Gary Coy:

The Chrome “Flex” Operating System
Established in 1976, DMA is a group of Dayton-area professionals and enthusiasts in the field of computing and digital information technology. General Membership Meetings are usually held on the last Tuesday of each month. DMA has a number of Special Interest Groups (SIGs) in areas ranging from digital investing and genealogy to the Linux operating system. Each SIG meets according to its own schedule. DMA is a member of the Association of Personal Computer Users’ Groups (APCUG) and the Affiliated Societies’ Council (ASC). Click on any of the logos—including our own (top left)—to go to that organization’s Web site.

Submissions ...

The DATABus welcomes compliments, complaints, suggestions, and especially articles. We can accept articles in ASCII, or as attachments in plain text, Microsoft Word, Open or Libre Office Writer, or, yes, even in WordStar (a word-processing program that goes back to about 1980!). Send articles to:

Editor@DMA1.org

All articles are subject to editing for spelling, grammar, usage, and space. Retain a copy of your work, as THE DATABus cannot be responsible for loss. When articles are of roughly equal quality and importance, those by paid-up DMA members receive preference.

All registered trademarks, for example: the DMA Arrow, APCUG, Samsung, WordFence, YouTube, or ZOOM, are the property of their respective owners. However, the Registered Trade Mark symbols (® or ™) have been omitted for better readability. The Editor occasionally inserts comments into articles. Such comments are sometimes preceded by the phrase: “EDITOR’S NOTE,” are often in square brackets [like these], and are always in sans-serif type, like these paragraphs.

THE DATABus is written and published by volunteers. We do not give professional advice on hardware, software, or network installation, repair, security, or troubleshooting. If you need expert assistance or repair for your digital device or network, please seek the advice or services of a qualified professional.
April Meeting: 7:00 p.m., Tuesday, the 26th
No Driving—No Charge*

* This is a “hybrid” meeting: via Zoom, but also in person. Come at 6 p.m. if you wish to join us in person for dinner at T. J. Chump’s Restaurant in suburban Huber Heights, next door to the Meijer’s Supermarket. Click here for a map. The restaurant has free parking. It is also accessible via RTA bus routes 18 and 19, but there is a short walk from the bus stop in the Meijer’s department store parking lot to the restaurant.

Gary COY:
The Chrome “Flex” Operating System

October 2025 spells the end of support for the Windows 10 operating system (OS). Many of the computers we are currently using cannot be upgraded to Windows 11. Google has been developing an easy work-around, a way to continue using those PC and Mac machines. In February, Google introduced a new version of its Chrome Operating System, a trial version called Chrome OS Flex. This is a “cloud-first” OS that is free to download and either try or install on almost any PC or Mac. It is well worth taking a look. The stable release is expected some time before July.

Gary Coy is the current President of DMA, a Trustee, and frequent presenter. He is also VP of the NASAC user group. Gary has over twenty years’ experience in the electronic and computer industry. He currently works for the Speedway Corporation as a customer service claims specialist. Gary serves as a volunteer and part-time EMT. He offers computer tech support through his own company, “Gary’s Computers”.

Our meeting starts at 7:00 p.m. DMA members will receive an invitation by e-mail for Zoom. Others may request an invitation by using:

http://www.dma1.org/contact-us/
CALL TO ORDER
The meeting was called to order at 7:02 p.m. by Gary Coy, via Zoom.


OFFICERS’ REPORTS
President – Gary Coy
Our February meeting was a collection of videos on Cryptocurrency and Blockchain. The videos played well over Zoom, but there were problems producing enough sound volume for those listening at TJ Chumps.

Vice President – Edwin Davidson
The Single Board Computers (SBC) SIG and the Network SIG both met in February.

Secretary – Pat Flynn, Glady Campion
Glady presented minutes for the February board meeting. Dave Schwab moved the minutes be accepted. Ed Skuya seconded and the motion passed with Glady abstaining.

Treasurer – Glady Campion, Pat Flynn
Pat presented a report for February.

COMMITTEE REPORTS
Audit – Glady Campion
In progress

Fund Raising – Peter Hess
Peter sent a letter to APCUG about the Computer Museum. He requested an e-mail alias for APCUG-rep@dma1.org.

(Continued on page 5)
Peter is asking for crowd funding for the museum. There are 3 or 4 crowd funding tools available.

**Marketing** – Peter Hess, Edwin Davidson, Pat Flynn, Debra McFall, Catherine Devlin

Peter posted details of our general meeting to Meetup.

**Membership** – Glady Campion

At the current time, we have 46 Regular, 4 Associate, 0 Student, and 5 Lifetime members for a total of 55. Attendance for February was 25, with 11 in person at TJ Chumps.

Kathleen Kannik won the Aukey KM-G12 backlit mechanical keyboard. Roy Smith snagged the Google Home Mini. Ed Skuya picked up a Wenger Beta 14 laptop sleeve.

**Net Administration Team** – Ken Phelps, Gary Turner, Pat Flynn, Brent Kerlin, Mark Camden

Mark explained the updates to the “Contact Us” page and changes to info@dma1.org to improve message handling.

**Programs** – OPEN!

Thanks to Gary Coy for acting as MC for the videos on Cryptocurrency and Blockchain for the February meeting.

There was a suggestion for a future meeting on The Tarnished Side of Cryptocurrency.

Evolv Technology was suggested as a topic. They provide touchless security. Evolv Express spots concealed weapons and other threats using digital sensors and AI. EvolveTechnology.com

Other suggestions include “Pandemic Technologies” and “How to handle DMA shell accounts”

We still hope to schedule talks on MetroNet fiber internet and possibly Generac.

Trustees also suggested talks about installing Linux on a Google Chromebook, or running Linux on the Windows subsystem for Linux (WSL), or even installing Windows on a Linux Virtual Machine.

**Publications** – Martin Arbagi

The DataBus was posted for February.

**UNFINISHED BUSINESS**

**Wright State Archives** – Martin Arbagi, Glady Campion

Still in progress

**Next Board Meeting**

Next Board Meeting will be 7:00 p.m. on Monday, April 4, 2022. We shall continue to use Zoom.

**List of DMA accounts** – Glady Campion

Still in progress

**Computer Museum** – Peter Hess

Edwin talked to us about Wright-Dunbar.org, a nonprofit for managing the West Third Street Historic District.

Suzette and Roy are offering 1500-2000 square feet of office space on Taywood Road for a very generous rate. They are also donating three desks and a few pieces of office machinery. Peter is inviting the Computer Museum Team to tour a possible building location to compile and fully document all of our present museum exhibits from temporary storage in about six members’ homes. The van donated by Suzette and Roy does run. Peter is working to have the title switched to DMA. Peter asked that Suzette and Roy be added to the e-mail alias for the team planning the Computer Museum.

Peter is also asking for a Computer Museum page to be added to our Web site.

(Continued on page 6)
Help DMA by using Amazon’s Smile program!

Amazon, the Internet’s largest retailer (if you haven’t noticed, Amazon isn’t just for books any more!) has a “Smile” feature whereby Amazon donates a percentage of almost any purchase you make to a selected nonprofit organization. There is no extra cost to you. Click here to learn more or here to go directly to the sign-up page. Be sure to put DMA down as the beneficiary of your purchases.

(MARCH TRUSTEES’ MINUTES—Continued from page 5)

He is also asking for a second, smaller banner for the Computer Museum.

Stephen Frey has arranged to do a presentation about the museum for the Barn Gang at the Dayton Engineers’ Club on March 29. He is also working on a presentation in May at the Air Force Museum.

DMA Phone Number – Debra McFall

Pat Flynn is running into problems trying to port the DMA phone number to Number Barn. He will continue troubleshooting the process.

VOLUNTEER OF THE MONTH/QUARTER/YEAR

Mark Camden was nominated for Volunteer of the Month for his work on understanding the workings of Dreamhost.

ADJOURNMENT

Edwin Davidson moved to adjourn at 9:34 p.m. Dave Schwab seconded and the motion passed with no one abstaining.

Respectfully Submitted,

Glady Campion,

… Secretary
Patronize Our Member–Advertisers!

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Computer Technician
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Springfield, Ohio 45502
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gcoy@woh.rr.com
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www.whitewatervalleyrr.org
Solid State Drives – What’s New

By Tom Burt, Vice-President
Sun City Summerlin Computer Club
https://www.sescc.club
tomburt89134 (at) cox.net

Solid State Drives (SSDs) have been around for quite a while. However, prices have come down while capacities and performance have gone up. As a result, adding an SSD to an existing system has gone from being a luxury to a practical way to increase the performance of a desktop or laptop significantly.

SSD capacities have grown from 32 GB to 64 GB ten years ago to 256 GB, 512 GB, and 1 TB today. So if you’re flush with cash, you can even get a 2 TB SSD.

A majority of SSDs are sold as 2.5-inch drives with a SATA controller and power supply. These drives look to PC hardware and software just like a regular hard disk drive. Most SATA SSDs are rated as SATA III, which can deliver data between the drive and the motherboard at 6 billion bits per second.

Sequential read/write speeds are now up in the range of 500 Megabytes per second for top-line SATA III drives. In addition, for random I/O, high-end drives are rated at up to 100,000 input/output operations per second. This makes SATA SSDs about three times faster than hard disk drives.

Two new SSD PCIe card form factors have begun to supplant the SATA format in the past five years. One is a small card that combines flash memory chips and a SATA controller. It plugs into a special M.2 socket on the motherboard. To the PC’s CPU, it appears as a secondary SATA controller. These cards are recognizable because they have two notches (B+M) in the connector end. Performance is comparable to a 2.5 inch SSD, but the card takes up much less space and uses less power. As a result, these are now popular in laptop PCs.

The second new form factor is called NVME (Non-volatile Memory Express). An NVME SSD does not include a SATA controller; it is directly connected to the PCIe data bus of the motherboard via a simple memory controller interface. The NVME SSD card also plugs into an M.2 socket on the motherboard. The NVME SSD card only has a single notch (M only) in the connector end.

For more details on the M.2 slot, see the following: https://www.howtogeek.com/320421/what-is-the-m.2-expansion-slot/

Top-line NVME SSDs like the Samsung 980 Pro above can read data at up to 7000 megabytes (56 gigabits) per second if installed on a motherboard supporting PCIe 4.0. This is about 12 times faster than a SATA hard drive. The 1TB 980 Pro unit retails for about $200. A mid-range unit like the 1TB Samsung 970EVO retails for about $140 and can read at up to 3500 megabytes (28 gigabits) per second.

The significant performance difference in SSDs is that they can instantly access a block of data anywhere in the drive’s memory. By contrast, a hard disk drive must position the read/write heads to the correct track and then wait for the desired block to rotate under the heads. This access time can take up to 10 milliseconds or more – easily 5,000 times longer than the

(Continued on page 12)
Single Board Computer Special Interest Group

By Dave Schwab, KE8DOC

The joint Dayton Microcomputer Association and Dayton Amateur Radio Association Single Board Computer SIG met at the DARA B-road facility on April 9th. The project of the day was to install the Build-a-Pi software from KM4ACK. Build-a-Pi is a menu based installer for a large number of popular amateur radio software packages.

We had problems with the first install due to changes in European Union Cyber Law. As we were using a newly installed download of the Raspberry operating system which can not have a default user and password. The Build-a Pi script uses the Raspberry OS default user home path ( /home/pi ) to install the software. The Linux based Raspberry OS builds a home directory with the user name. So if you use a user name other than the old default (Pi) the Build-a-Pi install will error. After making a new user named Pi everyone was able to install Build-a-Pi.

An e-mail from Jason KM4ACK stated that he is aware of the problem. It will take some time to modify the Build-a-Pi script.

The Single Board Computer SIG will not have a May meeting. Just too hectic the week before Hamvention.

Editor’s Note: Much — some would say most — of DMA’s activities are in its Special Interest Groups, or SIGs. We’d like to see more reports like this one from individual SIGs. ... TDB
DMA Calendar of Events, 17 April through 21 May 2022.

(Click anywhere on the calendar for the fully updated version at our Web site.)

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Have a business card? Are you a DMA member?

Any paid-up member of the Dayton Microcomputer Association is entitled to a free business card–sized advertisement in The DataBus. Send a good–quality image (600 dpi or better) to Editor@DMA1.org, or give your business card to Martin Arbagni, the Editor, at any DMA meeting. We can embed a link to your Web site (if you have one) within the image of your card. Under weird IRS regulations, your Web site may not include discount coupons for DMA members, although discount offers may be included in the advertisement itself.

Help DMA by using Amazon’s SMILE program!

Amazon, the Internet’s largest retailer (if you haven’t noticed, Amazon isn’t just for books any more!) has a “Smile” feature whereby Amazon donates a percentage of almost any purchase you make to a nonprofit organization that you select. There is no extra cost to you. Click here to learn more or here to go directly to the sign-up page. Be sure to put DMA down as the beneficiary of your purchases.
SSD. In addition, the newer NVME SSD cards can transfer data 6 to 12 times faster than a SA-TA drive can.

Upgrading a PC to use an SSD can take either of two routes: adding the SSD to an existing desktop PC while keeping the PC’s original hard drive installed; the second is to replace the PC’s hard drive with an SSD. For a laptop, the second approach is the only practical one; there isn’t room in the laptop for two drives. However, the first approach may be more satisfactory for desktops since it combines high performance while not forsaking high storage capacity. For example, you can use the SSD to store the operating system, applications, and very frequently accessed data files and then use the much larger hard disk drive to store all your other documents: photos, music, videos, and such.

Most new motherboards come with at least one M.2 connector, so adding an NVME or SA-TA M.2 SSD is possible if you’re building a PC desktop tower. In the image at the right, there are screw holes for three different lengths of M.2 card. 80 millimeters (the one with the screw and the red arrow pointing to it) is the commonest. For commercially-made brand-name desktops, you may have to go with a 2.5 inch SA-TA III drive connecting via a SATA cable to one of the SATA ports on the PC’s motherboard. In a laptop, that will also likely be the case; you will replace the laptop’s hard drive with a 2.5 inch SATA SSD. However, for a desktop without an M.2 connector, you can also buy a PCIe to M.2 adapter card that has an M.2 connector on the card and plugs into a PCIe slot on the motherboard. These adapters cost $10 to $15.

For a tutorial on installing an M.2 SSD, see the following:

https://www.techradar.com/how-to/how-to-install-an-m2-nvmesata-ssd-on-your-pc.

In upgrading to an SSD, you will need to consider whether to reinstall your operating system (Windows, Mac OS, possibly Linux) and applications from scratch or attempt to copy (clone) your existing system to the SSD. If you wish to copy your current hard drive’s system, you will need an imaging or cloning tool such as Acronis True Image, Casper, or Macrium Reflect. The challenge is to get the size of your operating system’s hard disk partition to be no larger than the size of your new SSD. There are many complications related to this, and details are beyond the scope of this article. However, you might want to stop by our Tuesday Hardware / Software Repair SIG and get some advice before diving into an SSD upgrade.

If you’re now convinced, an SSD is the way to go, what’s the best size and make to buy? Lower-end SATA drives are often on sale for about 12 cents per gigabyte. These drives are OK but may not be as fast as the top-end drives. Higher-end drives are selling for about 20 cents per gigabyte. The Samsung EVO series drives get very high ratings and have some of the best performance specs at very good prices.

Other brands are good also but read the recent reviews carefully. A few years ago, some vendors got good initial reviews on their solid-state drives and then switched to cheaper, slower memory chips. Check the usual on-line stores (Amazon.com, NewEgg.com, TigerDirect.com) and watch for sales. A 500 GB drive is very attractive at current prices, and you will most likely not run into capacity problems.

... TDB
ABOUT THE DAYTON MICROCOMPUTER ASSOCIATION, INC. (DMA)

By Peter Hess, DMA President, 2018-2020

About forty-six years ago, a small group of computer enthusiasts from the Dayton, Ohio area gathered around a kitchen table looking at, and playing with, an early personal computer called the Altair 680 that one of them had purchased. This computer had been featured earlier on the cover of the January 1975 issue of Popular Electronics magazine. Paul Allen had shown the selfsame article about Altair to Bill Gates, and they wrote software together for that computer. Still later — and still together — Allen and Gates founded the Microsoft Corporation.

Shortly thereafter, those Dayton-area computer enthusiasts joined with many others to form The Dayton Microcomputer Association (DMA), now one of the oldest (if not the oldest) continuously operating computer user groups in the world. Typically, computer user groups, and the newer iteration, technology user groups, are volunteer-run operations. The DMA is an all-volunteer led, organized, and run 501(c)(3) non-profit organization.

Now, there are hundreds of computer (or technology) user groups in the world, all of which continue to foster improved communication between technological equipment and software publishers, and users of their products. User groups (both computer and technology) provide an environment where more experienced technology users introduce additional and advanced techniques to novices.

DMA offers both monthly General Membership Meetings, which cover new and innovative topics including a wide range of generic technological topics, and its Special Interest Groups (SIGs) which address concerns about specific technology interests. There are eight different SIGs sponsored by the DMA, covering such topics as the Linux operating system, various programming languages such as Python, the use of technology to investigate genealogy, and digital aids to investing. Neither SIG members nor attendees at DMA General Meetings need be members of the parent organization, though they are encouraged to join so DMA can continue providing its services to the public.

Annual dues for DMA membership, which have not been raised for decades, are $25 for Regular Members, and $12.50 for Family/Associate Members (someone living at the same address as a Regular Member). Nonvoting Student Memberships are free to students through age 22. Door prizes at General Meetings, picnics, banquets, and other DMA events, and both product and service discounts are available to all DMA members.

... TDB
Dayton Microcomputer Association Membership Form

☐ NEW Please credit the DMA member who recruited me: ________________

☐ RENEW Contact information below is new ☐ Y ☐ N

☐ REGULAR
Name __________________________________________ Home / Work (____) ___-_____
Email ______________________________________ Mobile Phone (____) ___-_____

☐ ASSOCIATE Family Associate membership is for a family member living at the same address as a
Regular member. Name of Regular member: ______________________________________
Name __________________________________________ Home / Work (____) ___-_____
Email ______________________________________ Mobile Phone (____) ___-_____

☐ STUDENT Free Student membership is available to those under 22 years of age, enrolled full-time in a
program of higher education. Name of School: ________________________________
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Skills & interests you might share with DMA __________________________________________
What you hope DMA will provide _______________________________________________

☐ SHELL ACCOUNT A shell account on the DMA web server provides file storage, hosting of a personal
non-commercial website, @dma1.org email alias (forwarding address), all for a one-time fee of $10. A username
must be 8 alpha characters. The usual default is last name and first initial, no caps or punctuation. DMA reserves
the right of final decision on all usernames: 1st choice __________________________ 2nd choice

DUES AND FEES
Regular membership $25.00 x ☐ 1yr ☐ 2yr ☐ 3yr $_____
Family Associate membership $12.50 x ☐ 1yr ☐ 2yr ☐ 3yr $_____
Student membership FREE $ 0.00
One-time setup fee for Shell account $10.00 $_____
Total __________________________________________________________ $_____

*Note: $10.00 fee will be charged for any returned checks

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Mail check and application to: PO Box 4005
Dayton OH 45401-4005

Or use Paypal to send your payment to: membership@dma1.org

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Revised February 25, 2020