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

Staffing for the office consists of:

Information Services Manager (8 years' service time)

Network Administrator (7 years' service time)

Software Developer (1.5 years' service time)

Help Desk Technician (0 years' service time)

Key Activities &

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 multiple 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) is hosted internally on a VM, utilizing Esri software. The former GIS server is still running for legacy applications but is in the process of being decommissioned. 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 door lock system was replaced with upgraded hardware late this year due to a failure. 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. Plans were made for a large expansion of the camera system for the remote offices in 2022 as part of a capital project. The fiber network will be utilized to move the data between remote sites and the municipal building. All remote cameras will include on-board storage as a backup for any network related outages. Several more panic buttons were added throughout the Municipal building this year, and a process of adding panic buttons to desk phones is being investigated. This panic button 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 received a major upgrade in 2021, all hosts have been replaced with all flash servers, and are running on a hyperconverged platform. Performance received a significant boost over the Server / SAN configuration that had previously been in place. Former primary SAN devices are now being utilized as replication storage, and VM's can be run directly from these devices in the event of primary storage failure. There were a few issues related to the migration to the new system that caused slow downs on the hosts, but these were quickly resolved.

The fiber loop has maintained 100% up time throughout 2021, redundant connections have been tested and confirmed working via hard fiber disconnects. We still have two sites that do not have redundant links active, due to a suspected splice failure. This will be investigated by the vendor that maintains our fiber plant. Each City building currently has a minimum of dual 10Gb links back to the municipal building, which is well beyond current usage.

The primary backup repository is maintained at our DR site. This site received some major updates including a new server rack installed in a dedicated temperature-controlled room. A new monitored UPS system and environment monitors have also been added. A new host matching the hosts currently in use at the municipal building was also ordered for this site. This host will be synchronized with the primary hosts, and will be able to run a large majority of City VM's in the event the municipal building is unusable.

User local storage has been migrated to the primary cluster and is backed up on a regular basis. Backup storage space continues to be need expansion, currently all available drive capacity has been used in the current repository hardware. There is sufficient space to continue throughout the coming year but a new server with larger capacity will need to be investigated for 2023.

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 have been making strides toward further network segregation, each implementation of a new server has been installed on its own segregated network with least privilege principals in place. We are continuing use of the same AV vendor that we have utilized the past 3 years. Performance has been very good, and no major occurrence have happened since its implementation. The City 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 2021 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. A new public facing rendition of the NEAT site has been completed and ready for release. The site is hosted on a separate DMZ system to eliminate a potential security risk, all data stored on this server is publicly accessible. The site go-live is pending approval of the zoning department. Requests have been made to bring additional departments into the NEAT program, scenarios for this are being investigated. 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 via encrypted connections (https) which does not require the use of a VPN tunnel, and lessens the impact on these time sensitive matters.

A large push was completed to bring all City desktops, laptops, and tablets to the most recent version of Windows 10, we are currently running version 21H2 or later. A new solution for patching OS, third party software, and firmware is being tested with plans to deploy early 2022.

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 3 years now. A VPN tunnel was added to Allen County that allows sharing of data in this system between entities. The system is regularly updated and new features are being brought online throughout the year. 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.

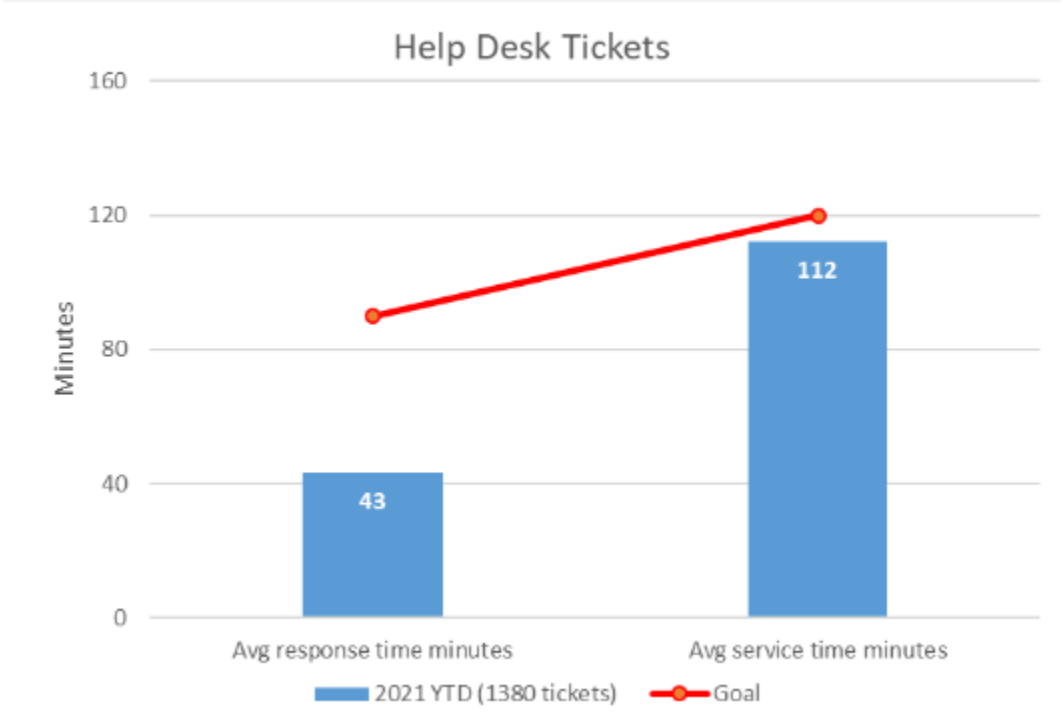
The security camera system was expanded further this year. Additional cameras were added in the Municipal building, as well as cameras at our Water Treatment plant, and Utility Billing office. These cameras were integrated with the panic buttons, that allow screens to automatically show cameras in the 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.

A large batch of new desktops was purchased this year as we returned to our standard replacement schedule. We were able to receive a great price reduction for the bulk order. Systems were deployed by our Help Desk Technician utilizing an MDT server for imaging.

The Audio equipment in Council chambers received a complete overhaul by computer services as well. Faulty microphones were replaced, microphone wiring was resoldered under desks and new connection boxes were installed. In the AV closet, all equipment and racks were replaced. We were able to utilize a half-rack that was decommissioned by 911, in it we installed a new mixer, amplifier, wireless Mic setup, power cleaner, and desktop computer for recording/streaming from council chambers. It took some time to get everything equalized and configured, but audio in Council Chambers is now consistent, and working as it should.

The help desk technician position was vacated near the end of 2021, and was filled early in December, so we continue to maintain a staff of 4 full time employees. As our workload, and new projects continue to expand, the help desk technician has been integral in maintaining day to day operations allowing our Network administrator, and Software Developer to focus on their specialties.

Key Performance Indicators (KPIs)



More details on Key Performance Indicators can be found at:

www.findlayohio.com/performance

Objectives for the Next Year

We plan to migrate to a new virtual infrastructure in 2022, which will provide more enterprise grade features and support. We will make a push to upgrade remaining server 2012rs systems and 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.

Our DR site will continue evolving, and will hopefully be to the point of live production testing. This site will be the lifeline for the City network in the event of a disaster at the municipal building, ensuring we can continue to operate and provide services to the public. We hope to make needed repairs to the redundant links on the fiber plant to the two remaining offices, and fully test the redundancy.

As part of DR planning, a supplementary wireless connection will be built out to each site. Antennas have been installed on each water tower and antennas have been purchased for each remote office to connect to these antennas. We hope to have these deployed in the spring of 2022, this will provide emergency connectivity in the event of a catastrophic failure of the fiber loop.

A large security camera project will see installation of new cameras at all of our remote offices, as well as parks and other outdoor areas. This project will be overseen by the computer services department, and cameras will be integrated into the existing 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.

TABLE A-1

DEPARTMENT	Computers	Phones	Cloud Fax	Servers	Printers	Users	Apps	Internet	Proj Hrs	Prog. Units	Usage %	Budget Amt
Airport	4	4	1	18	1	5	7	5	18.00	5.0	2.77%	$15,647.88
Auditor	11	7	1	18	3	6	10	17	80.00	5.0	3.79%	$21,836.29
City Council	0	1	0	14	0	11	6	0	20.00	0.0	1.96%	$10,659.36
Civil Service	1	1	0	17	1	1	6	1	5.00	5.0	2.35%	$12,810.93
Comp Serv *	7	6	0	8	1	4	7	28	400.00	5.0	4.53%	$0.00
Dispatch	11	25	1	41	3	11	15	10	150.00	0.0	6.60%	$38,460.61
Engineering	15	11	1	21	6	8	10	10	40.00	0.0	3.77%	$22,264.67
Fire	27	39	1	36	8	66	13	19	100.00	10.0	7.15%	$43,622.17
HRPC	6	8	0	18	2	7	9	6	5.00	0.0	2.73%	$15,735.28
Income Tax	11	9	1	19	7	11	7	9	100.00	10.0	3.96%	$22,920.44
Law Director	3	2	0	18	6	2	9	4	5.00	0.0	2.69%	$14,848.32
Mayor	8	8	1	20	3	3	9	4	80.00	0.0	3.40%	$19,601.30
Muni Court	53	44	2	28	19	32	13	34	100.00	25.0	7.81%	$49,311.70
NEAT (Removed)	0	0	0	0	0	0	0	0	0.00	0.0	0.00%	$0.00
Police	79	54	2	46	17	73	18	52	100.00	25.0	11.18%	$69,898.82
PW - Cemetery	2	3	0	17	2	3	6	2	5.00	0.0	2.30%	$12,781.04
PW - Recreation/CUBE	14	11	1	18	4	7	10	11	20.00	0.0	3.26%	$19,456.93
PW - Streets	9	10	1	17	3	9	11	8	20.00	5.0	3.06%	$17,999.64
PW - Traffic Lights	2	2	0	17	0	3	5	2	5.00	0.0	2.22%	$12,238.96
HR Director	1	1	0	17	1	1	7	1	5.00	0.0	2.24%	$12,200.53
Safety Dir	0	0	0	0	0	0	0	0	0.00	0.0	0.00%	$0.00
Service Director	2	1	0	17	1	1	8	1	5.00	0.0	2.29%	$12,566.70
Treasurer	1	1	0	17	0	1	4	1	2.00	0.0	2.11%	$11,498.58
Water Billing	16	11	1	23	3	10	11	10	200.00	10.0	5.15%	$29,802.97
Water Dist.	9	5	0	21	2	13	10	5	100.00	5.0	3.86%	$21,754.01
Water Treatment	9	23	1	20	5	15	11	7	500.00	5.0	6.19%	$36,003.21
WORC (Removed)	0	0	0	0	0	0	0	0	0.00	0.0	0.00%	$0.00
WPC/Sewer Maint	12	15	1	17	5	19	13	10	80.00	0.0	3.57%	$21,365.97
Zoning	5	3	0	18	3	3	8	3	30.00	30.0	3.60%	$19,937.69
TOTALS *	318	305	16	541	106	325	243	260	2175.00	145.0	104.53%	$585,224.00

2022 Computer Services Budget (Less Internet/Phone/Fax)	$539,024.00
2022 Internet Charge	$25,200.00
2022 Phone/Fax Charge	$18,960.00
2022 Cloud Fax	$2,040.00
TOTAL 2022 Computer Services Budget Request	**$585,224.00**

2022 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
* 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 separately based on the actual yearly cost of each service, and the actual number of users and Phones