City of Findlay, Ohio

Computer Services Department

Annual Report 2018

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 high availability virtual failover cluster running multiple virtual servers, an Exchange server, several physical application servers, firewalls, L3 switches, VPN appliance, and every desktop/laptop computer and printer in the City. For software, we both assist all departments when researching new software, as well as work alongside them on the final implementation, testing and training of the 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 (5 years' service time)
- Computer Programmer (2 years' service time)
- Full Time Help Desk Technician (4 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 maintains an enterprise grade MS Exchange 2016 server to provide email service to all City employees. Email, as well as calendars, tasks, contacts, etc. can be accessed via MS Outlook at the individual users' desktops, and also available via OWA (Outlook

Web Access), on any internet connected device including Android, and Apple smartphones. The City's network is protected by a dual layer defense which includes a DMZ between two layer 5 firewalls. The City of Findlay's web site (www.findlayohio.com) was fully revamped in 2018, and delivers the City's departmental information via web pages to the World Wide Web. The site is hosted by a 3rd party vendor, and is located outside the City internal network. The Geographic Information System (GIS) stores and makes available the mapping layers to city offices. The City's current GIS (Accuglobe) is scheduled to be fully replaced in 2019 as part of the "New World" CAD project for the Police, and Fire departments. The Building Security server controls the locking and unlocking of doors in the Municipal Building. Security cameras will be added to the network, and will be maintained by the Computer Services office in 2019. 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. This system is scheduled to be replaced in 2019 as part of the "New World" CAD project for the Police, and Fire departments. All additional servers make up the hardware necessary for the various departmental software applications which primarily run in a Microsoft Windows Server environment. We are expanding various flavors of Linux throughout the cluster as well, including come CentOS, and Ubuntu machines. Some, but not all of the departmental software applications include: CMI Utility BIliing, 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 direct fiber optic connection to the central 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 2018:

Our HyperV failover cluster has been performing without issue, and as expected since its implementation. RAM was increased on each Host in 2018 to account for the growing number of VM's being hosted. The fiber loop was completed in the 1st quarter of 2018, and was brought online with very few issues. Each City building currently has a minimum 10Gb connection back to the municipal building, which is well beyond current usage. We have built, and deployed a new backup repository to our primary DR. site, with nearly 100TB of storage. This is substantially more space than what our previous repository maintained, and will allow us to increase the length of time backups are kept, as well as cover additional data, as the City's servers continue to expand. The VoIP phone system was completed for all of the outlying offices in early 2018 as well. Every City office is now connected to a central phone system via the City fiber network. All AT&T lines have been disconnected, save for a couple analog "emergency backup lines" that will be maintained for use by Police dispatch in the event of a catastrophic failure.

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 began migrating off Viper Antivirus in late 2018, 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 training end users to spot and stop phishing emails.

During 2018 Computer Services performed some "pen testing" on public facing connections. It was found during this testing that the Court Search site had several vulnerabilities that needed to be addressed quickly. The site was immediately placed behind a proxy, which stopped these vulnerabilities, while the City programmer began work on a new search site. This site was completed and rolled out in the 4th quarter of 2018. It has undergone a barrage of testing to ensure its security, and will also remain behind a proxy, as an added layer of security. Additional steps were also taken to improve security around logins for other Cities that need access to more detailed information. Updates will continue on the site, until all bugs are worked out, and everything is confirmed 100% functional.

Work on the in-house NEAT/Zoning program continued to evolve. Many additional features, as well as capabilities have been added by the City's programmer. This work allows NEAT/Zoning employees to operate more efficiently in taking on the various aspects of their job. Our programmer has been working closely with this department to make sure all needs are sufficiently met.

We are working 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.

We began working with Tyler to deploy a new joint City/County CAD system that will be used by the City PD, FD, and Engineering, as well as County Sheriff, and Jail staff. This involved spinning up 16 new virtual servers, and configuring them for the New World software. Computer Services has been working closely with Tyler to implement the new system, and keep things as stable, and fast as possible. We also worked jointly with County IT staff in order to allow network communication via fiber for County Sheriff office to connect into this system.

As part of expanding our virtual infrastructure, a large majority of virtual servers were moved to all Solid State storage. Approximately 15TB of solid state drives were added to City SAN's during upgrades throughout the year. Drives, and data were seamlessly migrated to these new drives with 0 down time. This eliminates one of the largest bottlenecks in our virtual environment, and will be a stop-gap solution for our storage needs until a new SAN system is purchased in the coming years.

A new Mitel VoIP phone system has been fully deployed to all users in the Municipal building, and all outlying building. All numbers have been ported from the old carrier (AT&T) to a new SIP trunk provider. We experienced a couple major issues during the port, but ultimately completed the process. The phone system is utilizing the City owned fiber loop to propagate service to all of our remote offices.

As part of deploying the new phone system, Computer Services was also responsible for removal of the old phone system and all of its components. This was a rather time consuming endeavor that involved

locating, and removing controllers form every office, as well as collection, and inventory of all phones. This was completed near the end of 2018

The fiber loop project was completed, and fully tested in the 1st quarter of 2018. This was a joint project between the City, the County, and Findlay City Schools. The planning and implementation of the project was several years in the making, but will be an invaluable asset in the City's network. As of implementation, we have experienced 0 down time due to fiber issues, and throughput has been as expected.

With the implementation of the new fiber loop, all new network equipment was needed to connect remote offices. New Juniper EX series switches capable of 10Gb single mode fiber connections were installed at all locations. As many of these locations had wiring in disarray, many new outlets needed to be run. The Computer Services office enlisted the help of various City workers at these locations to assist with running this cable in order to save expense of paying a contractor to complete it. All new wiring was terminated, and tested by computer services to make sure it met standards. This new gear will help facilitate the automation of uptime testing, as well as provide years of trouble-free service.

COMPUTER SERVICES DEPARTMENT USAGE 2018:

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 2019:

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 administered by Computer Services staff, and will no longer be managed by the County.

We have acquired approval for funding the implementation of a fully functional DR site within the City. This will be implemented in 2019, as well as an updated DR plan for all City departments. 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.

The second direction of the Fiber loop will be brought online, through additional network equipment in our DR site. This will allow signal to propagate to each site via 2 different geographic routes, which will ensure connectivity, even in the event of fiber damage.

As part of DR planning, a supplementary wireless connection will be built out to each site. This will be done at minimal expense, but will provide emergency connectivity in the event of a catastrophic failure of the fiber loop.

A second ISP will be brought online in 2019 that will provide both SIP trunks, as well as DIA circuit. This ISP will be brought into our DR site, to provide geographically redundant connectivity.

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.

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.

Table A-1

DEPARTMENT	Computers	Phones	Servers	Printers	Users	Apps	Internet	Proj Hrs	Prog. Units	Usage %	Budget Amt
Airport	3	4	14	1	5	7	5	20.00	5.0	2.74%	$12,387.84
Auditor	9	7	14	3	6	9	17	25.00	5.0	3.50%	$16,462.36
City Council	0	1	3	0	0	6	0	5.00	0.0	0.64%	$2,820.40
Civil Service	1	1	12	1	1	6	1	15.00	5.0	2.19%	$9,548.16
Comp Serv *	3	5	8	1	3	7	28	400.00	5.0	5.24%	$0.00
Dispatch	10	25	2	3	11	9	10	100.00	0.0	2.03%	$11,755.22
Engineering	10	11	16	6	9	10	10	30.00	0.0	3.56%	$17,181.35
Fire	24	39	17	8	61	13	19	100.00	10.0	5.82%	$30,563.78
HRPC	6	8	14	2	8	9	6	15.00	0.0	2.78%	$13,162.31
Income Tax	9	9	15	7	7	7	9	30.00	10.0	3.63%	$17,204.22
Law Director	6	2	16	6	6	9	4	15.00	0.0	3.09%	$14,020.17
Mayor	8	8	13	3	4	9	4	35.00	0.0	2.79%	$13,419.52
Muni Court	41	34	19	19	29	13	34	310.70	20.0	8.91%	$45,108.04
NEAT (Removed)	0	0	0	0	0	0	0	0.00	0.0	0.00%	$0.00
Police	69	54	34	17	74	18	52	1200.70	25.0	18.78%	$91,846.54
PW - Cemetery	2	3	14	2	3	6	2	24.00	0.0	2.46%	$10,980.56
PW - Recreation/CUBE	9	11	15	4	7	10	11	60.00	0.0	3.56%	$17,081.57
PW - Streets	9	10	14	3	9	11	8	24.00	5.0	3.25%	$15,673.21
PW - Traffic Lights	1	2	12	0	3	5	2	10.00	0.0	1.97%	$8,708.76
HR Director	1	1	13	1	1	7	1	20.00	0.0	2.22%	$9,692.24
Safety Dir	2	1	13	1	1	8	1	24.00	0.0	2.31%	$10,195.47
Service Director	1	1	13	1	1	8	1	24.00	0.0	2.28%	$9,951.60
Treasurer	1	1	12	0	1	4	1	10.00	0.0	1.88%	$8,251.38
Water Billing	16	11	17	3	10	11	10	110.70	10.0	4.71%	$22,699.17
Water Dist.	4	5	15	2	13	10	5	24.00	5.0	3.14%	$14,285.01
Water Treatment	9	23	14	5	15	11	7	80.00	5.0	3.73%	$18,766.28
WORC (Removed)	0	0	0	0	0	0	0	0.00	0.0	0.00%	$0.00
WPC/Sewer Maint	11	15	16	5	19	13	10	120.00	0.0	4.35%	$20,983.79
Zoning	3	3	14	3	3	8	3	30.00	30.0	3.66%	$16,253.05
TOTALS *	268	295	379	107	310	244	261	2862.10	140.0	105.24%	$479,002.00

2019 Computer Services Budget (Less Internet/Phone)	$428,559.00
2019 Internet Charge	$24,000.00
2019 Phone Charge	$26,443.00
TOTAL 2017 Computer Services Budget Request	**$479,002.00**

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 ussage based on # of computers from total yearly internet charge

Phone = Phone ussage 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 = based on rele (some are split)

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

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