

# WVNET Produces Extensive Technology Services at Low Prices

The West Virginia Network for Educational Telecomputing (WVNET) is a state agency that provides a diverse suite of technology services to West Virginia higher education, K-12, government and non-profits. **Through consolidation of equipment, software, licenses and personnel, WVNET is able to offer top-quality technology at a great savings to customers.**

With fewer than 60 employees WVNET produces numerous complex and essential technology services at a cost substantially lower than that of private companies. **Most WVNET customers would not be able to afford this technology without WVNET's cost savings through aggregation.** WVNET works with many customers remotely to reduce their need for local support staff. In situations where it is needed, WVNET makes on-site visits to fulfill customer needs.

## Communications

WVNET provides **Internet and video connectivity, and significant communications support** to higher education, K-12, libraries, courthouses, jails and government agencies throughout West Virginia.

- **WVNET provides Internet access for all of WV state government, all 55 county tax offices and courthouses, all WV Public Libraries, most public higher education institutions, and all of WV's K-12 schools.**
- WVNET helps the **WV Department of Education** install and design **core services** for the betterment of West Virginia K-12 students.
- WVNET supports the **WV Library Commission (WVLC)**
- WVNET is **the only eRate provider in the state** of WV, without which WVDE and WVLC, among others, would have difficulty obtaining **federal funding** for Internet services.
- WVNET is an **Internet2 (I2) Connector**, providing access for the state to the Internet2 network.
- WVNET is the **SEGP** grant holder for WV providing Internet2 services for the WV K-12 schools.
- WVNET is **WV's REN (Research and Education Network)**, and as such is a member and participant of **The Quilt**, a coalition which promotes delivery of networking services at lower cost, higher performance and greater reliability and security.
- WVNET collaborates with other **Internet 2 (I2)** members and RENs and is involved in various **R&D** activity all with a focus on providing solutions to WV needs. This includes having staff on various I2 working groups (WG), including the
  - I2 IPv6 WG
  - I2 NTAC (Network Technical Advisory Committee) WG,
  - I2 NTAC Security WG (initially involved with finding DDoS mitigation solutions)
  - I2 Performance WG
  - I2 SDN WG
- WVNET is a member of **3ROX** (3 Rivers Optical Exchange Consortium) and partners with sister organization **OARnet** in Ohio, providing **redundant links to the Internet** via Pittsburgh, PA, and Columbus, OH.

- WVNET is implementing a volumetric **DDoS mitigation** solution which will provide protection from such attacks to all customers on WVNET's network.
- WVNET installs, configures, troubleshoots and schedules **encrypted video for Family, Circuit, Magistrate courts, Jails, DoC, Federal Courts, remote Court interpreters, remote lawyers, remote health and human service professionals, Higher Education sites and WVROCKS and the WV Bureau of Prisons.**
- WVNET researches and tests possible **alternate technologies** such as white space radios.
- WVNET provides **technical support** for customers throughout the state and in-house, including advising, troubleshooting, and configuring network and network-related assets.
- **WVNET installs and removes internet equipment** when upgraded.
- WVNET provides a **managed** service provider (MSP) **WiFi solution** using the Aerohive platform for customers (e.g., HEPC, Eastern).
- WVNET supports statewide conference by providing **on-site wireless** for all conference attendees and vendors.

## Financial Interfacing

**WVNET is the essential player** in reconciling cash, providing the critical link between the State of West Virginia Treasurer's Office bank account (wvOASIS) and the Banner Financial Records for the Higher Education institutions.

The State of West Virginia Treasurer's Office is the bank account for state agencies and higher education systems, and checks are cut from the State Treasurer's Office.

**WVNET is the only resource** with the experience and expertise in linking and reconciling the two separate financial systems. **WVNET economically performs comprehensive, complex processes** that synchronize data field by data field, enabling the institutions to comply with Governmental Accounting Standards Board GASB. **Not having WVNET perform these critical services would necessitate the State paying another vendor millions more than the current 1.62 million dollar appropriation to WVNET.**

WVNET's payroll interface saves each institution from having to sort through tens-of-thousands of lines of funding data each payroll period. WVNET does this for the institutions by summarizing data and uploading the payroll into the institution's financial records. **This saves each institution from having to incur additional personnel costs.**

WVNET provides Pcard and general accounting expense interfacing and support, **also saving the institutions personnel costs.**

**WVNET is the sole provider of these interfaces.**

## Applications

WVNET hosts and supports **major software suites that impact the core operation of student tracking, financial aid awards, finance and accounting for Higher Education institutions** throughout the state. Without these services institutions would not be able to track students, course load, financial aid distribution, fees and fee collection.

Hosting at WVNET provides central shared resources and optimizes the management of these core systems. Each institution would require their own service personnel and equipment to operate these core services. WVNET handles the licensing of software as well as the equipment, backups and other services to keep these core systems available 24/7 for 17 of the 21 West Virginia institutions. **Consolidation of these services by one provider minimizes costs and SAVES MONEY** for all participating institutions.

- WVNET supports 10 Higher Education institutions by hosting **BANNER**, their **student information and tracking software**.
- WVNET supports 17 Higher Education institutions by hosting **DEGREEWORKS**, their **student-based software on academic progress and success**.
- WVNET supports 17 Higher Education institutions by hosting their **TRANSFER ARTICULATION SYSTEM**, the student-based software allowing students to evaluate what courses they have taken at their current institution that may be transferred for a degree at another West Virginia institution
- WVNET supports 14 Higher Education Institutions by hosting **ARGOS**, the central system by which each institution creates **electronic reports** on the operational level and statistics about their institution.
- WVNET houses data for the **P-20 project**, a collaboration between Higher Education, WV Department of Education and Workforce West Virginia. This data sharing initiative coordinated, programmed and developed at WVNET provides information on student progress through the educational systems and success in the West Virginia workforce.

## Systems

WVNET Systems provides a core infrastructure framework that is managed and maintained by an expert staff 24/7/365. This includes all the necessary equipment, backups, supporting software and personnel to operate this infrastructure. WVNET systems personnel offer their expertise in troubleshooting issues and provide assistance and recommendations for service configurations for customers. **Without this support, external consultants, service contracts, or hiring of additional staff would be required by institutions throughout WV.**

WVNET Systems provides mission critical services such as:

- Hosting of **Distance Learning** via the Blackboard LMS for multiple schools at a significantly reduced cost from hosting directly with the Blackboard company.

- Enterprise Level **Remote data backup** services via Tivoli Storage Management providing customers with security and reliability for keeping their mission critical data safe.
- Virtual infrastructure services for hosting **Virtual Machines** in WVNET's redundant data center. WVNET supports core infrastructure services for schools such as MountWest and Eastern and provides expertise in managing these services.
- **Email services**, administration, and filtering via Linux Email Servers, Microsoft Office 365, and DefenderMX email filtering.
- **Listserv** services via LSOFT software for multiple organizations and agencies that rely on this mailing list service to relay critical information to all of their users.
- **Domain Name Services** Procurement and Management for multiple agencies. These services are provided with redundancy to ensure that customer resources are always available to their recipients.
- Support of **hardware and management for Banner** used by 17 of the 21 institutions in the state, providing all of their student information and tracking.
- Support of **hardware and operating system management for web hosting** services used by over 150 state schools and agencies.
- Support of hardware and operating system management for all services provided by WVNET.
- Utilization of automated **Storage Area Network (SAN)** snapshots to provide point in time recovery for hosted virtual machines with minimal downtime.
- **Systems monitoring** via NAGIOS to provide notification of potential issues that affect system availability and performance for internal and external customers.
- **Internal software development** for custom monitoring and application integration.
- **Colocation services**. Without WVNET, the **OASIS** Project, **Courts, WVU, K12**, and several other smaller entities would not have a place for their **off-site** equipment.

## Procurement

WVNET Procurement provides nearly all higher education institutions with the Microsoft Campus Agreement that gives them **access to all Microsoft products at a greatly reduced price**. This price reduction is due to the fact that by bidding this as a consortium under WVNET, **Microsoft resellers give WVNET greater price reduction due to the total FTE of this consortium**. This contract is bid every three years.

WVNET **provides contracts with Ellucian for the Banner products and the Oracle** contract for Banner and other applications to run on.

WVNET **provides open end contracts** that allow all higher education entities to purchase off a competitively bid contract without putting out a bid themselves every time they wish to procure an item.

## Media Services

WVNET Media Services provides creative support for other WVNET departments and the WVNET agency, including the production of media, graphics and applications. They also provide services to WVNET's customers as outlined here.

## Web

WVNET Provides web site design, development, migration, hosting, assistance, troubleshooting and compliance improvement. WVNET's prices are lower than most commercial vendors, and their one-on-one assistance and training which is included with hosting is unmatched by any private company.

- **Web Sites** - WVNET provides web development, hosting and assistance to K-12 and higher education, government and non-profits. They have built and support over 200 sites, some of them significantly complex.
- **ADA Compliance** – School web sites are now being audited for Section 508 ADA compliance. Schools not in compliance can be fined. WVNET is working with a growing number of schools to evaluate site compliance and make corrections.
- **Consulting and tutoring** – WVNET is constantly working with customers to make site modifications and additions. Many teachers in WV need help to keep their sites up-to-date, and WVNET developers work directly with them.

## Conferences

In-state education conferences provide a cost-effective venue for West Virginia educators to meet, network, learn, teach and train. WVNET has made these conferences possible for many years.

- WVNET works closely with the WV Department of Education to produce a yearly **Statewide Technology Conference (WVSTC)**. Aside from coordinating the logistics of this conference, WVNET provides all of the technology, networking, financial and media management. This is the only annual in-state K-12 conference.
- WVNET hosts a yearly **Higher Education Technology Conference (WVHETC)**. It is similar to the WVSTC but scheduled and structured for higher education. This is the only annual in-state conference held by and for higher education faculty, staff and students.

## Custom Applications

WVNET develops, hosts and supports custom applications to assist education, government and non-profits. These are **original software systems that are only available at WVNET**.

- **OZ Tracking System** – application used by RESAs, K-12 county schools, Higher Education institutions and Harrison County Commission. OZ provides a collection of customized functions to **manage and document problems, tasks and requests**.
- **PSTACHIO** Public Service Training Application – used by public service trainers throughout the state to **record and report training results for public service personnel** (e.g., fire fighters and EMS workers).
- **WVIRC Inventory Management** – used by the West Virginia Instructional Resource Center to **request and track supplies for deaf and blind students**.
- **Nursing Application** – used by the WV Center for Nursing to **schedule and report nursing student experiences** in medical institutions throughout WV.
- **Gatekeeper Application** – used by public schools to **track and report student arrivals and departures using fingerprint scanners**.
- **Electronic Bid Application** – used by higher education institutions to **advertise RFPs and RFQs, and accept vendor bids by secure electronic transfer**.

## Multimedia

WVNET occasionally works with customers to create or edit video, photography, printed materials and on-line designs.

## Distance Learning

### Blackboard Managed Hosting at WVNET

WVNET's Blackboard Managed Hosting service offers comprehensive premium support for pennies on the dollar @19.92 per annualized student full time equivalent (FTE) as opposed to the "per user" rates charged by vendors. Furthermore, WVNET caps all institutions at \$61,440.00 for premium support whereas vendors have no caps. Thus, the return on investment for institutions of higher education is substantial. For example, if WVNET charged Fairmont State University the full amount based on their annualized FTE for Blackboard Premium Service, they would pay \$78,684.00 per year (3571 Annualized FTE @19.92=\$78,684.00) instead of \$61,440.00, a savings of \$17,000.00. In addition, WVNET provides both a web conferencing solution, streaming media services, and a custom retention application free of charge. Those services, if provided directly from the vendor, would add tens of thousands of dollars to the cost (see price comparison below).

Service	Blackboard*	WVNET
Managed Hosting	\$111,129.52	\$61,440.00
Web Conferencing	\$61,537.00	Included
Streaming Media	n/a	Included
Helpdesk (24/7) Faculty/Students	n/a	Included
System Administrator Support	Included	Included
GUI Administrator Support	Not Included	Included
System Upgrades	Included	Included
Training	\$15,000.00	Included
Retention Application	\$22,600.00	Included
<b>Total</b>	<b>\$210,266.52</b>	<b>\$61,440.00</b>

\*WVNET/WVHEPC Blackboard Master Contract Prices 2015-1017

WVNET provides managed hosting for the following schools:

Blue Ridge College (Premium) BridgeValley CTC (Premium) Eastern CTC (Premium) Glennville State College (Mid-Level) Fairmont State University (Premium)	Mountwest CTC (Premium) New River CTC (Premium) Southern CTC (Premium) West Virginia Northern CTC (Premium) West Virginia University of Parkersburg (Premium)
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## WVROCKS

WVNET hosts and manages WVROCKS, a **statewide portal that offers on-line courses for the popular Regent's Bachelor of Arts Program (RBA)**, a degree program geared toward adult learners who have some college education but have not finished their degree. WVROCKS is an amazing success that continues to grow every year, **helping WV adults to earn a college degree when they otherwise might not complete.**

## Helpdesk

WVNET operates a centralized Helpdesk / Network Operations Center (NOC) that is available 24/7/365 to provide assistance and problem solving.

- **Blackboard distance learning support** - The Helpdesk receives an average of 200 technical questions per week from schools that cannot afford their own Blackboard Helpdesk. This assistance helps to keep on-line courses running properly at all times while giving students and teachers assistance with technical challenges. Helpdesk operators are trained to solve typical user problems, and if needed can escalate a call directly to one of WVNET's instructional technologists or systems administrators.
- **Centralized monitoring of all state networking lines.** The NOC is a first responder to detect when there are interruptions to service, often discovering them before the service providers do. In the case of a disruption the NOC will notify WVNET telecommunications experts or external communications companies if necessary.
- **24/7/365 assistance for state government.** The NOC assists the WV Office of Technology by providing a Helpdesk that is always available for state employees.



## URCAST

WVNET is partnered with URCAST to provide **caching services to West Virginia schools**. This is a very important capability for locations that do not have high-speed internet service in homes. Teachers create lessons and load them on a caching computer at school which transfers them to students' tablet computers. Students can experience the lessons at home, including web pages, video and multimedia, without the need for internet access. Completed homework assignments are transferred back to the caching computer when the students return to school, and teachers can then access and grade them. Among the benefits of this service is the ability to provide education content and homework that can be worked on during school snow day closings.

## Human Resources

Besides providing local HR support for WVNET employees, WVNET's Human Resources group **coordinates training and learning opportunities** for the technical and nontechnical employees of WVNET. The field of information technology changes at an incredibly rapid pace, requiring practitioners to constantly hone and update their skills. The HR group also arrange local training for technical personnel around the state, providing a more affordable opportunity to learn new technology skills. The **reduced price of this training comes from aggregation**, since the cost per student is lower when the course has more participants.

## Summary

Technology in education is essential in today's world. It can be expensive to keep schools up-to-date with technology requirements, and this is especially a challenge in West Virginia's struggling economy. WVNET provides a solution by offering lower prices and top-notch support through consolidation of resources. The benefits of a Research and Education Network (REN) have been proven in almost every state in the U.S. WVNET is West Virginia's REN, and has been focused on enhancing education through technology in West Virginia for more than 40 years. Their diverse staff includes experts in nearly every type of educational technology. They are West Virginians helping the state they love!

This document shows a massive array of technology services that are made available to all of West Virginia by fewer than 60 people. This is almost unheard of, since many technology companies will have more staff than that to provide only a few of these services. WVNET is an important asset that offers hope for West Virginia's future, as we educate and re-tool our people for new economic opportunities.

