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Toys I got for Christmas!

The Databus

Monthly Newsletter of
The Dayton Microcompter Association

Volume X, N°. 1
(New Series)
January 2020

Post Office Box 4005
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Visit us at:
DMA1.org

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* = *Newly elected or reëlected*

Webmasters:

Mark CAMDEN
& Brent KERLIN
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Dave LUNDY

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.

An International Association of Technology & Computer User Groups

Submissions ...

THE DATABUS welcomes compliments, complaints, suggestions, and especially articles. We can accept articles in ASCII, or as attachments in Microsoft Word, Open or Libre Office Writer, or, yes, even WordStar (a word-processing program that goes all the way back to about 1980!). No PDF files, please. Send articles to:

Editor@DMA1.org

All articles are subject to editing for spelling, grammar, usage, and space. Always 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.

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 for your digital device, please seek the advice or services of a competent, certified professional.

January Meeting: *7:00 P.M., Tuesday, the 28th, at T. J. Chump's, 7050 Executive Boulevard, Huber Heights 45424 (next door to Meijer's — click here for a map). Come at 6 if you want to join us for dinner. There's plenty of free parking. (Chump's restaurant is also accessible via RTA bus routes #18 & 19, but you must take a short walk from the Meijer's supermarket parking lot.)*

Free parking—No charge—bring a friend!

January Meeting— Gary Coy: *What I Got for Christmas*

We continue a January tradition—former DMA President, current Trustee, and Network Manager *extraordinaire* (he manages Speedway's corporate grid) **Gary Coy** calls on audience members to "show & tell" what they received for Christmas/Khannukah!

Join us for an evening of fun with that inimitable Master of Ceremonies, **Gary Coy** on **Tuesday, 28 January,** at our usual time and place: **7:00 P.M. at T.J. Chump's Restaurant** in Huber Heights. (Come at 6 if you'd like to dine with us.) Tap or click *here* for a map. Go to the Web site below for more information:

https://www.meetup.com/Dayton-Microcomputer-Association-Meetup/events/

... TDB

Minutes are normally published almost two months late, because the Minutes for, say, the December Board meeting must be approved by the Trustees at the *following month's* meeting—in this case, early January. The corrected and approved December Minutes would usually appear in the January DATABUS (this issue), published toward the end of the month. However, there are no Minutes for December because not enough Trustees showed up to form a quorum. Since there was no December issue of THE DATABUS, November Minutes are printed here.

Trustees' meetings are on the *first Monday of each month,* except when that day is a legal holiday. They begin at 7 P.M., and are open to all DMA members. See the end of the Minutes (page 6) for the location of February's meeting. Trustees have recently had "bring your own sandwich or fast food" meetings. Those wishing to dine with the Trustees should come about 6:30, and, of course, bring their own food and nonalcoholic drinks.

MINUTES—DMA BOARD OF TRUSTEES
Meeting of Monday, November 4, 2019

CALL TO ORDER

The meeting was called to order at 7:04 P.M. by President Peter Hess.

Trustees present: Martin Arbagi, Glady Campion, Edwin Davidson, Pat Flynn, Peter Hess. **Excused:** Debra McFall, Gary Turner. **Absent:** Brent Kerlin. **Guests:** Mark Camden.

OFFICERS' REPORTS

President – Peter Hess

Thanks to Mark Camden and Gary Coy for their presentation on Computer Security. They filled in for the scheduled speaker who was unable to make the meeting.

Vice President – Ken Phelps

The Dayton Diode "reboot" meeting was attended by JJ Krull, Mark Camden, and Glady Campion. Mark Camden will try to update their Web sites. JJ Krull is still hoping to find a few dedicated new members who will help restart the group.

Secretary – Glady Campion

Glady presented Minutes for the previous two board meetings. Martin Arbagi moved they both be accepted. Edwin Davidson seconded and the motion passed with Glady abstaining.

Treasurer – Pat Flynn

Pat presented the Treasurer's report:

COMMITTEE REPORTS

Audit – Glady Campion

In progress

Fund Raising – Peter Hess

We received a donation through Facebook. Also, one of our members made a generous donation to

ACCOUNT BALANCES:

Fifth Third Checking	$12,682.05
Fifth Third Saving	5,725.71
WPCU Share	5.00
WPCU Checking	991.80
WPCU Money Market	4,045.18
Pay Pal	169.03
TIAA Certificate of Deposit	5,310.72
Invested with Dayton Foundation	+90,772.98
Grand Total:	**119,702.47**

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(DECEMBER MINUTES—Continued from page 4)

DMA in the name of Kevin Unangst. Kevin grew up in the Dayton area, went to Wright State, worked his way through the ranks at Microsoft, and is currently Director of Nintendo. Kevin was active in DMA many years ago and is one of our lifetime members.

Marketing – Edwin Davidson, Pat Flynn, Peter Hess, Debra McFall

Peter is looking for another printer to do our retractable banner. Edwin Davidson is continuing to explore the idea of establishing Repair Parties, both as a service to the community and to spread the name of DMA.

Membership – Glady Campion

As of last month's General Membership meeting, we had 54 Regular, 3 Associate, 0 Student, and 5 Life members for a total of 62. Attendance was 39 and the 50/50 raffle brought in $30.

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

No problems with the website to report. Mark Camden is maintaining the dma1.org website and has offered to train others who want to help.

Peter asked about the ability to receive an email whenever the site is updated and also asked about adding a calendar page. Mark explained how a gmail account could be used to provide a calendar page.

Programs – OPEN!!! We must find a Programs chairman!!!

November – Edwin Davidson volunteered to talk about Scanning, Retouching, and Archiving Old Photos

December – Holiday Dinner!

Other suggested topics: Streaming video, Car hacking, Chromebooks, Bitcoin and Block chain, InitiativeQ.com, Internet Architecture; Smart Home technologies.

Publications – Martin Arbagi

THE DATABUS for November is in the works.

UNFINISHED BUSINESS

Wright State Archives – Martin Arbagi, Glady Campion

Still in progress

Next Board Meeting

The next Board Meeting will be 7:00 P.M. on Monday, December 2, 2019 at Fairborn Fire Station #2, 2200 Commerce Center, Fairborn. Those who want to join us for dinner should meet between 6:00 P.M and 6:30 P.M at the Fire Station, and bring their own fast food.

Fairborn Fire Station #2 has been reserved through December 2019.

Holiday Dinner – Glady Campion

The dinner will be 7:00 P.M on Wednesday, December 4, on the Patio at TJ Chumps. Tickets at $5 are available for sale.

ADJOURNMENT

Pat Flynn moved to adjourn at 9:05 P.M. Edwin Davidson seconded and the motion passed.

Respectfully Submitted,
GLADY CAMPION, **Secretary**

Raspberry Pi 4B / Raspbian Buster update

by **Dave SCHWAB—KE8DOC**
DSchwab2 (at) woh.rr.com
Member, The Dayton Microcomputer Association, Inc. DMA1.org

SINCE THE RASPBERRY PI 4B WITH RASPBIAN BUSTER was released in in July, several updates to the Operating System have been released. This includes a BIOS update to help with the temperature of the board.

Downloading the package data and installation of the new packages will take a bit of time. You will be ask to confirm the installation.

Back up any important data and programs before starting this update! The "sudo" command is to execute the commands that follow as the SUPER USER or root user. A SUPER USER can delete and change any file in the system.

Open a Terminal to enter the following commands:

`sudo apt update`
(See figure 1)

`sudo apt upgrade`
(See figure 2, note difference between upDATE & upGRADE)

`sudo apt install rpi-eeprom`
(See figure 3)

… and finally …

`sudo reboot`

… to check if the eeprom update was successful. Open a terminal and enter the following command. *(See next page.)* The dates and ID numbers should *match.* The current date and ID number is based on the information downloaded with the "`apt update`" command. *(See figure 4, next page.)*

`sudo rpi-eeprom-update`

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(*RASPBERRY PI UPDATE—Continued from page 6*)

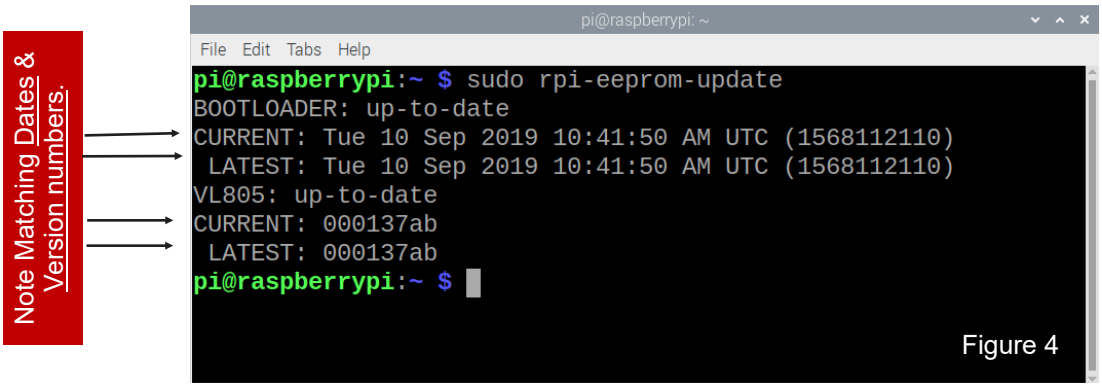

Figure 4

... TDB

My Experience with a Subscriber VPN: Advantages, Costs, Pitfalls, Workarounds

PART 2 OF A TWO-PART SERIES

Part 1 appeared in THE DATABUS, issue of November 2019

By John KROUT, Member, Potomac Area Technology and Computer Society (PATACS)
www.patacs.org
jkrout75 (at) yahoo.com

IN PART 1, you learned about the need for VPNs and how a VPN secures your internet communications. Also Part 1 identified several VPN services that are highly rated, including the one to which I subscribe, IPvanish.

This part explores some of the complications and workarounds that I have encountered.

Real Life VPN Impact

As of late September 2019, I have a VPN installed on my laptop computer, two tablets, and my smart phone. As was the case at work, the VPN at home does not seem to impose any noticeable slowdown on those devices.

I use my second tablet primarily for its Roku app, which is a remote control for my Roku Premiere video streaming box. When I installed and used the IPvanish VPN app on that backup tablet, the Roku app was no longer able to communicate with the Roku box on my home network.

Why did that happen? The tablet could not search the LAN for the IP address of the Roku box. This may be because the tablet communications were encrypted and our home LAN router was not.

This led me to learn about another aspect of subscriber VPNs.

Split Tunneling

In operation, a VPN connection is sometimes referred to as a *tunnel*. That simply means the communication is hidden by encryption, as if concealed inside a tunnel, and cannot be read or understood by a Man in the Middle.

Split tunneling is a feature of the IPvanish app for Android. Many other VPN services offer split tunneling in their apps.

The idea of split tunneling is that you can configure the VPN client app so that, for example, communications by a particular app on my tablet or phone should *not* be encrypted, not sent through the "tunnel" to the VPN server. Apps exempted in that way are *split* away from the encryption tunnel.

Split tunneling is configured on an app by app basis. Lucky me, the Android VPN app for iPvanish enables split tunneling, so I told the VPN app to exempt the Roku app. That way, I can use the app to control the Roku box even while the tablet is otherwise connected to the iPvanish VPN.

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Later on, I set up split tunneling for the Roku app on my smart phone. At that moment, when I applied the config change to implement the split tunneling, my smart phone VPN app was already connected to the VPN. I learned that for the IPvanish VPN client, it is best to set up split tunneling while the VPN app is *not* yet connected to the VPN. I tried when the VPN client app is connected to the VPN; the VPN client app then told me it had to disconnect and reconnect the VPN in order to implement the config change for split tunneling.

I started thinking about other types of in-home communications on a home Local Area Network. The **Internet of Things (IoT)**, meaning lights and appliances connected to your router, is one example. For a control app to communicate with those devices from a phone or tablet running a VPN client app, the control app would have to be split tunneled.

LAN Printers and VPNS

There is one very widespread present-day LAN use that will require split tunneling: I have my printer connected to my home router, so that computers around the house can print.

The initial problem I have is that the Windows VPN client application from IPvanish does *not* permit split tunneling as of September 2019. The IPvanish help desk says the company is working on adding that feature. So I have to wait for IPvanish to update their Windows VPN client app.

If you choose a different VPN service, and you have a printer connected to the LAN at home, make absolutely sure that their VPN client app for your personal computer supports split tunneling, whether it is a Windows box, a Mac box, a Linux box, or a ChromeOS box.

The second problem is that there are a *huge* number of personal computer applications that can print. Examples include all Microsoft Office applications, all LibreOffice applications, all Web browsers, Adobe Acrobat Reader, Notepad, Wordpad, graphics image editors like Adobe Photoshop, general printing applications like PrintMaster (invitations, birthday cards, banners, et cetera), desktop publishing applications, and so forth. It is fairly difficult to identify valuable desktop applications that do *not* include the ability to print.

Because split tunneling is so useful, I am researching other subscriber VPN services and their VPN clients' abilities to support split tunneling. I will report on that in a later article.

***Do Not* Split Tunnel That Web Browser!**

Now, of all the myriad of applications that can print, the one that is most often the target of snooping and therefore most in need of a VPN is a Web browser. Don't set the VPN app to split tunnel that browser.

If you habitually print one or more web pages using your Web browser, there are a couple of ways to work around that problem while connected to a VPN.

The easy case is to connect the computer to the printer using a different method. Most, but not all, printers can be connected to computers by a USB cable.

The two following suggestions are provided in case you cannot do that.

For the special case of downloading and printing PDF files, you can download each PDF using your Web browser. In the VPN client application, apply split tunneling to **Adobe Acrobat Reader,**

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which is far less risky than applying it to your Web browser. Then use Acrobat Reader to load and print the PDFs.

For the more general case, when you need to print Web pages, you can print each Web page through a PDF print driver such as Microsoft Print to PDF or PDFCreator or PDF995. Those drivers create a PDF file instead of sending output to a printer. Then you use the same technique: apply split tunneling to Adobe Acrobat Reader, then use Acrobat Reader to load and print the PDFs to your LAN printer.

Sounds too complicated? But wait, all is not lost.

A More Comprehensive Solution

Some VPN services also allow you to install a VPN client on a *home router*. What are the advantages of that approach? First, the router connects all of your devices to the internet via a VPN server, so long as those devices are at home and connected to the home LAN, either by ethernet or by Wi-Fi. Second, the router VPN client will do the work of VPN client encryption and decryption for all of your devices.

Using this approach, your devices at home need not run a VPN client. Effectively, your device count at home, from the viewpoint of your VPN service, is *one*: the router itself, which handles all VPN encryption and decryption for all your devices. Therefore, the home router must contain a fast CPU and a good amount of RAM and will be expensive.

When all devices use a home router VPN client, your devices at home can communicate with a LAN printer.

When all devices use a home router VPN client, your devices at home can act as the remote control for a Roku box and run an app to control home lights and appliances.

I must say that the installation process for a VPN client on a router is complex and not for novices. It often involves installing a third-party app called DD-WRT on the router as a prerequisite. I watched a YouTube video of how to do the installation for the NordVPN router client, and the process looked daunting to me.

This strikes me as an opportunity for a **user group lab**: work on the installations together during a user group meeting. It would require you to bring your home router to the lab meeting.

Some VPN services even sell routers with the VPN client pre-installed. I think this is probably the best alternative for most folks who want to use a VPN client on a home router.

IPvanish publishes a list of router makes and models on which their router VPN client is known to be installable and is known to work. The list as of September 2019 includes high-end, expensive Linksys routers, Asus routers, and Netgear routers. I checked out the prices of those routers: the lowest I saw was about $150. With the VPN client pre-installed, the price would increase.

When you are away from your home router, yes, you will still run the VPN client on your phone, tablet or computer. But typically you won't bring your Roku box or printer or your lights and appliances along with you.

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Are There Web Sites That Are Not Accessible When You Use a VPN?

At some point in 2019, I read an article published in a user group newsletter which briefly described VPNs. The author made a broad claim, without details, that VPNs *prevent use of video streaming services and financial web sites*. The VPN service was not specified, the streaming service was not specified, the financial sites were not specified, and the browser and operating system used by the author were not specified. Perhaps the author was using a home router running a VPN client. Again, no details were provided.

As I was wrapping up this article series, I went looking for that article. I could not find it.

That claim was *questionable*, in my opinion. The traveling public use those sites on the Web all the time while on the go, even overseas. Netflix in particular encourages use by travelers.

More generally, subscriber VPN services address *how* users access the Web, and do not act as content censors. Well, I admit VPNs of some corporations and government agencies block certain types of Web content that they deem unrelated to work. And I suspect in some small countries the local banks lobby the government to prohibit access to foreign banks through the Web, a simple type of protectionism for the local banks.

But that is another big reason why VPNs exist: to enable connections to foreign Web sites with powerful security so that government snooping does not know what you are accessing on the Web. The only IP addresses the snoops can see are those of your device and the VPN server.

So, as soon as I got my IPvanish account set up and I got the VPN client app installed on my laptop computer, I started testing access to financial web sites for the accounts I use, my stock brokerage, my credit card banks, and my checking account bank. I also tested watching a video on

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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 (preferably 600 dpi or better) to Editor@DMA1.org, or give your business card to **Martin Arbagi,** the Editor, at any DMA meeting. We can embed a link to your Web site (if you have one) in 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.* See the example just above, which includes a member discount. But the advertiser (Steve Davis) could not have posted that discount on his Web site. It appears *only* in THE DATABUS.

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the Netflix web site.

Here's how I did that test:

- ✓ First, I connected to an IPvanish VPN server in the Boston Massachusetts area. I accessed all those sites and kept track of what happened.
- ✓ Second, I connected to an IPvanish VPN server in the London England area. Again, I accessed all those sites and kept track of what happened.

My tests used a Toshiba Satellite laptop running Windows 10, and the Firefox Web browser. The results appear in **Figure 1.**

Service	Service type	Boston VPN server	London VPN server
Netflix	Video streaming	Success	Success
www.Citicards.com	Credit card issuer	Success	Success
www.Americanexpress.com	Credit card issuer	Success	Success
www.usaa.com	Credit card issuer	Success	Success
www.bankwithunited.com	Checking account bank	Success	Success
www.schwab.com	Stock brokerage	Success	Success

In short. I found that Netflix worked, my three-credit card bank Web sites worked, my stock brokerage Web site worked, and my checking account bank web site worked. That was true even when accessing those through the London, England VPN server.

I did learn also that Netflix and my stock brokerage site both require that I enable cookies. I did that. I also have my Firefox browser set so that, when I shut down Firefox, it deletes all cookies that were created by Web sites during its current use.

Cookies are one way that snooping is implemented. But there are also good cookies.

Cookies are used to "remember" your login ID on various Web sites such as e-mail, Amazon.com, and geocaching.com, so that you need not log in again when you revisit the sites.

Cookies are also central to the way retail shopping and bank transactions are handled in your Web browser.

So the lesson is: set up your browser to allow sites to install cookies, so you can shop and use the bank and stock brokerage sites.

To avoid keeping bad cookies, I set the bowers to delete *all* cookies installed during the current Web browser use, when I shut down the browser, after shopping or banking is done. That way I throw out the bad cookies, but I am forced to discard the good cookies too.

And shut down your browser promptly. Don't let it run for days at a time.

The regrettable side effect is that I must log into Yahoo! e-mail, Verizon e-mail, geocaching.com and Amazon.com every time I use the browser to access those sites. I can even checkmark the Web site login box saying "Remember me." The remembrance works until I shut down the

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About The Dayton Microcomputer Association, Inc. (DMA)

MORE THAN FORTY-THREE YEARS AGO, a small group of computer enthusiasts from the Dayton, Ohio area gathered around a kitchen table looking at, and playing with, a first-generation personal computer called the Altair 8800, which 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 the Altair to Bill Gates, and later, 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 together with many others to form THE DAYTON MICROCOMPUTER ASSOCIATION (DMA), now one of 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 manufacturers and publishers — with users of those products. User groups (both computer and technology) provide an environment where more experienced technology users introduce additional and advanced techniques to the less informed.

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 living at the same address as a Regular Member). Nonvoting Student Memberships are *free* to students through age 22. General Meeting door prizes, and both product and service discounts are available to all DMA members. **... TDB**

(VIRTUAL PRIVATE NETWORKS—Continued from page 12)

Web browser and the cookies get purged.

I am willing to live with that side effect.

Was my test a *comprehensive* one? No. I do not have an account for every bank and every stock brokerage house in the US. Nor do I have an account with every VPN service. So a comprehensive test is just about impossible.

But I think my test results provide good news. Not every VPN service causes such problems. Not every browser causes such problems. Not every Web site experiences such problems. **... TDB**

ABOUT THE AUTHOR: *John Krout* is a former President of the Washington Area Computer User Group (WAC), one of two groups that merged to become the Potomac Area Technology and Computer Society (PATACS). He has been writing about personal computer uses since he joined WAC in the early 1980s. He is a frequent contributor to PATACS Posts, and occasionally provides presentations on tech issues at PATACS meetings. He lives in Arlington, VA and is a writer for the Thales Group, a major maker of automated fingerprint identification hardware, supporting the use of that hardware in the computer system of a major federal government agency.

Dayton Microcomputer Association Membership Form

Today's date _____/_____/_____

❒ **New** Please credit the DMA member who recruited me: _____

❒ **Renew** Contact information below is new ❒ Y ❒ N

TYPE OF MEMBERSHIP

❒ ***Regular*** **Telephone:**

Name _____ Home or Work (_____) _____-_____

E-mail _____@_____•_____ Mobile Phone (_____) _____-_____

❒ **Associate** Family or Associate memberships are for a family or other member living at the same address as a Regular Member. Name of Regular Member _____

Name _____ Home or Work (_____) _____-_____

E-mail _____@_____•_____ Mobile Phone (_____) _____-_____

❒ **Student** Free Student non-voting membership is available to those through 22 years of age, enrolled full-time in a program of higher education. Name of School: _____

Name _____Home or Work (____) ____–_____

E-mail _____@_____•_____Mobile Phone (____) ____–_____

Home Address _____

City _____ State _____ Zip _____

INTERCHANGE

Skills & interests you might share with DMA _____

What you hope DMA will provide _____

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

❒ **SHELL ACCOUNT** A shell account on the DMA Web server provides file storage, hosting of a personal non-commercial Web site, @dma1.org e-mail alias (forwarding address), all for a one-time fee of $10. A user name must be 8 alpha characters. The usual default is your last name and first initial, with no caps or punctuation. DMA reserves the right of final decision on all user names: 1st choice _____ 2nd choice _____

Make your check payable to: **The Dayton Microcomputer Association, Inc.**
Mail check and application to: **PO Box 4005, Dayton OH 45401-4005**

Or use Pay Pal to send your payment to: **membership@dma1.org**

DMA use only

Member# _____ Exp ____/_____ [ ] Cash [ ] Check# _____ [ ] Pay Pal Proc by _____

Member# _____ Exp ____/_____ [ ] Cash [ ] Check# _____ [ ] Pay Pal Proc by _____

Member# _____ Exp ____/_____ [ ] Cash [ ] Check# _____ [ ] Pay Pal Proc by _____

Last Revised October 21, 2019 (typography only)