



IT PLAN

Fiscal Year July 1 2014 to June 30 2015

“Standardize, Simplify, & Save Money”

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**Needs to be approved by IT
Committee**

(Note: Some Items will change due to technology evaluations of the vendor's products)

Focus this fiscal year: Replace old laptops with new tablets / laptops. Infrastructure – implement more robust disaster recovery solution.

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Purpose

This document will detail the IT Plans for the Sayre Area School District for the Fiscal Year 2014 – 2015. This document contains the recommended actions that are to take place with respect to technology for this fiscal year. *As our superintendent, Dean Hosterman commonly states, “proper planning produces good results.”*

The overall focus of this year’s IT Plan is to continue to Standardize, Simplify, and Save money. The following is the list of tentative technology initiatives for the SASD.

For 2014-2015 the top priority project is the implementation on new student laptops in the areas that are used for computerized PA Online Assessments (the focus is to replace old 8 year old laptops). Implement more robust disaster recovery solution for our technology.

“Standardize, Simplify, & Save Money”

One of the biggest challenges with technology is maintaining the technology (and keeping the cost manageable). In order to achieve this, the following procedures are used:

1. Standards: Standards (like Dell for desktop PCs) – enables us to standardize the images (software) so that the installation is much faster and cost effective. Additionally, by buying a standard desktop brand, ensure that the troubleshooting and maintenance is much less time consuming than utilizing a variety of brands. *This is not just done with desktops, but with all technology within Sayre Area School District. **For example, this year PDE came out with new testing software that needed to be rolled out to most of our PCs – thanks to our standards – we were able to use technology (Desktop Authority) to accomplish this task.***
2. College Internships / Work: Leveraging the help of college internships / work allows us to cost effectively implement and maintain the technology within the school district. ***This not only helps the district, but gives the college students a valuable hands-on experience that aids them in acquiring jobs in their field of study.*** *Colleges that have participated in this program are Broome Community College, Bloomsburg University, Corning Community College, Edinboro University of Pennsylvania, Elmira College, Houghton College, Penn College of Technology, Lock Haven University, Mansfield University, Penn State University, RIT, University of Phoenix (Axia), University of Pittsburgh, and York Technology Institute.*
3. Technology Management Software: Sayre Area School District will research and leverage technology solutions that make us more efficient with the support and management of technology within the district. *As part of this year’s IT Plan, some of the items are, an update to our Desktop Authority, and research and implement more Windows 7/ 8 management features, implement more backup and **disaster recovery utilizing VEEAM and other technologies,** research management technology for mobile devices, implement network management software, and much more.*
4. Good Stewardship / Purchasing: Sayre Area School District will continue to negotiate lower prices for technology (fore example, utilize BLAST / State purchases - buying in bulk for lower costs). For example, this year we will be looking to leverage cost savings with the Microsoft ***“Shape the Future”*** initiative.

CONSULTING: BLaST IU17 (Priority - High)

BLaST IU17

Background

Sayre Area School District has many major projects for Fiscal Year 2014-2014 Part of any successful plan, is to include not only the correct technology, but the necessary people skills and resources to make the plan successful.

Proposed Solution

Contract BLaST IU17 on a year long contract where most of the hours will be used during the spring & summer By contracting for a annual contract (48 days) the district will save on per day costs and will have available the necessary resources to help make this IT Plan successful.

BLaST IU17 will help us with the following projects:

1. DISASTER RECOVERY: 2012 R2 Data Servers and DA Servers Replication
2. DISASTER RECOVERY: 2012 R2 Virtual Domain Controllers
3. DISASTER RECOVERY: 2012 R2 Exchange 2013
4. DISASTER RECOVERY: Backup Network Connection [BLaST IU 17 / Outside Vendor]
5. DISASTER RECOVERY: Infrastructure DR / SAN 4 Parts
6. DISASTER RECOVERY: VLAN Snyder [BLaST IU 17]
7. NETWORK: Web Filtering – iBoss
8. NETWORK: Wireless High School Athletic Field [BLaST IU 17]
9. SECURITY: Antivirus – Switch to Microsoft Solution
10. SERVER: MS Licensing 2012 R2 Server
11. SERVER: SCCM Server for Zero Deploy [BLaST IU 17]
12. SERVER: Zero Deploy 2012 R2 Server

DESKTOP: High School CAD Lab - Additional PCs / Relocation with Optiplex 7010's (Priority - High)

Need additional PCs for High School CAD Lab or relocate CAD Lab to a HS Lab Room.

Rationale

Need more PCs for the size of the CAD class.

Review the options of moving the CAD Lab to a Regular Lab or adding more PCs to the CAD Lab (may not have the space).

Key Financial / Resource Benefit (CAD is now free)

AutoDesk now has the CAD software suites free for educational institutions which will save our district money on a yearly basis.

Proposal

Use current AUTOCAD image for additional PCs.

Setup new PCs in final location – use HS Lab 235 for a full class of CAD students.

DESKTOP: Snyder Teacher / Staff PCs Reimage (Priority - Medium)

To update Snyder teacher / staff PCs via reimaging (focus on areas that of highest need).

Rationale

Pro-actively update the software to help optimize the PCs and help prevent viruses (or other spyware etc).

Proposal

Review each teacher / staff PC for reimaging need – focus on the areas that need the reimaging.

This will be dependent on how well the zero touch imaging solution works (due to amount of time needed to reimage student laptops and student lab desktops). Conducting reimaging via Acronis due to implementation issues with zero touch.

DISASTER RECOVERY: 2012 R2 Data Servers and DA Servers Replication [BLaST IU 17] (Priority - High)

Build new Windows 2012 R2 virtual servers and utilize DFS replication to have copies of key data and desktop authority servers in the HS and SE.

Rationale

Windows 2012 R2 servers handle the newer hardware better and have better performance than the Windows 2008.

This will increase reliability and performance.

Virtualized server allows disaster recovery (redundancy at the SE building if connection / fiber to HS Data Center is down). Basically, users in Snyder can log in to their PCs if the network link to the HS is down and use the key domain controllers, da servers, and data servers.

Proposal

Use BLaST IU 17 to migrate to new servers as follows:

1. Built brand new Windows 2012 R2 servers for cloning
2. Servers will all be virtualized
3. Servers will be located in HS Data Center
4. Replicated servers will be located in SE Data Center (disaster recovery).

DISASTER RECOVERY: 2012 R2 Virtual Domain Controllers [BLaST IU 17] (Priority - High)

Build new Windows 2012 R2 virtual servers.

Rationale

Windows 2012 R2 servers handle the newer hardware better and have better performance than the Windows 2008.

This will increase reliability and performance.

Decommission old 1950 Dell hardware servers.

2012 R2 replicates DHCP so that if a server goes down, DHCP is still working.

Virtualized server allows disaster recovery (redundancy at the SE building if connection / fiber to HS Data Center is down).

Proposal

Use [BLaST IU 17] IU17 to migrate to new servers as follows:

5. Built brand new Windows 2012 R2 servers for cloning
6. Servers will all be virtualized
7. 2 servers will be located in HS Data Center
8. 1 server will be located in SE Data Center (disaster recovery).
9. Decommission and recycle old physical servers used as domain controllers (7 years old and no longer on warrantee).

DISASTER RECOVERY: 2012 R2 Exchange 2013 [BLaST IU 17] (Priority - High)

Build new Exchange 2013 on a Server 2012 R2 virtual servers.

Rationale

Windows 2012 R2 servers handle the newer hardware better and have better performance than the Windows 2008.

This will increase reliability and performance.

2012 R2 Server will allow Exchange server to be replicated (one copy in HS and one copy in SE so that if one server fails, the other server automatically takes over).

Virtualized server allows disaster recovery (redundancy at the SE building if connection / fiber to HS Data Center is down).

Proposal

Use [BLaST IU 17] IU17 to migrate to new servers as follows:

1. Built brand new Windows 2012 R2 servers (2) housing Exchange 2013
2. Servers will all be virtualized
3. 1 server will be located in HS Data Center
4. 1 server will be located in SE Data Center (disaster recovery).
5. Decommission and recycle old physical server used to house the Exchange 2010 server running on Server 2008 (physical server is 7 years old and no longer on warranty).

DISASTER RECOVERY: 2012 R2 Servers for Security Camera Storage (Priority - High)

Build new Windows 2012 R2 servers that store the SASD Security Camera Storage and meet disaster recovery needs so that footage is stored in both the HS and SE.

Rationale

Windows 2012 R2 servers handle the newer hardware better and have better performance than the Windows 2008.

This will increase reliability and performance.

2012 R2 has solid replication features so that a copy of the security footage will be replicated (copy in both HS and SE).

Proposal

Complete the following:

1. Built brand new Windows 2012 R2 servers for cloning.
2. Modify all security cameras to store footage to the new servers.
3. Implement replication between servers in HS and SE (test).

DISASTER RECOVERY: APC Power Management (Priority - Medium)

APC work for Data Center and Network Closets.

Rationale

Need to perform maintenance on Data Center and Network Closets.

Proposed Solution

Review and maintain all units.

Implement more network diagnostic features to help prevent future problems with the APC Units.

DISASTER RECOVERY: Backup Network Connection [BLaST IU 17 / Outside Vendor] (Priority - High)

Our Snyder fiber connection has had 2 unexpected fiber breaks in the last 2 years. To proactively plan for potential problems, a secondary backup connection is being planned.

Rationale

To provide a backup connection to the Snyder facility in case the fiber goes down.

The connection is critical for the daily operations of Snyder.

Proposal

There are 4 options for meeting this need:

1. Redundant fiber run from High School to Snyder (10 GB Connection)
2. Lease connection from Time Warner (100 MB)
3. Lease connection from Verizon (100 MB)
4. BLaST IU17 Point to Point connection from Snyder to Guthrie to High School

From the 4 options, the most cost effective solution is from BLaST IU17 but requires approval from Guthrie to mount a Point to Point device on their roof.

Sayre Area School District Backup Wireless Link from High School to Elementary School Proposal

This proposal is to have a redundant link from the High School to the Elementary School in case the fiber is cut, frozen, or broken.

Current Infrastructure:

Single Mode Fiber running from the High School to the Elementary School.

- This fiber has frozen during the 2013-2014 school year and took the Elementary School down for days.
- This fiber is currently able to run at 10 Gigabytes.

Proposed Additions:

Point-to-Point Wireless Bridge

- 1.4GHz Ubiquity AirFiber, 1.4 GHz bandwidth using a 24GHz beam on top of the High School.
- 2 - 1.4GHz Ubiquity AirFiber, 1.4 GHz bandwidth using a 24GHz beam on top of Guthrie.
- 1.4GHz Ubiquity AirFiber, 1.4 GHz bandwidth using a 24GHz beam on top of the Elementary School



Figure 1 - Snyder to Guthrie - Clear Line of Site

DISASTER RECOVERY: Infrastructure DR / SAN 4 Parts [BLaST IU 17] (Priority - High)

Enhance current disaster recovery setup in Snyder with new proposal from BLaST IU 17.

Rationale

Due to no smoke detectors, or sprinkler systems, our district data center is at high risk. Essentially without our of site protection we are at extreme risk even because the systems can be effected by fire, water damage, or other issues that occur in different locals of the building.

Need to come up with a solution so that most of the technology can work in Snyder if the HS Data Center fiber line is down or other systems are down.

Proposed Solution

BLaST IU 17 is developing a multi-phase solution to improve the disaster recovery in Snyder.

Proposal will be reviewed by Tech Committee.

Proposal consists of 4 parts (details to be presented during meeting):

Part 1: Upgrade backup product from MS PDM to Veeam Backupj

Part 2: Redundancy for Critical Servers (critical servers replicating to the Snyder building running 100% of the time.

Part 3: Storage for Backup Infrastructure (SAN for backup)

Part 4: Storage for Production Infrastructure (SAN)

DISASTER RECOVERY: VLAN Snyder [BLaST IU 17] (Priority - High)

Enhance current disaster recovery setup in Snyder specific site specific VLAN so that if the network link to the HS Data Center is down, limited functionality is available at Snyder.

Rationale

Need to come up with a solution so that most of the technology can work in Snyder if the HS Data Center fiber line is down or other systems are down.

Proposed Solution

BLaST IU 17 will help us setup a few switches with the appropriate VLAN settings and SASD staff will complete the rest of the work.

Basically, all traffic will go to the main Snyder switch and this will act as their core so that people can log in using the VMs in Snyder for domain controller, data servers, and Desktop Authority servers.

EDUCATIONAL TECHNOLOGY NEEDS ASSESSMENT: (Priority - High)

2014-2015 Needs

The top need is to the old student laptops that are no longer under warrantee. These laptops will be able to run all types of programs including the PA Online Assessment software. A second major need is to enhance our disaster recovery setup within the district to help deal better with fiber or major system outages.

The 2nd need is improving our disaster recovery solution for Snyder Elementary – for the 2nd straight year we had fiber breakage to Snyder. Work with BLaST IU17 to develop a more complete solution with redundant network access and also limited network usage if both network connections are down.

2013-2014 Needs

The top need is to upgrade the key lab, library, and laptops that are used by students with PA Online Assessment testing.

2012-2013 Needs

The top need identified is key infrastructure upgrades including desktop PC Operating System (Windows 7), Wireless (migrate from 3COM to Aerohive), Desktop Management (upgrade to Desktop Authority 9), Virtualization (upgrade to vSphere version 5), and Disaster Recovery (upgrade VEEAM).

2011-2012 Needs

The top need identified was the roll out of a new Student Information System which is one integrated solution including family access, PIMS, gradebooks, alert system, food system, learning support system (all from Skyward).

2010-2011 Needs

The top needs identified was the roll out of new network wiring, upgrade of labs, upgrade of backup system software, more on disaster recovery, more server virtualization, new HS music lab.

2009-2010 Needs

The top needs identified was the roll out of additional classroom PCs, upgrade of labs, upgrade of web filtering solution.

2008-2009 Needs

The top needs identified was the roll out of additional classroom PCs, upgrade of labs, more computer projectors, and smart tablets.

2007-2008 Needs

The top need identified was roll out of computer projectors, screens, and smart tablets.

2006-2007 Needs

The top need identified was the replacement of old teacher PCs including both elementary and high school building.

EDUCATION: Technology Webinars (Priority - High)

Complete various webinars on the latest technology utilized at SASD.

Rationale

Training allows SASD IT staff to follow best practices with supported technologies.

For this fiscal year, this will be a high priority due to the number of new technologies being implemented.

Action

Attend various webinars on new technologies such as Nimble SAN, iBoss Web Filtering, VEEAM, ESXi, Windows 8.1, Server 2012 R2, and much more.

EDUCATION: Staff Technology Training (Priority - Medium)

SASD Staff

Background

The IT Plan includes a vast amount of new technologies. In order to effectively leverage these technologies in the classroom, proper training is needed. Briefly, the following are areas that the SASD staff / teachers need training in (please note that not each staff / teacher has the same needs):

1. How to log on to our new network and MS Networking Basics (including individual network storage, student storage, and group / shared storage areas).
2. How Our New Internet Filtering Works iBoss (including procedure on how to get web sites blocked).
3. How Email Filtering Works (including procedure on how each user can delete or deliver blocked emails).
4. How to use new WAN BLaST technologies
5. Skyward tips and tricks (ex. Teachers train new teachers)
6. How to use our email – MS Outlook
7. Computer policies (including proper usage, security, viruses)
8. Removable storage (including flash drives)
9. Video projectors
10. MS PowerPoint (how to leverage this in your classroom teaching)
11. Scanning
12. Saving files in the right format
13. Searching the internet effectively
14. MS Office
15. Smart Board training
16. Utilizing cameras, recorders, with PC's
17. How to publish materials to school web site

Proposed Solution

To provide for the Teacher training, a variety of mechanisms will be used not limited to:

1. Continue to deliver Technology Tips that detail how to complete common tasks with respect to SASD technology
2. Technology books
3. In house training (ex. train the trainer)
4. External training (including external companies and colleges)

FINANCIALS: Budget Breakdown Financials (Priority - High)

Budget

Background

The IT Plan is focused on excellent stewardship of tax payer's dollars. By utilizing the Technology Needs assessment, the money is focused on the district's needs. As part of the accountability of the financials, a detailed report is presented to the school board IT Committee to review. Each purchase in the IT Budget is documented in this financial report. Additionally, the IT department is committed to constantly review financial purchases and negotiating with each vendor to get the most technology for each dollar spent. *Good stewardship consists not only of getting a good price but buying technology that is reliable, meets the needs of the SASD, and is financially cost effective to support in the long run.*

INTERNS: College Internship Program (Priority - High)

Purpose: The College Student / Internship Program provide the following for SASD:

1. Needed help to complete the work of the annual IT Plan at a very reasonable cost. These students have studied specific disciplines such as business, information technology, engineering, etc. that can be applied to the needs of the IT Plan (expertise at a reasonable cost).
2. Provides on the job experience for college students.
3. Requirement: Student must be currently enrolled in an accredited college or university while working at SASD.
4. Results: Last summer (2013) 2 college students participated in the college student / internship program. The college student was attending Mansfield University and the second student is attending RIT. They are still working during the summer and breaks at SASD.

Work Projects

College students will work on the following IT Plan Items (please note that college students will work on any items from the SASD IT Plan that we need help on. For more information, please see the SASD IT Plan).

1. LAPTOPS: Setup and image new laptops that will replace the old units.
2. PC IMAGES: Build PC images (for this year the focus is on new Windows 7 / 8 images – that include the standard suite of SASD programs).
3. SERVERS: Build Physical / VMWare servers (upgrading from older Server 2008 to 2008 R2 or 2012 R2).
4. NETWORK CLOSETS: Add new network wire and rewire and organize network closets
5. APC: Add additional and replace APC units.
6. INVENTORY: For all SASD technology – continue to document our inventory and implement our standard naming convention for each PC (including Labeling each PC appropriately).
7. TESTING PLANS: Develop testing plans & test the PC's.
8. TECH TIPS: Create and modify Technology Tips on common activities for staff and teachers.
9. SOP (Standard Operating Procedure): Document how the technology is setup, configured, and managed.
10. RECYCLE: Recycle / properly dispose of old / broken technology equipment.
11. TROUBLESHOOTING: Research and troubleshoot problems.
12. PHYSICAL SETUP: Set up computer desks / work areas (including new classroom desks and new labs).
13. RESEARCH: Test new technologies / new versions of software

14. SECURITY CAMERA: Work on computerized security camera systems (configuration and optimization)
15. HELP: Provide help for the staff during the summer with the new technologies being rolled out.
16. SECURITY AUDIT: Conduct a security audit with various test student / staff / teacher accounts to ensure that the security is set up properly.
17. MISC: Other duties as assigned (from the IT Plan).

INVENTORY: Conduct 100% Inventory (Priority - Low)

Complete and enter into Technology Database a 100% Inventory.

Rationale

To ensure all district technology is properly accounted for. This is required for PDE PATI survey annually.

Action

Modify and enhance Tech Inventory Database (ex. Include serial numbers in tech inventory).

Conduct district wide inventory of technology.

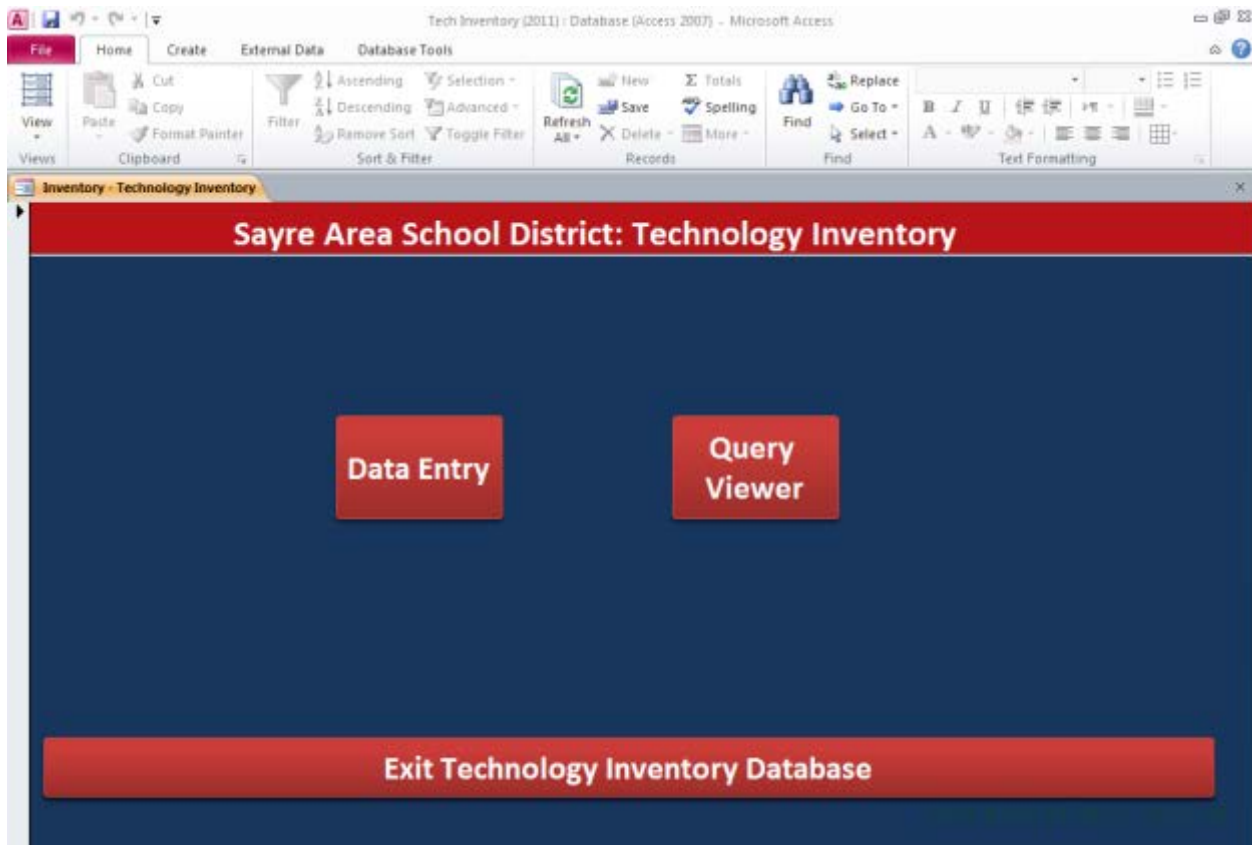


Figure 2- Tech Inventory Database

LAPTOP: HS Lenovo Laptops replacement Dell 3340 Laptops (Priority - High)

Replace old Lenovo laptop carts with Dell 3340 Laptop carts.

Rationale

All of the CFF Grant Lenovo laptops no longer have a maintenance contract, have many performance issues, and many hardware problems.

Need new laptops for additional devices to be used with PA Online Assessments.

Action

Order laptop carts to replace Lenovo carts.

Image and setup new tablet carts.

Researched and units have USB keyboards (help with vandalism of current laptop keyboards in the High School).

Researched and units run PA Online Assessments.

LAPTOP: SE 5th Grade Laptops - DELL replace Netbook (Priority - High)

Replace 1 Dell Netbook cart with Dell laptop cart (decision made by Snyder principal).

Rationale

Need new laptops for additional devices to be used with PA Online Assessments since Snyder only has 2 labs and 1 library with desktops available for PA Online Assessments.

Action

Reallocate 1 Dell HS laptop cart to replace Dell Netbook – Snyder 5th Grade.

Recycle and decommission Dell Netbook Cart (units are old, slow, and not upgradeable).

Image and setup all laptop carts (so that they have the latest software).

Please note: SE Grades 4, 5, and 6 will all have identical laptop equipment.

MOBILE: Apple / Android / Windows Mobile Devices Management (Priority - Low)

Continue to research and implement new Apple iPad / Android / Windows Mobile **Management** technology.

Rationale

Requested by superintendent.

Using technology for limited areas like learning support.

Proposal

Implementing a new technology like the Apple iPad / Android Mobiles devices will require a lot of work compared to rolling out Windows PCs (from our experience this year).

A whole new management infrastructure is being researched. Currently we have implemented CISCO's Meraki MDM – it address some of the needs (limited by the type of device security).

The cost will include not only the mobile devices, but also all of the software and technology needed to manage this equipment.

Went to Apple MDM training and rollout, management and security was covered. Ongoing analysis of how to leverage mobile technology (looking to promote Windows Tablet technology for future devices do to support, feature, and management advantages).

NETWORK: Closet Work (Priority - Low)

Continue to work on the SASD network closets with respect to wiring, labeling, documenting / inventory and APC needs.

Rationale

Much of the work has been completed in the past few summers but any new equipment needs to be completed like prior work – see standard below:

Standards

1. Reorganize all network closets (15) that now contain network ports for wireless access points, security cameras, printers, PCs, and thin clients.
2. Color code each type of device (ex. Orange is for PCs, Red for Printers, Grey for Access Points, etc)
3. Replace any defective APC units / batteries.
4. Ensure that sufficient APC power is available.
5. Install appropriate APC & Server rails.
6. Install appropriate Switch ears / connections.
7. Inventory all devices in Technology Inventory database.
8. Label each wire according to standards.

NETWORK: Fluke Fiber and Main Copper Testing (Priority - High)

Continue to test our main network connections.

Rationale

To test our main network connections to the various network closets and buildings.

Proposed Solution

Using our Fluke equipment, test our main fiber and copper network connections for any performance issues.

Yearly complete the following:

1. Tested our fiber feed between High School Data Center and Snyder Elementary building (no problems found).
2. Tested our fiber closet feeds (no problems found).
3. Tested key copper feeds (no problems found).

NETWORK: Juniper Switch Software Upgrade (Priority - Medium)

Upgrade our Juniper Switch solution to the latest software versions.

Rationale

Upgrade to the latest software on our Juniper Switches to improve performance and reliability.

Proposed Solution

Schedule and upgrade Juniper switches after hours to the latest version.

Completed the following on a yearly basis in the summer:

1. Upgrade all Juniper switches after hours to the latest version and rebooted all switches.
2. Test switches for errors and any problems.

NETWORK: Web Filtering – iBoss [BLaST IU 17] (Priority - High)

Implement new web filtering solution from iBoss per product switch from BLaST IU17.

Rationale

Our current web filtering solution is being replaced by iBoss per product switch from BLaST IU17. The new product has more functionality to handle our internet filtering needs.

Proposed Solution

Schedule BLaST IU17 to install the new iBoss web filtering product.

This new product will increase the security and reliability of our network – it has much more modern features including but not limited to:

1. Much better web filtering with HTTPS type sites.
2. More robust virus blocking
3. Ads on web pages blocking
4. Much better safe web searching
5. Much better reporting
6. Toolbars blocking
7. Clientless filtering
8. Integration with our wireless / and Active Directory

More information on the new product is located at:

http://www.ibosswebfilters.com/ibwf_overview.html



Figure 3 - iBoss

Planned implementation:

1. Schedule installation date (end of July)
2. Order July 1
3. Export and Import Blocks and Allows from M86 – we need to be able to export our Blocks and Allows from M86 and import them into the iBoss
4. Connection with our wireless – configure iBoss on our network as follows – users authenticate to our Aerohive wireless network via Active Directory – then any web traffic is automatically connected to the iBoss through AD. If a user does not authenticate via AD, they can not sure the web from the SASD network ,

NETWORK: Wireless High School Athletic Field [BLaST IU 17] (Priority - Medium)

Extend our Aerohive wireless solution cover the High School Athletic field.

Rationale

Implement wireless solution on our High School Athletic field. This will provide wireless access to the entire football field and can be used with an Aerohive Wireless Access Points to live stream events such as the high school graduation.

Proposed Solution

Complete the following:

1. Research and spec out needed Aerohive equipment (external equipment)
2. Contract BLaST IU 17 to mount equipment on outside of buildings.
3. Optimize all configurations on the server and access points.
4. Test.

NETWORK: Wireless Software Upgrade - Aerohive (Priority - Medium)

Upgrade our Aerohive wireless solution to the latest software versions.

Rationale

Upgrade to the latest software on our Aerohive Wireless Access Points and VM server that manages it.

Proposed Solution

Schedule and upgrade Aerohive.

Complete the following yearly:

5. Upgrade the Aerohive VM server to the latest release.
6. Upgrade all Aerohive Wireless Access Points.
7. Optimize all configurations on the server and access points.

Printers: Maintenance / Replacement (Priority - Low)

Perform maintenance on SASD printers.

Rationale

Some printers will need parts and maintenance performed due to usage.

Proposed Action

Review all printers to see which ones need service.

Maintain / fix spare printers.

Implement new printers / or replacement / reallocation printers.

RECYCLING: Old Technology (Priority - Medium)

Annual Recycling

Continue to recycle old equipment that is no longer utilized.

- This will continue on an annual basis to keep the work manageable.
- This year we will recycle via Eco International – give old, no longer usable equipment for school fundraiser.
- Serial / product identification will be maintained for recycled SASD IT recycled technology
- Recycling event will occur on August 2 at the Stealing Home Building (the former Sean Beirne Building).

SECURITY: Security Camera – Additional Cameras (Priority - Medium)

Rationale

We need the following additional cameras to more securely monitor our facilities:

1. Additional cameras at the High School.
2. Additional cameras at the Snyder Elementary School.
3. Need to replace cameras that are no longer working properly.

Proposal

1. For some camera installations, may need to contract with BLaST IU17 to add additional cameras.
2. Review and balance out the storage of the cameras.
3. Upgrade the Mobotix software to the latest release.
4. Upgrade the camera storage servers to 2012 R2 Server and use replication to store a copy in the HS Data Center and another copy in the SE Data Center

SECURITY: Audit, Policies, Additional Measures (Priority - Medium)

For fiscal year complete an internal and external security audit.

From a prior security audit, the following recommended security changes were implemented:

1. All new Admin security for IT servers (user and domain accounts).
2. All new Admin security for IT switches.
3. Implemented new Firewall solution to keep malicious email threats outside of the district.
4. Implemented Journaling on our MS Exchange server (keep track of all emails).
5. Upgraded our antivirus solution – more efficient, yet better protection.
6. Implemented more SOPs and internal procedures to improve security.
7. Audited student data directories.
8. Restricted email group access (internal and external).
9. Desktop Authority secured remote administration.
10. Desktop Authority inactivity computer lock.
11. Exchange Journaling Archiving.
12. Began implementing VLANs with SASD (converted HS printers over to VLAN 100)
13. Setup VLAN specific VMWare Image Center servers for LE, SE, and HS.
14. Antivirus protection and how it helps us keep a better check on inappropriate programs on SASD PCs
15. Review of networking resources allows for more secure access for SASD users.

Here is what we plan to implement in 2014-2015:

1. Radius authentication for all switches.
2. Test and optimize of VLAN security for security cameras.
3. Test and optimize of VLAN security for wireless access points.
4. Test and optimize of VLAN security for wireless laptops.
5. Test and optimize of VLAN security for desktop PCs.
6. Test and optimize of VLAN security for servers.
7. Test and optimize of VLAN security for U & S environmental controls.
8. Test and optimize of VLAN security for SE printers.
9. Add additional disaster recovery storage in SE.
10. All new Admin security for IT servers (special and domain admin accounts).

SECURITY: Antivirus – Upgrade to Latest Version (Priority - High)

Upgrade to the latest version.

Rationale

Need to upgrade our ThirtySeven4 program for the following reasons:

1. Easier to manage and deploy
2. Systems perform faster
3. Better protection.

Proposed Solution

1. Implement 374 solution to upgrade all other PCs based on log on.
2. Include 374 software on newly imaged PCs.

Security: Picture ID – Procedures (Priority - Low)

Rationale

Continue to take student pictures for fiscal year and add them into the Student Information System (Skyward). This will allow verification of students with their pictures.

Possibly research and expand utilization (elementary) and research using Student Picture ID cards with the cafeteria system and the library system.

Proposed Action

Create standard procedure for when to take new pictures for HS Students.

Create standard procedure for how to handle (charge students) for missing picture IDs.

Create standard procedure for the handling of staff IDs.

Create new standard for student and staff ID cards (layout and design) via Skyward / Crystal Reports.



Figure 4 - Sample Picture ID

Standard ID Usage

Use Skyward ID (Other ID) for Skyward, Library, and Cafeteria.

SECURITY: Deep Freeze (Priority – Medium)

Continue to research and implement Deep Freeze on select critical PCs.

Rationale

Clean Slate and /or Deep Freeze allows PCs to reboot and restore to their original state. This will help with student PCs that might be compromised.

Proposed Plan

Research and implement this solution in the various High School areas after imaging select PCs.

Implement in problem areas consisting of the teacher lab PCs.

SERVER: Balance out work load of all VM Servers (Priority - Medium)

Balance out all of our virtual servers so that the work load improves the VM server performance (example “the log in process faster”).

Rationale

We went from 20 physical servers to 10 physical servers and need to balance out the virtual servers to get the best possible performance and reliability.

Complete the following on a yearly basis:

1. Moved all VM data servers to unique physical servers.
2. Moved all VM security camera storage servers to unique physical servers.
3. Moved remaining servers to physical servers based on work load.
4. Continue to monitor and balance out servers.
5. Continue to adjust network (each physical server has 4 network cards).
6. Continue to adjust RAM and resources and move servers

SERVER: CAD 2008 R2 Servers for new version of AUTOCAD Server (Priority - Medium)

Build new Windows 2008 R2 servers runs the licensing for our new version of AUTOCAD.

Rationale

Need to implement new virtual licensing server for CAD 2015 desktop licensing.

Proposal

Complete the following:

1. Built brand new Windows 2008 R2 servers for cloning.
2. Using the new R2 server clone, built new version of the AUTOCASD server for the CAD program licensing for CAD 2015.
3. Tested performance and online and offline licensing worked well.

SERVER: Cloud Access to SASD Data Servers (Priority - Medium)

To enable cloud based access to our SASD Data Servers so that mobile devices.

Rationale

1. Allow mobile devices through a web browser to access our SASD Windows Server data files (ex. iPad, Android, Windows Phone, etc).
2. Keeps storage in one spot for staff, teachers, and students.
3. Easier to manage and audit while extending our data storage to any device that has web access.

Proposed work

Completed the following:

1. Create server that allows access (ex. Novell Filr)
2. Setup desired access using existing active directory security.
3. Setup web page on our web site for the main access.
4. Test.
5. Document –SOP (Standard Operating Procedure)
6. Document – Tech Tip.

SERVER: Desktop Management - UPGRADE Desktop Authority (Priority - Medium)

Dell's Desktop Authority has been in use at SASD for many years. The following features are being utilized:

1. Power Saving – using Desktop Authorities (DA) inactivity features the district has continued to save money @ \$10,000 in electric during this fiscal year.
2. Security – locking computers – all student and staff PCs now lock when they have inactivity (each group has different settings)
3. Shortcuts – all computer shortcuts are managed by DA
4. Printers – all computers have the appropriate printers downloaded to the appropriate PC and the appropriate default printer set
5. Drive Mappings – all computers have the appropriate drive mappings set and managed by DA
6. Software installation (ex. Used to install the latest version of the PDE Exams).
7. Secured Remote Control – use secured DA remote control
8. Reporting – automating usage and security reports to quickly monitor SASD network activity
9. Reporting – auditing computer hardware (ex memory configurations)

More information can be found at their website at: <http://www.quest.com/desktop-authority/whats-new.aspx>

Proposed Enhancements

Continue to enable and implement more DA features including but not limited to:

1. Upgrade DA from version 9 newer release (please note that this company is now part of Dell).
2. Implement new features.
3. Implement more reporting and utilization features.
4. Training – attend various DA training sessions to learn the Best Practices of managing with DA

SERVER: MS Licensing 2012 R2 Server [BLaST IU17] (Priority - High)

Build new Windows 2012 R2 servers runs the MS Licensing.

Rationale

To use the newer management features of MS Licensing that come with 2012 R2.

Proposal

Complete the following:

1. Built brand new Windows 2012 R2 server.
2. Install MS Licensing.
3. Utilize KMS licensing for SASD location PCs (network licensing).
4. Utilize MAK licensing for SASD PCs that are in and out of the SASD campus (individual license keys).
5. Test and document.

SERVER: SCCM Server for Zero Deploy [BLaST IU 17] (Priority - High)

Build new Windows 2012 R2 SCCM server to manage zero touch deployment for new computer images.

Rationale

SCCM will allow zero touch deployment of new computer images – thus saving much time on upgrading computers to new software images.

Proposal

Complete the following:

1. Built brand new Windows 2012 R2 servers with SCCM.
2. Using the new SCCM server test, document and implement the new imaging solution.
3. Build VMWare virtual image and use this image for all computer imaging needs.

SERVER: Skyward Student Information System - Upgrades (Priority - High)

For 2014 – 2015 we need to continue to leverage more of the Skyward system to help our district become more efficient with the management of our student information.

Desired Outcomes

1. Improve productivity (ex. Less time spent on PIMS mandated requirements)
2. Improve communication to student / parent (ex. Home access to information)
3. Improve the efficiency of managing student information.

Proposed work

Completed the following:

1. Migrate Server to Server 2012 R2 with support from Skyward
2. Performed all Skyward major updates.
3. Continue to perform minor updates.
4. Optimized server with help of technical support.

SERVER: VEEAM Archiving / Journaling the Exchange Server 2013 (Priority - Medium)

Continue to maintain / implement VEEAM Archiving / Journaling for our new MS Exchange Server 2013.

Rationale

Need to archive MS Exchange 2013 Server Emails using VEEAM

Proposed work

1. Archive old email to SASD archive server
2. Set up email rules to auto create archives
3. Use VEEAM to backup SASD archive server

SERVER: Zero Deploy 2012 R2 Server [BLaST IU17] (Priority - High)

Build new Windows 2012 R2 servers runs the Zero Deploy.

Rationale

To more effectively reimage SASD PCs with Zero Touch Deploy using 2012 R2 Server with SCCM.

Proposal

Complete the following:

1. Built brand new Windows 2012 R2 servers.
2. Install Zero Touch Deploy server.
3. Use VMWare to build VM for the image and only have one image for all devices.
4. Test and document.

SOFTWARE: Open Source (Priority – Medium)

Background

SASD continues to leverage Open Source software for improving the utilization of the technology within the district. Open Source software is free to use with no licensing fees.

Proposed Solution

Install the OpenSource software on all SASD PC's the following software (many of these programs are already on the PCs but we will **upgrade** the software to the latest release – this will be available on new PCs or PCs that need the new software – only these PCs will be re-imaged).

Ninite Programs to Install

Go to www.ninite.com and install the following:

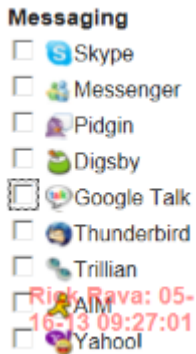
Web Browser

None – just Internet Explorer



Messaging

None



Media

- Media**
- iTunes
 - Songbird
 - Hulu
 - VLC
 - KMPlayer
 - AIMP
 - foobar2000
 - Winamp
 - Audacity
 - K-Lite Codecs
 - GOM
 - Spotify
 - CCCP
 - MediaMonkey
 - QuickTime

Runtimes

- Runtimes**
- Java
 - NET
 - Silverlight
 - AIR
 - Shockwave

Imaging

- Imaging**
- Paint.NET
 - Picasa
 - GIMP
 - IrfanView
 - XnView
 - Inkscape
 - FastStone
 - Greenshot

Make sure to uninstall FastStone if installed.

Documents

- Documents**
- Office
 - OpenOffice
 - Reader
 - SumatraPDF
 - Foxit Reader
 - CutePDF
 - LibreOffice
 - PDFCreator

Security

None

Security

- Essentials
- Avast
- AVG
- Malwarebytes
- Ad-Aware
- Spybot 2
- Avira
- Super

File Sharing

None

File Sharing

- uTorrent
- eMule

Other

None

Other

- Evernote
- Google Earth
- Steam
- KeePass 2
- Everything
- NVDA

Utilities

Utilities

- TeamViewer
- ImgBurn
- Auslogics
- RealVNC
- TeraCopy
- CDBurnerXP
- TrueCrypt
- Revo
- Launchy
- WinDirStat
- Glary Rava:
- InfraRecorder
- Classic Start

Compression

Compression

- 7-Zip
- PeaZip 3
- WinRAR

Developer Tools

Developer Tools

- Python
- FileZilla
- Notepad++
- JDK
- WinSCP
- PuTTY
- WinMerge
- Eclipse

Online Storage

None

Online Storage

- Dropbox
- Google Drive
- Mozy
- SkyDrive
- SugarSync

Complete the following:

1. Upgrade the open source software on all PCs that were reimaged.
2. Research Nininite professional product that automatically upgrades multiple PCs to the latest version.

SPECIAL PROJECTS: Snyder Student Pictures Update (Priority - Medium)

Update Snyder student pictures.

Rationale

To have more recent photos of Snyder students in our Skyward student information system.

Proposal

Complete the following:

1. Smith photography takes new pictures of Snyder students.
2. Import new pictures into Skyward

SPECIAL PROJECTS: Network SASD Copiers (Priority - Medium)

SASD copier lease is expiring and new equipment will be implemented that needs to be networked.

Rationale

1. To allow SASD staff to print via our network to these copiers (to use their advanced printing features).
2. To allow SASD staff to scan documents to network storage.

Proposal

Complete the following:

1. 1 Business Office copier
2. 2 HS Copy Room Copiers
3. 2 SE Copiers

SUPPORT: Technology Replacement Parts / Equipment (Priority - Medium)

Continue to stock technology replacement parts / equipment.

Rationale

Due to the large amount of technology being utilized in the SASD, we need to ensure that appropriate technology replacement parts / equipment are readily available.

Proposed Action

1. Purchase spare parts including keys for the keyboard, spare batteries, and other components not covered under warrantee.
2. Have at least 1 spare teacher PC for all 3 buildings already imaged and ready to go.
3. Have at least 1 spare student PC (for each type of machine for each lab)
4. Have at least 1 spare POE switch
5. Have at least 1 spare switch.
6. Review and build of inventory of other spare parts including mice, monitors, etc. for equipment that is no longer under warrantee.
7. Have at least 1 spare Lenovo laptop cart (none of our Lenovo carts have a service agreement – too old).
8. Decommission broken computers and save parts to fix old units not on warrantee.
9. Replace Lenovo carts with new Dell carts and save old Lenovo's for replacements (units are not on warrantee).
10. Order and stock high use technology items so that when items fail, they can be quickly replaced.

TEACHER / STAFF REQUESTS: (Priority - Medium)

Snyder Principal and High School Principal will gather and review with the Director of Technology the submitted teacher requests. All requests are limited by the amount of funding and resources in the technology department.

Review the utilization of the technology – for example:

1. Read Naturally
2. Study Island
3. Discovery Streaming
4. CAD
5. Minitab
6. Maple

Tablet / Laptops for PA Online Assessments

Implement new tablets / laptops for faster PA Online Assessments for both SE and HS.

Complete the following:

1. Replaced all Student Laptops that are used for PA Online Assessments with new Dell Venue 11 Tablet PCs that are fast and energy efficient (replace Lenovo and old Dell Netbooks).

Accelerated Reader for High School

Implement Accelerated Reader program for the High School (already in Snyder).

Complete the following:

1. Contact vendor for pricing (check for discounts for 2 school buildings).
2. Upgrade SASD AR server to latest version and licensing for both buildings.
3. Test and document.

HS Cafe – MFP Printer

Add MFP printer to HS Café office.

Complete the following:

1. Setup MFP printer in HS Café office.
2. Test.
3. Tech Tip – on how to scan.

HS Kemp Laptops / Tablets

Requested Laptops / Tablets

1. If funding is available, purchase cart.
2. If not, Kemp can share with Cochi cart (old netbook cart is being upgraded)

SE and HS Library System Upgrade (Follett)

Upgrade the SE and HS Library System to the latest version from Follett

Complete the following:

3. Upgrade SASDFOLLETT server.
4. Test and document.

SE Principal - Printer

Add laser printer to SE Principal's office.

Complete the following:

5. Reallocate printer to SE Principal's office.
6. Setup.
7. Test.

Faster Log On's

Continue to look at ways to improve performance.

The following items took place during the summer:

1. Replace student laptop carts with new Dell Tablets / Laptops (with solid state drives for faster performance).
2. Upgrade SASD wireless (updated all of our Aerohive access points and our server to the latest version)
3. Upgrade Desktop Authority (desktop management software) to the latest version.
4. Upgrade our Domain Controllers, Data Servers, key DA servers to Server 2012 R2 virtual servers to improve performance.
5. Reconfigure MS Group policies (streamline)

Additional Requests

There are additional requests from teachers and staff that are not in this document but are stored in our IT Plan folder for 2014. These requests will be reviewed and prioritized with the above requests based on the funding and resources needed. Please note that the people resources to implement technology is limited which affects the prioritization of the projects.