CITY OF FINDLAY

2020 ANNUAL REPORT

COMPUTER SERVICES DEPARTMENT

Introduction

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 60+ virtual servers (including an on-premise Exchange server, CAD servers, and GIS server), firewalls, L3 switches, and every desktop/laptop/tablet 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 provide basic operational support for various versions of Microsoft Office products such as word processing, spreadsheets, and calendar sharing.

Staffing

Information Services Manager (7 years' service time)

Network Administrator (6 years' service time)

Software Developer (.5 years' service time)

Help Desk Technician (.5 years' service time)

Key Activities & Accomplishments

Computer Services Applications & Equipment

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

Both physical and logical upgrades to the City's virtual infrastructure continued throughout the year, as well as major security patches. The Microsoft Windows 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 (within the United States) 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), 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) was replaced last year, with a new system through Esri. The former GIS server was phased out this year. A copy of the VHDX was made to a physical HDD, which was placed into long-term storage. The Esri GIS server stores and makes available the various Engineering mapping layers to city offices.

Two physical servers maintain control over the Municipal Building door locks, as well as the Camera system. The security camera system has been expanded with the addition of several more cameras to the Municipal Building, as well as 15+ cameras at remote office. Continued expansion of both the door lock system and security camera system to our remote offices is planned in the coming years. The fiber network will be utilized to move the data. Additionally, panic buttons were replaced with a new system this year that runs on a virtual server. This system integrates with the Camera system to allow first responders to get an immediate visual on the area where panic buttons are pressed. Computer Services maintain all of these systems, but keep a contract in place for support by dedicated providers of each system.

The Tyler New World servers controls the interfacing tools used for patrol car computer access to Ohio LEADS, and the Computer Aided Dispatching system via cellular cards on each system, among other things. 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 our use of Linux throughout the cluster as well, and have begun to standardize on CentOS / Redhat. While we do still have Ubuntu VM's running these will eventually be phased out for CentOS.

Some, but not all of the departmental software applications include: CMI - Utility Billing, eMIT - City Income Tax, Tyler New World Suite – Police, 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 dual fiber connections managed by Buckeye and Spectrum. Use of a cellular provided internet connection is being explored as a redundancy

Computer Services Activities

Our Hyper V failover cluster has been performing without issue, and as expected since its implementation. Replacement hosts were purchased towards the end of 2020, and will be implemented early 2021. RAM was significantly increased on the new hosts, as well as CPU to keep up with the growing demand of VM's being hosted. The fiber loop has maintained 100% up time throughout 2020, and redundant connections have been brought online for a majority of the links. TSC has performed underground locates, and have been called on at least once to repair a damaged fiber, they are also contracted to perform emergency services to the physical infrastructure. Each City building currently

has a minimum 10Gb connection back to the municipal building, which is well beyond current usage. The primary backup repository is maintained at our DR. site. User local storage has been redirected to server storage, and this data is now being backed up nightly. Storage space was increased to 140TB+ this year to accommodate this extra data, as well as allow increased range on archived backups. There is sufficient space to allow for the City's servers count to continue expanding. The VoIP phone system was upgraded to the most recent stable version this year. We experienced a couple issues shortly after deployment that resulted in some unscheduled down time. These issues were resolved, and the system has been stable since. Every City office is connected to a central phone system via the City's redundant fiber network. We brought in an additional SIP trunk provider in 2019, to two different physical locations. This vendor will be converted to our Primary SIP trunk provider, and the City will maintain a secondary provider as well, in the event of an ISP outage. We continue to maintain 3 analog phone lines through AT&T as "emergency backup lines" for use by Police dispatch in the event of a catastrophic failure of either equipment, or dual ISP's.

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, New World 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 are continuing use of the same AV vendor that we have utilized the past 2 years. Performance has been very good, and no major occurrence have happened since its implementation. The City has had no major virus incidents, and takes the utmost level of caution where any potential virus or intrusion attempt is observed. We have maintained, or improved all other security implementations in place. We ensure all end users complete annual security training to spot and report phishing emails among other items. We also test users periodically via several popular means of virus deployments. Any failure of these tests is taken as an opportunity to provide further training. We have performed several combs of our edge firewall rules, as well as UTM rules to remove anything no longer needed, and combine rules where beneficial. During 2020 Computer Services performed some "pen testing" on public facing connections. No weaknesses were discovered during these tests; however, it is something that continues to be scrutinized, and monitored.

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.

The Electronic Warrant program solution has continued to perform well, and is being expanded to allow for more types for warrants, and different scenarios. The solution allows judges to review, approve, and sign warrants electronically, from any internet connected device. Two factor authentication is utilized for any activity on this system, outside of the City's internal network. This is done without requiring the use of a VPN tunnel, so as to lessen the impact on these time sensitive matters.

All computer systems are running Windows 10 version 1909 or later. An issue was found when upgrading systems to 2004 that caused problems with Folder Redirection. Roll-out of this upgrade was paused until a hot-fix is available for this issue.

The Tyler New World system, which is a joint City/County CAD system utilized by the City PD, FD, Engineering, as well as County Sheriff and Jail staff has been Live for over a year now. We are still in the process of getting all data converted and imported from all legacy systems, but plan to have this completed by January 2021. This system utilizes 16 virtual servers that Computer Services works closely with Tyler to maintain and keep things as stable and fast as possible. We also work jointly with County IT staff in order to allow network communication via fiber for County Sheriff office to connect into this system. County IT personnel are able to create and remove County employee accounts from our AD infrastructure via a web-interface. This reduces the load on City IT staff for maintaining County employees. In the future, we may explore the possibility of setting up a trust between our domains to allow county users to use County AD accounts to login to City resources.

A majority of our virtual infrastructure, resides on Solid State storage. Approximately 15TB of solid-state drives are in use on City SAN devices. All hosts were upgraded to multi-port 10Gb ethernet for SAN traffic, which helped eliminate another bottleneck in our virtual environment. We plan to migrate to a hyper-converged infrastructure in 2021. Our goal is to us all flash storage across multiple sites to allow for maximum speed and redundancy.

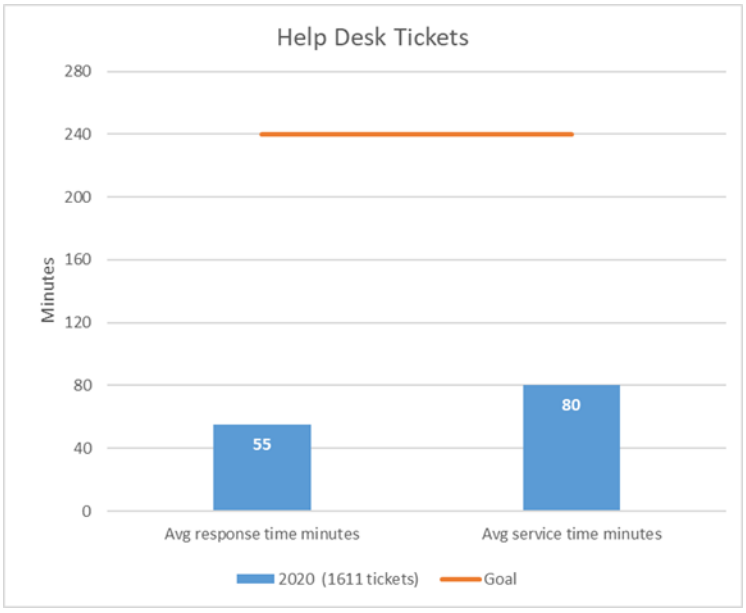
The security camera system was expanded during the year. Additional cameras were added in the Municipal building, and additional features were added to the software, including Smart Wall functionality. The camera system was also integrated with the panic buttons, that allow screens to automatically show cameras in the vicinity of panic button presses. The camera server has been performing flawlessly since go-live, and was also upgraded to the latest version of software. There is still significant room for expansion of the system without needed hardware upgrades. An offsite storage system for recorded video has been planned, but is not currently in place. The camera system will utilize the City owned fiber loop to propagate this service to all of our remote offices in the future. This will eliminate the need for multiple servers at each location, and will streamline Dispatch, and Police department access to all cameras. The old camera system was removed, along with all the old analog cameras. The entire system was auctioned on Govdeals, and removed from the Municipal Building. Removal of this system caused an inadvertent issue with the old panic buttons that were hardwired into

the camera system. This was resolved with a new power supply for the panic button system

The new desktop replacement strategy was interrupted due to the pandemic. Administration asked all departments to hold off on spending where possible, so a large order was not placed. We instead replaced computers individually as they began to show issues, or fail. We hope to switch back to our regular replacement strategy in 2021

This year saw many changes due to the COVID-19 pandemic. Use of the City VPN was greatly expanded during 2020 as many employees have been working remotely due to the pandemic. We were able to obtain additional licenses, and upgrade virtual equipment to facilitate this added demand. Many processes were changed within our office and new rules put into place in the Computer Services office to ensure a safe environment for our employees. Since early March 2020 Computer Services employees have been working from home when possible. We keep at least one employee on-site at any given time, but try to staff two in the office. Employees are required to stay in offices with doors closed unless wearing masks. A new policy for sanitizing equipment and wearing PPE when interacting with end users has also been put into place. We are confident this strategy will ensure minimal chance of spread within our office, or from our employees to other City users.

Key Performance Indicators (KPIs)



More details on Key Performance Indicators can be found at:
www.findlayohio.com/performance

Objectives for the Next Year

All physical systems that can be virtualized have been completed. We will continue to maintain physical servers where necessary, including a domain controller, Camera system, backup repositories, etc. We will also continue to advance the security of our network.

The VoIP phone system will continue to be fully administered by Computer Services staff, with support from the PBX vendor.

Plans for DR site implementation in 2020 were once again delayed, this time due to the pandemic and other major projects. We do still have funding in place for the implementation of a fully functional DR site within the City. We have begun the process with the obtaining of a dedicated room at the Cube for a server rack. We will continue implementation in 2021, as well as an update the 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 redundant link of the Fiber loop has been brought online for a majority of our sites and we will continue to bring the remaining sites on in 2021. 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. Antennas have been placed on each water tower already. The remainder will be done at minimal expense and will provide emergency connectivity in the event of a catastrophic failure of the fiber loop.

We will be switching the City's virtual infrastructure to an all flash hyperconverged system in 2021. Two servers have already been purchased, along with the needed software to begin this project. This will provide a significant increase in speed to our environment and eliminate the need to tier storage based on use cases. We are hopeful this transition can be completed with little to no downtime to the virtual infrastructure.

Network security will continue to be an important initiative. We have plans to begin replacement of the UTM with an updated system. This will likely be a multi-year process due to the complexity and scale of the system. 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.

Budget Summary Sheet

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, phones, printers, cloud faxing, 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.

DEPARTMENT	Computers	Phones	Cloud Fax	Servers	Printers	Users	Apps	Internet	Proj Hrs	Prog. Units	Usage %	Budget Amt
Airport	5	4	0	18	1	5	7	5	24.00	5.0	2.68%	$13,597.73
Auditor	11	7	0	18	3	6	10	17	100.00	5.0	3.70%	$19,212.03
City Council	0	1	0	14	0	11	6	0	24.00	0.0	1.88%	$9,139.05
Civil Service	1	1	0	17	1	1	6	1	24.00	5.0	2.33%	$11,350.88
Comp Serv *	7	6	0	8	1	4	7	28	400.00	5.0	4.29%	$0.00
Dispatch	11	25	0	41	3	11	15	10	124.00	0.0	6.11%	$32,754.57
Engineering	15	11	0	21	6	8	10	10	54.00	0.0	3.64%	$19,610.79
Fire	27	39	0	36	8	66	13	19	180.00	10.0	7.20%	$40,531.76
HRPC	6	8	0	18	2	7	9	6	28.00	0.0	2.70%	$14,239.25
Income Tax	11	9	1	19	7	11	7	9	54.00	10.0	3.51%	$19,104.16
Law Director	3	2	0	18	6	2	9	4	39.00	0.0	2.73%	$13,514.27
Mayor	8	8	0	20	3	3	9	4	100.00	0.0	3.32%	$17,336.20
Muni Court	53	44	2	28	19	32	13	34	400.00	25.0	9.01%	$52,529.22
NEAT (Removed)	0	0	0	0	0	0	0	0	0.00	0.0	0.00%	$0.00
Police	79	54	0	46	17	73	18	52	250.00	25.0	11.39%	$65,470.60
PW - Cemetery	2	3	0	17	2	3	6	2	24.00	0.0	2.28%	$11,412.21
PW - Recreation/CUBE	14	11	0	18	4	7	10	11	84.00	0.0	3.43%	$18,519.58
PW - Streets	9	10	0	17	3	9	11	8	24.00	5.0	2.92%	$15,658.66
PW - Traffic Lights	2	2	0	17	0	3	5	2	24.00	0.0	2.20%	$10,916.03
HR Director	1	1	0	17	1	1	7	1	24.00	0.0	2.22%	$10,835.66
Safety Dir	2	1	0	17	1	1	8	1	24.00	0.0	2.27%	$11,154.04
Service Director	0	0	0	0	0	0	0	0	0.00	0.0	0.00%	$0.00
Treasurer	1	1	0	17	0	1	4	1	2.00	0.0	1.99%	$9,753.69
Water Billing	16	11	0	23	3	10	11	10	134.00	10.0	4.52%	$23,922.16
Water Dist.	9	5	0	21	2	13	10	5	24.00	5.0	3.24%	$16,681.26
Water Treatment	9	23	0	20	5	15	11	7	800.00	5.0	7.47%	$38,982.60
WORC (Removed)	0	0	0	0	0	0	0	0	0.00	0.0	0.00%	$0.00
WPC/Sewer Maint	12	15	0	17	5	19	13	10	144.00	0.0	3.72%	$20,266.85
Zoning	5	3	0	18	3	3	8	3	54.00	30.0	3.53%	$17,609.75
TOTALS *	319	305	3	541	106	325	243	260	3163.00	145.0	104.29%	$534,103.00

2020 Computer Services Budget (Less Internet/Phone/Fax)	$480,523.00
2021 Internet Charge	$32,820.00
2021 Phone/Fax Charge	$18,960.00
2021 Cloud Fax	$1,800.00
TOTAL 2021 Computer Services Budget Request	**$534,103.00**

2021 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

* 648 of the total Project Hours are shared equally by the 27 Departments

Programming Units to maintain their custom application = 5 points per application (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