Networking 101

Southern Firewall Migration

In July of 2018, WVNET began the process of moving southern entities from the Cisco firewall service modules to Cisco ASA service modules installed in the Charleston core router. As of now, approximately 30% of the southern entities serviced by the firewall service modules have been migrated to the ASA service modules. This process will continue until all southern entities have been ported to the new modules. Southern entities can roughly be defined as those south of Flatwoods, Braxton County, or following the boundary of the old LATAs.

The general function of these firewall service modules is to provide protection to "trusted" devices on the inside of the firewall from "untrusted" devices on the outside of the firewall, especially devices on the Internet. They also provide the functionality of allowing outside devices access to public facing servers, such as websites, VPN servers, etc. These modules are installed in pairs, providing an active/standby architecture. This means, in the event of a failure of the active module, the standby assumes the active role and data connectivity continues. Depending on the type of connection the user has flowing through the firewall, this failover will largely go unnoticed. Users browsing to sites using HTTP or HTTPS will not notice the switchover where users connecting using protocols such as SSH or TELNET will have to re-establish the session. Failovers are rare, so this is effectively a non-issue.

Another important function of these firewalls is translating private IP addresses that cannot be routed on the Internet to pubic IP addresses that can be routed on the Internet. This helps conserve public IP addresses. Without this function, we would be out of public addresses and unable to provide growth to our customers.

The old firewall service modules were running at a high utilization and began to struggle to keep up with the increased data flow. If requests from end devices take too long to complete, the device might issue a timeout and fail to complete the request. The new ASA service modules have much more processing power, can accept many more connections per second, and have increased onboard memory. All this combines to allow the ASA service modules the ability to service requests more quickly and in greater quantity.

All agencies are given advance notice before being migrated. Of the entities that have already been migrated, we have seen minimal issues, and we are working hard to continue that trend. This upgrade will provide our customers with a better user experience and increase speed in using the Internet.

Please contact the WVNET helpdesk at 304-293-5192 if you have questions on the migration. *(Article by WVNET staff member Eric Burgy)*

From the Interim Director...

Allen Daugherty

As the new Interim Director of WVNET, I have been reflecting on what it means to serve as an interim. For many, an interim period is considered a "short-term" or a "stop gap" measure. Personally, it means that I bring to this provisional period over forty years of expertise in telecommunications in service to the State of West Virginia—the last eight as Deputy Director, and it also means that I have forty years of expertise working with my colleagues at WVNET, which is certainly not "short-term" or provisional, but a very stable and long-standing commitment. So, for all of us at WVNET, interim, simply put, means that WVNET employees will do what they have always done, step up to fill the gaps and take care of business. We are still the longest running REN in the United States, and I will do everything within my power, interim or otherwise, to honor that tradition and the work begun during Judge Dan O'Hanlon's tenure at WVNET. *~~Sincerely, Allen Daugherty, Interim Director*

FOND FAREWELLS AND NEW FACES...

Last month, WVNET extended fond farewells to Director Dan O'Hanlon and his assistant, Lola Fincham, who officially retired on June 30. Dan and Lola were presented with celebratory retirement gifts and a lunchtime picnic. WVHEPC Executive Vice Chancellor Matt Turner participated in the festivities and announced that long-time Deputy Director Allen Daugherty would serve as Interim Director. Dr. Mary Stewart will serve as Interim Deputy Director.

Originally from Morgantown, **Joshua Shriver** is a 22-year veteran of the IT industry. His past experience ranges broadly from development to multi-state networks, security and penetration testing, artificial intelligence and telephony. If Josh had to choose one interesting fact about himself, it would be his passion for wildlife and nature photography.

In commenting about his new position as a System Administrator, Josh says, *"I'm looking forward to working with a devoted group of professionals and the opportunity for professional growth."*

Welcome, Josh!

J.R. Farley is a lifelong resident of West Virginia, having grown up in Mingo County. After graduating from WVU in December of 2000, he spent several years as an IT contractor on various federal contracts before landing at Fairmont State University in 2006. He spent 12 years there as a Banner database administrator, experience that he hopes to use to great effect at WVNET. J.R. is an avid gamer and comic book collector and really enjoys watching terrible movies.

In commenting about his new position, J.R. says, *"I am looking forward to working with people at WVNET mostly and getting to help out schools we serve all across the state."* **Welcome, J.R.!**
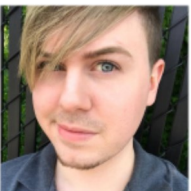
Prior to joining the WVNET family, **Alex Ready** was a hairdresser for 10 years. Though his time is more limited, he still makes time for that outside of his job at WVNET. He is from Uniontown, PA, and still lives there.

Alex has always had an interest in computers and networking, but as more of a hobby. It was only a few years ago that he decided to go back to school and pursue his degree, in order to turn it into a career. Alex has some experience in a very broad range of information technology-related areas, such as hardware, network infrastructure and security. He is always looking to learn and grow further in both areas. Alex worked as an intern in the IT field before being hired at WVNET, one at a global telecommunications and internet provider and the other at a hospital.

He builds and repairs PC's in his free time. Also in his free time, Alex enjoys gaming and reading. He enjoys fantasy-based things like Lord of the Rings, Game of Thrones, and Harry Potter. He is most comfortable when he is behind a computer screen. **Welcome Alex!**

(Article by WVNET staff member Fran Barnes)

In order to execute WVNET's mission in a manner consistent with our vision and values, we have established a set of results-oriented goals as a structure for organizing our "outcome-oriented" activities, specifically, the management of technology services, by balancing the innovation necessary with emerging capabilities while maintaining the reliability essential for mission-critical functions, as well as support services that deliver a quality customer experience.

DegreeWorks Team

WVNET spotlights DegreeWorks with Inaugural Report Writing Workshop...
Earlier this month, WVNET partnered with Ellucian, a leader in higher education student success software and the vendor for DegreeWorks*, to offer a report-writing workshop at our Morgantown office.

Over five higher education institutions were represented during this three-day event. Participants gained new insights on using DegreeWorks data to help achieve their institutional student success goals. WVNET DegreeWorks Team Lead Barbara Long states, *"unlocking the wealth of data residing in the DegreeWorks tracking software will help campuses improve retention and student outcomes." (Article by WVNET staff member Barbara Long)*

*Ellucian DegreeWorks^{TM} is a comprehensive academic advising, transfer articulation, and degree audit solution that aligns students, advisors, and institutions in a common goal: helping students graduate on time.

Distance Learning Team

#BbWorld18 — WVNET's Distance Learning team members, Cory Morrison and Harmony Garletts, attended the BbWorld18 Conference in Orlando, Florida, this month.

The conference is held annually and includes over 42 countries, 1000+ institutions, 2000+ attendees, and 150+ sessions during the week. Since WVNET is a Blackboard provider and has been for many years, we were proud to represent our schools while also gaining valuable knowledge that helps our state's educational department move forward in the field of Distance Learning. This conference always has some of the most inspiring keynote speakers, and this year was no exception! The live sessions provided us with an opportunity to network with other educators/schools all around the world. We discussed best practices, had access to product experts, and even got to see some of the new technology coming our way! We look forward to sharing our new insights as we interact with our schools in WV this Fall, and we hope to see you at Bbworld19 in Austin, Texas! *(Article by WVNET staff member Cory Morrison)*

Systems Team

Banner to Blackboard Integration for Southern West Virginia Community and Technical College...
Over the past few months, WVNET staff worked with IT staff from Southern West Virginia Community and Technical College to integrate their enterprise student management and learning applications, Ellucian Banner and Blackboard Learn.

The goal is to allow data entered or modified in Banner to automatically flow to Blackboard Learn. This includes student, faculty, and course information. Connecting these applications allows for a single point of data entry, provides more timely transfer of data from Banner to Blackboard compared to the previous automated batch loading process and manual data entry, and will lessen the workload for Banner and Blackboard admins at Southern when dealing with online course preparation.

As the integration moves through the final testing phase by Southern IT staff, WVNET continues to work with them, providing support as needed and ensuring that data continues to flow between the applications.. *(Article by WVNET staff member Bob Burton)*

Fran Barnes
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YEARS OF SERVICE TO WVNET

WVNET has an exceptional technology-savvy team with a strong customer orientation. We're happy to acknowledge the fact that three members of our staff, in particular, have reached significant milestones in their careers with us this month — **Roman Chuby** (Business Office) has completed 37 years of service, **Yvonne Howdershelt** (Business Office), 20 years, and **Mark Hartzell** (Systems), 4 years. Thank you, Roman, Yvonne and Mark for the contributions you bring to our organization to make it what it is today. *(Article by WVNET staff member Fran Barnes)*

WALK 100 MILES IN 100 DAYS
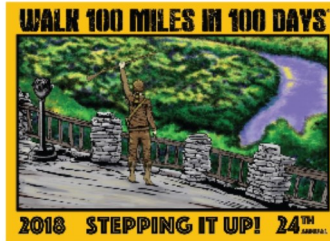
The *Walk 100 Miles in 100 Days* annual walk began on April 16 and ended on July 24. WVNET had ten participants (eight employees, one spouse, one former employee). Total miles walked was 2988! *More info:* www.wvumedicine.org/thewellnesscenter *(Article by WVNET staff member Fran Barnes)*

REMEMBERING LEONARD TAYLOR

We regret the unexpected passing of our former coworker and friend Leonard Taylor in June 2018. Leonard retired from WVNET as a Computer Operator many years ago, after 30 years of service. After his retirement, he did clock and watch repair and a myriad of other hobbies. During Leonard's time at WVNET, we were running most of our services on large mainframe computers that required a lot of manual labor. Operators followed schedules of manually executing sequences of commands on our systems, mounting and unmounting tapes for system backups, setting up printers with print trains, paper and ink cartridges, monitoring system activity and helping customers. Leonard assisted with all of these jobs as part of WVNET's early family. Our condolences go to Leonard's family and friends. He was part of our family, too! *(Article by WVNET staff member Fran Barnes)*

Did You Know…During the month of June 2018, the Network Operations Center logged a phenomenal 932 tickets!