Networking 101

It's Upgrade Time!
WVNET Hosted Blackboard Instances
Transitioning from Crocodoc to New Box View

by Cory Morrison

WVNET is excited to announce that we are in the process of implementing Blackboard Learn 9.1 Q4 2016 CU4 (3100.0.4) to all supported institutions over the winter break. This upgrade will address outstanding issues within the platform that our users have reported over the last semester as well as implement some new features to the Inline Grading process that enables faculty to give feedback on assignments with detailed "inline" markup as well as audio and video feedback. As this is a large platform update, we normally wouldn't perform the upgrade in the middle of the academic year, but the current Inline Grading service, Crocodoc, is scheduled to be discontinued as of January 15, 2018.

In an effort to troubleshoot any major issues caused by the upgrade, the WVNET Blackboard team will be testing the features and tool functionality after the update on our in-house testing server, BBAPPTEST, by enlisting the assistance of GUI Administrators and power users from our hosted institutions. This will allow us time to gather useful information about the upgrade, receive feedback, and implement fixes before rolling it out to all of our hosted clients campus instances. If you would like to be part of the testing group, please contact Cory Morrison (cory@mail.wvnet.edu) for access.

Here's a quick snapshot of the differences between the old Crocodoc view and the updated Big Box view.

What can users expect?

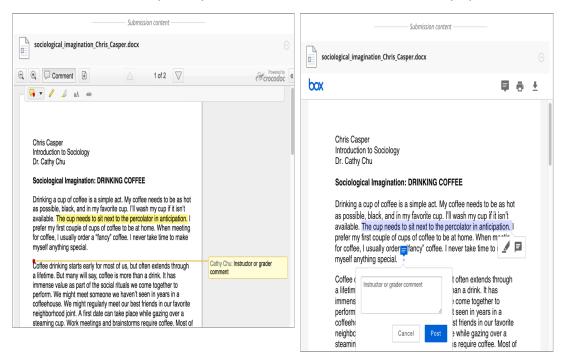| Functions and Details	Crocodoc	New Box View
File types for annotations	PDF, PPT, PPTX, XLS, XLSX, DOC, and DOCX	Over 100 different file types File Types and Fonts Supported in Box Content Preview
Videos and images displayed	No	Yes
Course areas	Original assignments, Ultra assignments, and in Ultra tests' additional submission area	Original assignments, Ultra assignments, and in Ultra tests' additional submission area
Annotation types	Text- and point-based comments, highlighting, and drawing	Point-based comments and highlighting
Download	Users download a copy of a student file with the option to download in the original format or in a PDF version that includes the annotations	Users can download a copy of a student file, but annotations won't appear
Print function	No	Yes
Students	Can't add annotations to documents	Can't add annotations to documents

Old Format (Crocodoc) **New Format (Box)**

Images from https://help.blackboard.com/Learn/Instructor/Assignments/Grade_Assignments/Crocodoc_to_New_Box_View

FROM THE DIRECTOR

Dan O'Hanlon, Director

Because our K12 schools are required to have 180 instructional days every year, they often have to run over their preset last school day by a week or more. This is disruptive to their staff, their students and their budget.

WVNET is working on a possible solution to this dilemma. It's called URCast. URCast is a content server inside of a school. When each student arrives, the server recognizes them and their device, and all student homework is submitted and new work is automatically synced to their device. The caching server also knows which classes the student is taking. The URCast server then downloads all the articles, videos, quizzes, etc. that their teachers have uploaded for them to have at home to their device. Because all of our schools have wireless internet inside the schools, the students get their materials even if they don't have internet at home.

Our hope is that, after a 'snow day' this year, that the schools could test their students to see if they were instructed enough by these downloads to pass a test on the subject. If so, the State School Board just might decide that they actually had an instructional day while they were home and that there doesn't need to be an extra day added in at the end of the regular school year.

If this works out, it could save our school system millions of dollars and get kids out for summer vacation on time. We hope that URCast is yet another solution from WVNET for our schools!

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.

Business Department

The entire staff of the business office worked closely with WVNET's CFO, Donna Meadowcroft, to make sure WVNET had the documentation necessary to complete the FY17 financial audit on time. Transparency in business interactions is an important component of our Strategic Plan.

Applications

Applications is in the process of deploying Banner 9 Ellucian Solutions Manager (ESM) and standalone Virtual Machines for Banner 9 for all our hosted institutions. The biggest challenge regarding the upgrade to Banner 9 is matching that upgrade with the updates in Banner 8, which is essential to the success of the deployment. As a result, Applications work load has increased significantly. DBA's who support this service are working around the clock to update test and production instances and troubleshoot issues.

With each upgrade, security issues are handled and given the complex structure of hosting all of Banner 8 and Banner job submission through shared resources. There are many steps in this process to ensure that all systems are operational. The good news is we are getting into a pattern and each upgrade is more efficient. As a result, the new Banner 9 product seems to be performing better after resolving some early issues regarding very slow performance.

Applications works diligently to provide WVNET's customers with all of the current deployments from Ellucian, and they sincerely appreciate the testing and debugging support we receive. We hope to continue to improve with the resources we have and we thank all of our clients for their support.

Systems

To provide enterprise class storage, WVNET employs a Storage Area Network (SAN). A SAN is a specialized, high-speed network that provides block-level network access to storage. WVNET utilizes a SAN from NetApp that compliments the hardware with a collection of specialized administrative tools that provide high speed access, redundancy, point in time recovery, and simplified central management. This allows the WVNET to quickly respond to a customer's storage resource requests. WVNET's SAN is also designed in a clustered configuration which provides high availability allowing upgrades to individual modules of the SAN without requiring a service outage.

WVNET further enhances this protection by replicating this data to an off-site location. This allows us to ensure data protection in scenarios ranging from the loss of a single disk to loss of an entire data center.

WVNET Systems group continues to enhance our storage offerings and is always excited to continue researching the upcoming technologies and the benefits they will provide our customers.

Network Operations Center (NOC)

The NOC is now a part of the WVNET Systems group. In October 2017, there were 838 new problem tickets created in WVNET's Oz Problem Tracking System, 1076 updates to new and existing tickets many of which are Tier 2 and 3 level issues, and 881 problem resolutions resulting in closed tickets. The NOC also monitors systems, applications, and internet service for our customer base 24/7.

Media Services

Media Services developed an application called FormTrak which assists K-12 schools in managing forms from students and their parents. We published the first production version in November 2017. FormTrak will be used in Berkeley County Schools for managing forms for students who have special dietary needs. To assure the health and safety of all students, the schools send forms home to parents on which they may designate dietary needs and restrictions for their student. It is essential for the schools to have these forms and follow-up communications completed, and with 1000's of students this is often a challenge. The schools use a process of sending home forms and communicating with families to assure that they receive the required information. WVNET's FormTrak application provides a secure web-accessible tool for recording the progress and status in obtaining this information for each student. This application, like others in the WVNET catalog, moves information from paper or a single computer to a place where it is secure and available on the web to all authorized users. While the current FormTrak implementation specifically manages dietary forms, WVNET can customize it to work with any type of forms.

Strategic Milestone Updates Continued...

Telecommunications (TelComm)

Video conferencing involves planning and communicating with various contacts in West Virginia and out of state. The process begins with a TelComm Specialist making the initial contact, troubleshooting connection with the end user, verifying connectivity with the end user, which often means installing software on the remote contacts computer using Cisco Jabber Video Client. Once connectivity is verified, then the video conference is scheduled. The video conference must work through the end users firewall and network configuration and that process requires further contact with the telecommunications department at the end point. This month, TelComm facilitated video conferences between the United States District Courts, the Regional WV Jails and Prisons, WV County Circuit & Magistrate Courts, and WV Hospitals with users outside the state network in Pennsylvania, Ohio, Michigan, and Hawaii.

FOND FAREWELLS AND NEW FACES...

Over the last few months, WVNET extended fond farewells to several employees who moved on to new adventures, Jonathan Lynch, Systems Administrator Lead, Andy Parker, Telecommunications Networking Specialist III, and Booker Walton, Data Center Manager. We have been very fortunate in that we were able to fill those vacant positions with both new hires and internal moves to ensure the seamless transfer of knowledge and uninterrupted service.

Kim Jenkins was promoted to Supervisor Network Operators (NOC) and Chris Freeman was promoted to Data Center Team Lead in addition to his TelCom duties. Mike McDonald, former NOC operator, is now a System Administrator. Russell McCormack moved from a Data Warehouse Specialist in Applications to Software Developer in Media Services. Dr. Mary Stewart was promoted to Assistant Deputy Director and will continue to act as Director of Distance Learning and Educational Services, for the time being. Marcie Layman moved to Media Services as a Web Assistant.

Bradley Smoak is a self-taught web developer and designer with over eight years of experience working with customers to bring their visions to life on the web. He has created websites, logos, graphics, and print materials for individuals, small businesses, and regional organizations across the country. He enjoys creating striking custom designs across multiple frameworks and platforms, specializing in WordPress and Bootstrap. Skilled in HTML, CSS/SCSS, and JavaScript/jQuery, he has also spent years honing his abilities editing a wide variety of media in the Adobe Creative Suite (Photoshop, Illustrator, Audition, Premiere Pro). Bradley spent his previous life as a professional singer, traveling the world performing opera and music theater, ultimately ending up at the prestigious Lyric Opera of Chicago before stepping off the stage to focus on his family. Originally from NC, he lives in Morgantown with his wife, Jennifer and their two daughters, Lily and Penelope.

In commenting about his new position as Web Developer in Media Services, Bradley says, *"Walking into WVNET's offices puts a smile on my face every morning. It is such a rare thing to have the opportunity to simultaneously contribute through the skills and talents you have developed, while at the same time learning from those around you and sharing in the excitement of newfound knowledge. Technology continues to evolve every day—we are at the forefront of that evolution, and to be a part of that is exhilarating."* Welcome, Bradley!

A West Virginia son and a native of Charleston, **Eric Burgy** is a seasoned veteran in the telecommunications world with nearly 25 years of experience working on everything from LANs and WANs to voice and video and more. He has worked for state agencies and the private sector over the course of his career, including five years with WVDHHR, 13 years with Verizon, stints with Strictly Business Computer Systems and Alpha Technologies, and most recently at the WV Department of Education. WVNET has interacted with Eric in one form or another for many years, so his addition to the family was a natural fit. In his spare time, Eric is a bit of an outdoorsman and likes to play golf among other things. He lives in Charleston where he remains close to his family.

In commenting about his new position as Telecommunications Networking Specialist III, Eric Burgy says, *"I am very excited to be a part of the WVNET team. Having worked with WVNET for 20+ years as a customer, I appreciate the opportunity to be on the other side of the fence and provide the outstanding customer service WVNET has been known for. I have always said that WVNET does an amazing job given the limited resources they have. I am looking forward to being involved in new technology and helping drive the State of West Virginia forward."* Welcome, Eric!

CUSTOMER SATISFACTION SURVEY WINNER

Each month, WVNET recognizes a customer who took the time to complete our *Customer Satisfaction Survey* to tell us how we are doing. We thank everyone who takes that extra time to give us advice, kudos, or criticisms that will help us improve our service.

This month we'd like to congratulate our winner, *Melinda Dalrymple at St. Mary's Correctional Center.* Melinda called our Network Operations Center with a request for help with unlocking her account and resetting her password. James Dubose of our Network Operations Center took the call and immediately resolved the problem. Melinda comments, *"The help line was both congenial and understanding. It was embarrassing for me to call about getting locked out for forgetting a password, but I was put at ease with the professionalism displayed by the help line."* James DuBose has been a valuable member of the Network Operations Center for several years and is appreciated by both customers and coworkers alike.

As always, at the end of every month, we will draw a winner, contact them by email, and send WVNET memorabilia in appreciation. Please complete our survey by looking within the incident email of any interaction that you have had with us. All comments are taken seriously and help to improve what we do on a daily basis.
Thank you, *Melinda,* and thanks again to all of our customers who continue to shape and improve WVNET. We appreciate you! *(Guest article by WVNET staff member Fran Barnes)*

STORAGE AREA NETWORK

Storing data is something that most of us are aware of today. We take pictures with our phones, save documents, and use this storage for multiple purposes. Consumer storage prices have been consistently dropping and large volumes of storage space might lead to question the need for enterprise storage. However, there are substantial differences between storage used by the consumer and that used in the enterprise. Enterprise class storage is designed for longer duty cycles, higher throughput, and greater reliability.

Some key differences include:

- Enterprise class drives are built with bigger, better, and faster components – from stronger actuator magnets and faster spindle speeds to increased platter counts, enterprise class drives are more capable of delivering more IOPS than desktop class drives
- Enterprise class drives are rated for a much heavier duty cycle, capable of serving more data, more often.
- Enterprise class drives carry longer warranties from the vendor.
- Enterprise class drives have more 'intelligent' firmware that is capable of identifying and recovering from corruption and other errors.
- Enterprise class arrays running enterprise class drives have automatic RAID rebuild, proactive hot-sparing, and monitoring/alerting capabilities.

As mentioned above (see "Strategic Milestone Updates, Systems") WVNET's use of SAN technology provides many benefits for customers who need enterprise class storage. Storing your data in WVNET's cloud provides confidence that it is secure, backed up, protected from hardware failure, and available at a high speed. You also get the benefit of knowing that your data is kept here in West Virginia instead of being spread around the US or the world.

(Guest article by WVNET staff member Steven White)

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AROUND THE WATER COOLER...

Libby Cress this month's recipient of "Moby Award..."

Receptionist Libby Cress (pictured on right in photo) was presented with WVNET's Moby award at a recent staff meeting. The Moby is given by one WVNET employee to another for "doing a whale of a good job." Cory Morrison (former recipient and pictured on left in photo) made the presentation, explaining that *"Libby always has a smiling face for everybody when they walk in the door and she helps to keep us all organized, is willing to help her coworkers wherever she is needed, and she has a great personality to fit her responsibility of welcoming everyone to WVNET."* We hope you enjoy your time in the Moby spotlight, Libby! *(Guest article by WVNET staff member Cory Morrison)*

Years of Service to WVNET...

Enhancing Education Through Technology, WVNET serves the educational needs of West Virginia in the areas of networking, shared computing and support and consulting services by offering technological expertise to higher education, K-12, public libraries and state government. WVNET has an exceptional technology savvy team with a strong customer orientation. We're happy to acknowledge the fact that two members of our team, in particular, have reached significant milestones in their careers with us — Media Services *Program Specialist Karen Saffron* recently completed 35 years of service to WVNET and Network Operations Center *(NOC) staff member Mark Saffron* completed 30 years of service to WVNET. Thank you, Karen and Mark, for the contributions you bring to our organization to make it what it is today!

WVNET Holiday Charity Event 2017...

As the holidays approach this year, staff members wishing to do so may participate in helping to sponsor a family from the local Scotts Run Settlement House by contributing money or gifts. This year, we are sponsoring three children ages 15, 12, and 12. Holiday shopper elves stand at the ready to spend cash contributions for those choosing not to shop. Media Services *Web Assistant Marcie Merrill* is spearheading this effort, with assistance from other elves, and reports last day to donate is December 18.