as the focus for next year:

Creating Knowledge Base

- a. Chair: *Annaliza Marks*
- b. Member 1: *Chris McComas*
- c. Member 2: *Laura Little*
- d. Member 3: *David Ayersman*

Content Sharing/Instructional Design

- a. Chair: *Paula Kaplan*
- b. Member 1: *Cindy Hart*
- c. Member 2: *Ralph Payne*

Common Definitions and Coding

- a. Chair: *Connie Fox*
- b. Member 1: *Audrey Biggs*
- c. Member 2: *Carol Howerton*
- d. Member 3: *Crystal Stewart*

In addition, the group identified four software products they wish to explore and possibly purchase during the next year. These include proctoring/student authentication software, Bb collaborate, Softchalk, and lecture capture software.

WVNET IPV6 ADDRESS ALLOCATION

WVNET received its first [IPv6](#) (Internet Protocol version 6) address allocation on June 25, 2012, reports *Telecommunications Network Specialist Frank Seesink*. This is an important milestone in WVNET's history as we begin to participate in the next iteration of the Internet which includes full participation in the [Internet 2](#) community that WVNET joined last fall as a research and education networks member.



Frank Seesink

Currently, WVNET offers any necessary IP addressing and Internet connectivity/services that its customers need. This IPv6 address allocation will allow WVNET to offer similar Internet 2 addressing and connectivity/services to its customers, including such things as providing K-12 schools access to educational resources (e.g., for distance learning, online video-based courses, collaborative efforts, videoconferencing/telepresence, "virtual school trips", etc.) and providing colleges and universities access to the same as well as research materials (e.g., other universities, research institutions, etc.).

Every device on the Internet, from computers to tablets to smartphones, must be assigned a unique address in order to communicate. Similar to how the postal system works, two devices on the Internet cannot have the same address. How would you know which one to deliver data to? Or worse, how would they communicate with each other? Similarly, imagine two people with the same telephone number.

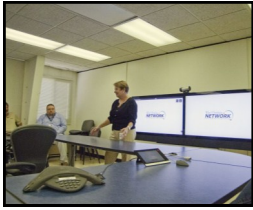
Currently the Internet uses a protocol called [IPv4](#) (Internet Protocol v4), often just called "IP" for short, which uses 32-bit addresses, or numbers consisting of 32 1's and 0's and consists of about 4 billion unique IP addresses. There can be, at most, 4 billion unique devices on the Internet today. Considering around six billion people inhabit the earth and in some parts of the world a single person may have several desktop computers, laptops, tablets, smartphones, and other Internet-capable devices, it is easy to see the problem: too many devices, not enough addresses.

Originally developed around 1996, IPv6 was designed to solve this shortage. Consisting of 128-bit addresses, IPv6 provides 2^{128} , or approximately 3.4×10^{38} (a number with 37 zeros) unique addresses. One analogy given was that IPv6 would allow for uniquely identifying every single grain of sand on the Earth. Compare that to 4 billion. With so many addresses, we should have plenty for the foreseeable future. Unfortunately, the Internet had already begun expanding at a rapid rate by 1996, and switching an existing addressing system was non-trivial.

Pressure has been steadily growing as the current IPv4 addressing system has reached exhaustion. Until now, only certain large corporations and research networks (such as Internet 2) have deployed IPv6. In the past few years, however, Google, Facebook, Yahoo! and others have stepped up their efforts. Last year they participated in [World IPv6 Day](#), when for 24 hours they turned on their IPv6 interfaces to the Internet for 24 hours as a test. It went without incident. This year they had [World IPv6 Launch Day](#), when once again they turned up their IPv6 interfaces, only this time they are staying up permanently. This signals the transition has truly begun. WVNET, with its IPv6 allocation, will be joining this transition over time.



Registration continues for the **FREE West Virginia Statewide Technology Conference (WVSTC) 2012** on August 8 and 9. Please visit our conference site via the WVNET homepage to register www.wvnet.edu Vendors are currently training to build and man their booths for this virtual environment. The keynote speaker on opening day, August 8, will be *Steve Hargadon*, an internationally known education technology expert. This *live* webcast will be at 12:00 PM. *Lisa Comer* from the West Virginia State Auditor's Office will be the second *live* webcast speaker. She will speak about the Enterprise Resource Planning (ERP) systems on August 9 at 12:00 PM.

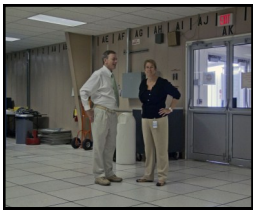


Chief Technology Officer Gale Given

CTO GALE GIVEN VISITS WVNET

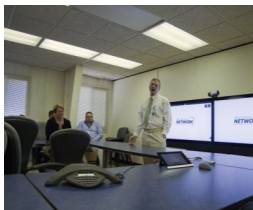
West Virginia's recently appointed Chief Technology Officer Gale Given visited WVNET on July 6. After a tour of the data center, Gale met briefly with staff members for questions and answers as to how the two entities (WVNET and Office of Technology) might collaborate. During her years as a student attending Marshall University, Gale reported she used WVNET's mainframe systems. In the picture above, CTO Gale Given answers a question from a WVNET staff member.

In the picture below, WVNET Director Dan O'Hanlon and CTO Gale Given visit the data center.



Dan O'Hanlon and Gale Given

The WV Office of Technology and WVNET are two major state agencies providing high-speed communications and computing services. Our goals are one and the same: To serve the people of West Virginia in the best possible way. CTO Given would like to leverage the strengths of both agencies towards a common cause, and to work cooperatively when possible.



Gale Given and Dan O'Hanlon

During the wrap up, CTO Given noted opportunities to coordinate training and certifications between agencies as some examples of cooperation, in addition to current WVNET work with the WVOT help desk to provide after-hours support.

NJEDGE, WVNET JOIN THE QUILT



Seattle, July 13, 2012 – (reprinted by permission) The Quilt, the national coalition of advanced regional networks for research and education, welcomes new members NJEDge and West Virginia Network (WVNET). NJEDge and WVNET join 29 other regional and state networks from around the country participating in The Quilt.

"By joining The Quilt, NJEDge staff will have the opportunity to work more closely together and to share best practices with peers from other research and education networks, not only on a broad range of IT issues but on other areas of interest to research and education, such as community building and faculty development," stated George Laskaris, President and CEO, NJEDge.

"WVNET views The Quilt as the best national forum for the exchange of ideas between regional education networks," according to Dan O'Hanlon, director, WVNET. "As a Quilt member, WVNET will be able to more effectively join with other education networks in shaping the evolution of networks to enhance the service that all of us are able to provide to our constituents."

"NJEDge and WVNET are highly regarded, not only for their research and education networking leadership in their respective geographies, but also for their contributions to economic development and public service," said Jen Leasure, president and CEO, The Quilt. "We are thrilled to have them join The Quilt and look forward to a long and productive collaboration towards our shared goals."

West Virginia Network for Educational Telecomputing (WVNET) is a dynamic service organization providing telecommunications and computing services within West Virginia. Currently focused on state colleges and universities and administered by these entities, WVNET is transitioning to expand its impact by offering services to state government, K-12, public libraries and county government. For more information on WVNET, visit www.wvnet.edu

NJEDge.Net is a non-profit technology consortium of academic and research institutions in New Jersey. Through its deployment of advanced Internet technologies and digital communication, NJEDge.Net supports its members in their institutional teaching and learning, scholarship; research and development; outreach programs, public service, and economic development. Additional details on NJEDge.Net available at www.njedgernet.net

About the Quilt

The Quilt is the national coalition of advanced regional networks for research and education, representing 29 networks across the country. Participants in The Quilt provide advanced network services and applications to over 200 universities and thousands of other educational institutions. Please visit www.thequilt.net to learn more about The Quilt.



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MOUNTWEST COMMUNITY AND TECHNICAL COLLEGE CONTINUED...

Most recently, we have selected UCCaaS, Verizon's "as-a-Service" answer to providing our college with cloud-based VoIP and Unified Communication and Collaboration technologies. In short, we are moving our telephone system to the internet.

These choices resulted in a fairly lean, yet very critical, array of servers and applications in our data center that manage our domain, identity provisioning, wireless access, print services, etc. These were virtualized to improve agility and provide on demand change/adjustment of resources. We know that while many are getting accustomed to the cloud, others in education don't openly embrace the cloud; especially when it comes to components that are critical to the inner workings of the college network. However, for colleges with lean IT support staff like ours, the cloud may actually be more secure because we don't have the luxury of developing expertise in-house to design, install, configure, and maintain these virtual servers.

We focused on bringing together the best of both worlds; the agility of the cloud as demonstrated by leading public clouds and the control needed by colleges to meet regulatory, security, audit, and data privacy requirements. We believe our decision to place our servers in WVNET's Data Center and access them over a dependable high-speed network accomplishes the balance we were looking for.

WVNET's commitment to invest in development and innovations in cloud computing virtualization and to participate in the development of new networks through partnerships and collaboration was a key factor in our decision making process. Their immediate payoff is a more efficient operating environment; from easier management and economies of scale in a standardized server cloud data center to reduced utility bills and smaller footprints. These savings can then be passed on to us, their customer.

We are very pleased that WVNET is going on this journey with us. This partnership is going to result in a reduction of our current operating expenses and enable Mountwest to re-invest these funds in higher-value initiatives such as desktop virtualization and enterprise document management; both of which require infrastructure we were hard pressed to afford and maintain given our current budget constraints.



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FROM THE DIRECTOR...

- ⇒ WVNET Director Dan O'Hanlon is pleased to report that throughout the recent storms that passed through West Virginia, WVNET never faltered. **We ran the State's Internet for over seven hours on generator power. WVNET staff members came in to make sure our Help Desk stayed open for our customers 24/7/365.** Our hearts and prayers go out to all West Virginians who are still cleaning up the damage. Dan himself waited for the power to come back on at home for over six days.
- ⇒ Gary Holeman and Michael Martin, the new CIO and network support guys from Southern WV Community and Technical College visited WVNET on July 16 and 17 to get to know us and learn about what we do. WVNET welcomes our new friends!!
- ⇒ WVNET welcomes Chuck Elliott, the new CTO at Concord. A Georgia native, Chuck comes to Concord after a stint at Emory University as an IT faculty member. He previously held the position of customer services manager at Marshall for several years. Chuck entered his career in IT after retiring from the Navy. Reportedly, Concord is interested in moving their Banner hosting to WVNET and installing the Raiser's Edge alumni/fund raising package, with interest in moving their Blackboard hosting to WVNET.
- ⇒ **Happy Birthday** to WVNET staff members with birthdays in July: **Libby Cress, Rich Lynch, and Andrew Parker!!**