

City of Findlay, Ohio

Computer Services Department

Annual Report 2017

COMPUTER SERVICES DEPARTMENT RESPONSIBILITIES:

The Computer Services department is responsible for maintaining all hardware, software, and network access for the various City departments. Hardware support includes the evaluation, purchase, installation, preventive maintenance, repair, and the inventory of supplies for the computer equipment throughout all City departments. Some of the hardware supported includes a Hyper-V high availability failover cluster running multiple virtual servers, a stand-alone email and web server, several physical application servers, firewalls, L3 switches, VPN appliance, and every desktop computer and printer in the City. For software, we both assist the other departments when researching new software, as well as work alongside them on the final implementation, testing and training of all new software installed on the city's network of servers. Our staff then provides ongoing first line support to the city's departmental personnel for all software operating on the city's network. We are responsible for administering the 3rd party packaged software applications on the network, performing periodic system software updates, and also backing up all data on a daily basis. Several city applications and reports are custom written and maintained by Computer Services staff as well. We also provide basic operational support for various versions of Microsoft Office products such as word processing, spreadsheets, and calendar sharing.

COMPUTER SERVICES DEPARTMENT STAFFING:

Staffing for the office consists of:

- Computer Services Manager (4 years' service time)
- Computer Programmer (1 year service time)
- Help Desk Technician (3 years' service time)

COMPUTER SERVICES DEPARTMENT APPLICATIONS & EQUIPMENT:

All of the various software modules used city wide are accessed by hardware located in 28 city department locations, and in three other agency locations: Hancock County Adult Probation, Hancock Regional Planning, and Hancock County Prosecutor's Office.

There have been countless upgrades to the network infrastructure for the city throughout the year, both physical, and logical, as well as major security patches. The Microsoft Windows network servers are the central storage areas for departmental files. The city migrated to an MS Exchange 2016 email server this year, to replace the underpowered "SmarterMail" server that was in place. The new email server makes

available shared calendars for all licensed users; these shared calendars are accessed via MS Outlook at the individual users' desktops, and also available via OWA (Outlook Web Access), on any internet connected device. City email users have the ability to access their email, contacts, notes, etc via the same OWA portal. The City's network is protected by a dual layer defense which includes a DMZ between two firewalls. The City of Findlay's web site (www.findlayohio.com) delivers the city's departmental information via web pages to the World Wide Web via a 3rd party virtual server located outside the City internal network. This website is slated to be replaced with a new site, on a new hosting service in 2018. The Geographic Information System (GIS) stores and makes available the mapping layers to city offices. The Building Security server controls the locking and unlocking of doors in the Municipal Building. The InterAct Mobile server controls the interfacing tools used for patrol car computer access to Ohio LEADS, and the Police dispatching system via cellular cards on each system. All additional servers make up the hardware necessary for the various departmental software applications which run in a Microsoft Windows Server environment. Some, but not all of the departmental software applications include: CMI Utility Billing, eMIT City Income Tax, Emergitech InterCad, Emergitech InterBadge, Emergitech InterFire, and Innovare's CourtMaster 2000 for Municipal Court. The network supports resource sharing, and provides seventeen remote offices with a wireless network connection via Motorola Canopy devices to the network servers. The network also provides Internet access to the entire City network through a fiber connection managed by Spectrum.

COMPUTER SERVICES DEPARTMENT ACTIVITIES FOR 2017:

Our HyperV failover cluster has been performing without issue, and as expected since its implementation. RAM was increased on each Host in 2017 to account for the growing number of VM's being hosted. When the fiber loop is completed, we hope to move the replicated SAN, and one of the HyperV hosts to a remote location in the City. This will offer high availability during disaster recovery scenarios.

Necessary updates and fixes were installed on all of our third party software applications running on the network servers, network PCs and Police Department Laptops in the cruisers. The Computer Services staff attempts to minimize the downtime caused by these installations by performing them either after hours or during low volume processing times for the various affected personnel. The various software upgrades performed throughout the year included Exchange 2016 updates, CMI Authority updates, Emergitech updates, CourtMaster updates, Pitney Bowes updates, as well as general Windows Server updates.

Additional steps have been taken throughout the year to increase the overall security of the City's network. Some of these steps include upgrades to physical equipment, and a multiple layer approach to security. We migrated off Kaspersky in 2017, due to revelations by the Department of Homeland Security. We maintained, or improved all other security implementations in place. We have implemented many other security measures, including the addition of training end users to spot and stop phishing emails.

We began moving towards full deployment of Windows 10 on all City computers, and hope to achieve that goal in the next two years. Along with the new OS, additional security components are being enabled, that have historically been turned off. This includes UAC, LAPS, Firewalls, and others.

A new phone system has been fully deployed to all users in the Municipal building. The City chose a Mitel phone system when the project was sent out to bid, which was installed by Frontier systems. As of the end of 2017, the phone system was fully installed in the Municipal building, awaiting the phone numbers to be ported to our new provider from AT&T. We are also awaiting the completion of the Fiber loop project, in order to implement the phone system at our remote offices. We plan to have everything completed, and be left with simply deploying phones when the Fiber project is complete.

Finally, we have continued working on the Fiber Loop project to get fiber optic cables run from the municipal building to each of our remote offices. This is a joint project between the City, the County, and Findlay City Schools. This project was put out to bid, and Vaughn Industries was chosen to complete the install. All permits and make ready work has been completed by local utilities, and a majority of the underground conduit has been placed. Our contractors has not yet started the stringing of Fiber to any locations, we are hoping this gets underway in the near future.

During the month of January, our network administrator created automated jobs on every piece of network equipment in the City for configuration backups. Daily, and each time the configuration is changed on a piece of network equipment, the configuration is automatically uploaded to a server for archiving. These config files are also backed on our regular backup schedule. The Computer Services department also purchased a Phishing training program through KnowBe4. This program guides users through a video training session, then tests them on a monthly basis to ensure they cannot be tricked by typical phishing attempts.

In February the Phishing training was fully deployed to all City email users. Additional wiring in the newly renovated Court areas was completed, with all outlets being homerun to the server room. The water treatment office was prepped for fiber equipment, via the installation of a new wall mount rack, and punching outlets appropriately. The Fiber project was officially put out for bid, and discussion continued on the network equipment that will be used to facilitate the new Fiber. Our network administrator began work on updating network maps, and creating new maps to show fiber installation, and appropriate links.

In March we provided a walkthrough of all City properties for potential bidders on the Fiber Loop project. A pre-bid meeting was held to discuss the project in detail, and answer as many questions as possible. Our helpdesk staff began implementing city Wiki, this system will be used to house guides, accessible to all City employees, and will eventually be rolled out for individualized use by all departments. Our new programmer began 3/13/17, and the first major project was the continuation of the NEAT program. It was decided early on to start this program fresh, using a web based design, so as to allow this program to be used across any device with a web browser.

During the month of April, Two Factor Authentication (2FA) implemented on the City VPN to increase security; the vendor chosen was DUO inc. Work began on OLEIS for the Police Department, this system will enable the use of electronic tickets, greatly increasing the efficiency of this process. A new virtual server was built to house this application, and several pieces of hardware was deployed to facilitate it. This includes, dedicated Wireless access points, mobile printers, etc. We virtualized a hardware application server that was used to host internally created applications. The hardware this was running on will be repurposed for a new domain controller. We will slowly migrate all pieces of software from the virtual app server to appropriate locations, then decommission at a future date. Purchased new backup solution (VEEAM) and began migration of backups from backup exec to new software 2008r2

domain controllers retired, new 2012 physical & virtual domain controllers added. Purchased/deployed additional tablets for police, as well as 8 more desktops. Closed WORC, redeployed systems to existing departments. Deployed new wap for pd cruisers to implement OLEIS system, began installation of Exchange 2016

In May, we completed the migration of all backup jobs to our new backup solution, VEEAM. We are now completing backups, using a best practice 3 – 2 – 1 method. Backups are now performing properly, and have been confirmed able to restore in both test scenarios, and actual problem scenarios. We continued efforts to expire backups created from our previous solution (Backup Exec) as they completed their lifespan. This will ensure enough space for the new backup solution to get fully up to speed. Finally, we announced the bid winner for fiber loop (Vaughn Industries), and began work on creating and RFP for the VoIP phone project.

In June we completed setup and configuration work on the new Exchange email server. The new email system was fully deployed, and all requested email was migrated into the new system. As there was no automated way to complete the migration, this was done manually on an individual user basis. As this is the case, a large majority of the month was spent on this.

In July we continued work on the exchange integration, and finalized the server. All applications, and scanners have been updated to point to the new server, and everything is now working properly. The old SmarterMail service has been placed in a disabled state, to confirm nothing is continuing to use it. The NEAT program created by our new programmer was deployed to the NEAT departments, and plans were put into place to begin preparing the program for use by the Zoning department.

In August the VoIP project was put out to bid, and the Computer services office hosted several vendors to review their phone systems. A bid was chosen near the end of the month, the contractor (Frontier) will be installing and supporting a Mitel phone system. Work was also completed to secure the current Court website further. All traffic destined for findlaymunicourt.com now has to traverse a system designed to inspect the traffic, looking for suspicious activity. This will greatly increase the security of the site, which is a necessity due to the sensitive nature of the data housed on it.

During the month of September our programmer began work on creating a new search functionality for the Court Website. This is to alleviate some security concerns with the older site, and bring it in line with the new website that will be rolling out in 2018. A new application was deployed to the Fire Department, which will help them track inspections on trucks and equipment. Previously this was done on paper, and stored in filing cabinets for the life of the equipment. This will streamline the process, as well as alleviate the need for additional storage space for filing cabinets. Work was also started on the setup of the new VoIP phone system. Virtual servers were deployed, and configuration was started.

In October security cameras were installed in a couple locations in Court. These will be used for testing to determine camera usage for a total building overhaul that will be scheduled in the future. The new court document management program Contentverse was also brought online. This will replace the aging DocWorker system which will be archived and decommissioned. The new CMI utility "Authority" was moved to a new virtual server, so to meet all hardware demands. The legacy application will continue running on the old hardware, until it is deemed no longer necessary.

In November all permits for poles, and make ready work was finally completed. We began running into some issues with our contractor, requesting additional funds for several reasons, including working in inclement weather. We worked through several bugs in the new contentverse system, by reaching out to the Vendor, Perry protech. Most issues have been resolved, but a few lingering problems remain. The new Magistrate court room was completed, and all new systems were deployed, including computers, televisions, audio/video recording, and video conference.

In December the new Mitel VoIP phones were placed on all desks in the municipal building. These phones are prepped for use on all internal, and outgoing calls. We are awaiting the porting of phone numbers to begin fully utilizing these phones. New laptops were deployed to the water distribution crew. These will be used in the field to streamline work, and improve some old processes. Work also continued on the new Court Search website, and it was deployed internally for testing.

The Computer Services office deployed a new Liebert UPS unit in 2017, to replace 2 aging and underpowered units. The new system is capable of keeping all of the servers and network equipment powered during unforeseen power outages, and protects them during the transition from grid power to generator power. This ensures that our servers will have continuous power and can remain operational during these types of circumstances. Our new UPS unit will receive annual preventative maintenance and batteries will be replaced every 5 years under this maintenance contract.

Maintenance to the 400+ pieces of hardware, including PCs and Printers, was performed as needed throughout the year. This included cleaning, repairs, replacement, or retirement of pieces or whole machines. Items that were not worth fixing, upgrading, or no longer used were auctioned at GovDeals.com. More than 60 new pieces of hardware, including PCs, laptops, and printers, were deployed to the various City departments during 2017. We try to maintain a 5 year max replacement life cycle on PCs. This year, the computer services office inventoried all systems, and provided accurate information on the age of each system, so department heads had the information necessary to decide on a systems replacement.

The Computer Services staff continues to seek the most efficient software at the least cost to the City. However, we want to continue to maintain the same quality security and protection, yet at a lower cost if possible. We will continue to pursue more efficient software in the coming years, as a possible means of reducing our annual budget.

COMPUTER SERVICES DEPARTMENT USAGE 2017:

We calculate how much money should be charged back against a department based on the percent their department used of the total services and resources made available by the Computer Services department. The total of the Computer Services projected budget is multiplied by that percent, providing the amount to be charged in that particular department's budget. The items considered in services and resources are: equipment, number of users, application use, internet access, programming, and project time that will be spent on anticipated projects in a particular department for the coming year. You can find a departmental break down listed in Table A-1.

COMPUTER SERVICES DEPARTMENT OBJECTIVES FOR 2018:

We will continue our move towards server virtualization to the full extent possible, as well as continued advances in the security of our network. .

The new VoIP phone system will be fully deployed in 2018, and the current antiquated analog system will be removed, and sold off. This will no longer be managed by the County, so this responsibility will be transitioned to the computer services office.

We hope to move towards a workable Disaster Recovery solution, as well as move offsite backups to a different geographic location. This will ensure we can operate, even when the main building is compromised, as well as keep data safe in the event of a major catastrophe.

We hope to have the Fiber loop project completed early 2018, allowing for high speed connectivity to all of the City's remote locations. This will ultimately provide a 10Gb+ connection to each location, which will support data needs for many years to come.

Network security will continue to be an important initiative. We will work to close any potential security holes, and increase network security via hardware, and configuration changes. We also hope to simultaneously improve the redundancy of both our internal network, and internet connectivity.

Computer Services personnel will continue to pursue training in areas that can be of greatest benefit to the management of the city's network. We plan to purchase online training accounts for all Computer Services personnel that can be used to gain knowledge of products and systems used by the City, and hopefully obtain certifications in various fields.

The Computer Services Department will continue to support all of the existing applications running on the city's network, both 3rd party and custom written. Maintenance programming and user help support for the various application systems will consume much of our time. We will make ourselves available to discuss and analyze the technical needs of the various city departments. We will strive to become more efficient and cost effective through the use of technology advancements within the city's network environment.

DEPARTMENT	Computers	Phones	Servers	Printers	Users	Apps	Internet	Proj Hrs	Proj Pts	Prog. Units
Airport	3	3	14	1	5	7	5	23.70	4.74	5.0
Auditor	9	6	14	3	6	9	17	23.70	4.74	5.0
City Council	0	1	3	0	0	6	0	23.70	4.74	0.0
Civil Service	1	1	12	1	1	6	1	23.70	4.74	5.0
Comp Serv *	3	5	8	1	3	7	28	315.70	63.14	5.0
Dispatch	8	5	2	3	11	9	10	68.70	13.74	10.0
Engineering	10	10	16	6	9	10	10	23.70	4.74	5.0
Fire	24	38	17	8	61	13	19	100.70	20.14	10.0
HRPC	6	7	14	2	8	9	6	23.70	4.74	0.0
Income Tax	9	8	15	7	7	7	9	23.70	4.74	5.0
Law Director	6	2	16	6	6	9	4	23.70	4.74	0.0
Mayor	6	6	13	3	4	9	4	23.70	4.74	0.0
Muni Court	41	32	19	19	29	13	34	310.70	62.14	5.0
NEAT	2	1	14	1	1	7	1	50.70	10.14	5.0
Police	59	39	19	17	71	13	52	800.70	160.14	10.0
PW - Cemetery	2	3	14	2	2	6	2	23.70	4.74	5.0
PW -										
Recreation/CUBE	5	5	15	4	9	10	7	34.70	6.94	0.0
PW - Streets	5	9	14	3	5	11	5	23.70	4.74	5.0
PW - Traffic Lights	1	2	12	0	1	5	1	23.70	4.74	0.0
HR Director	1	1	13	1	1	7	1	23.70	4.74	0.0
Safety Dir	2	1	13	1	1	8	1	23.70	4.74	0.0
Service Director	1	1	13	1	1	8	1	23.70	4.74	0.0
Treasurer	1	1	12	0	1	4	1	23.70	4.74	0.0
Water Billing	10	7	17	3	10	11	10	110.70	22.14	10.0
Water Dist.	4	6	15	2	13	10	4	23.70	4.74	5.0
Water Treatment	9	17	14	5	15	11	7	23.70	4.74	5.0
WORC	0	0	0	0	0	0	0	0.00	0.00	0.0
WPC/Sewer Maint	12	14	16	5	19	13	9	82.70	16.54	0.0
Zoning	3	3	14	3	3	8	3	80.70	16.14	10.0
TOTALS *	243	234	378	108	303	246	252	2382.60	476.52	110.0

2018 Computer Services Budget (Less Internet/Phone)

2017 Internet Charge

2017 Phone Charge

TOTAL 2017 Computer Services Budget Request

2018 Computer Services Budget Request

* Computer Services Usage is subtracted from totals before % is calculated for departments

Computers = 1 point for each individual system

Internet = Internet usage based on # of computers from total yearly internet charge

Phone = Phone usage based on # of phone from total yearly Phone charge

Servers = 4 point for physical or virtual server

Printers = 1 point for each individual printer

Users = 0.3 points for each user over the total number of computers for a department (this accounts for shared systems)

Apps = 1 point for each application used by the department

Projects Points equals .20 points per man hour for these estimated project hours

* 640 of the total Project Hours are shared equally by the 28 Departments

Programming Units to maintain their custom application = 5 points per application (some are split)

Usage % is calculated as: $(\text{Computers} + \text{Servers} + \text{Printers} + ((\text{Users} - \text{Computers}) * .3) + \text{Applications} + \text{Proj Points} + \text{Programming Units})$
(The totals of columns B C D E G H - Computer Services amounts))

Internet & Phone usage is calculated separately based on the actual yearly cost of each service, and the actual number